

**TRANSPORTATION IMPACT STUDY &
PARKING JUSTIFICATION STUDY UPDATE**

**64 & 66 THOMAS STREET AND JOYMAR DRIVE
HIGH-RISE RESIDENTIAL DEVELOPMENT**

**CITY OF MISSISSAUGA
REGION OF PEEL**

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Revision Number	Date	Comments
Rev.0	March 2024	Issued for Review
Rev.1	April 2024	Issued for 1 st Submission
Rev.2	December 2024	Issued for 2 nd Submission

Executive Summary

C.F. Crozier & Associates (Crozier) was retained by De Zen Realty Company, Ltd. to complete a Transportation Impact Study (TIS) for a high-rise residential development situated at 64 & 66 Thomas Street and Joymar Drive in the City of Mississauga, Region of Peel.

A Transportation Impact Study (TIS) was previously prepared and submitted in June 2019 based on an older Site Plan, the TIS was updated and issued for resubmission in February 2022, February 2023, and April 2024. This Transportation Impact Study and Parking Justification Study Update has been prepared to address the City's comments dated November 14, 2024.

The analysis undertaken herein was completed using the Site Plan prepared by SRM, dated December 3, 2024. The development consists of one 18-storey and one 22 storey residential building connected by 7-8 story podium and one 12-storey residential building consisting of 1,043 dwelling units.

The overall site proposes a total of 966 vehicle parking spaces (835 residential and 131 visitor), 681 bicycle parking spaces (626 long-term and 55 short-term) and consists of multiple underground parking levels.

Existing Conditions

The study road network operates with a Level of Service "D" or better, except for the southbound left-turn at the intersection of Thomas Street and Joymar Drive in the weekday P.M. peak hour, which operates at Level of Service "E". Additionally, all queues are expected to be contained within their existing storage lengths.

2028 Future Background Conditions

- All the study intersections operate similar to the existing conditions, except for the southbound left-turn at the intersection of Thomas Street and Joymar Drive, which deteriorated to LOS "F" due to an increase in delay by approximately 51 seconds. The background developments do not contribute to the increased delay and it is primarily attributed to growth rate along Thomas Street.
- The 95th percentile queue length for the southbound left-turn at the intersection of Thomas Street and Joymar Drive is expected to increase and exceed the available storage in the weekday P.M. peak hour. However, the 50th percentile queue length is expected to stay within the available storage.

Site Generated Trips

The proposed development is expected to generate 283 two-way (74 inbound and 209 outbound) trips during the weekday A.M. peak hour and 334 two-way (207 inbound and 127 outbound) trips during weekday P.M. peak hour.

2028 Future Total Conditions

- The southbound left-turn is expected to operate at Level of Service "F" in the weekday P.M. peak hour. The control delays are expected to increase by 145 seconds compared to the future background scenario. With only 7 trips originating from the site and making southbound left-turns at the intersection, it is not expected to be the primary cause for the delays. The volume-to-capacity ratio of 0.89 is well within the threshold of 1.00

- The northbound left-turn queues at the intersection of Queen Street and Thomas Street and southbound left-turn queues at the intersection of Thomas Street and Joymar Drive are expected to increase by 10 metres in the weekday P.M. peak hour compared to the future background conditions. The 50th percentile queues are expected to be within the storage.

Site Access Review

Sight lines, Corner Clearance and Clear Throat Length are adequate for the proposed site accesses per the TAC standards. The vehicles turning right from the site access via Tannery Street have sufficient sight distance to the end of Tannery Street and to the intersection of Joymar Drive and Tannery Street.

Vehicle Maneuvering

Vehicle maneuverability diagrams were prepared and indicate that all design vehicles can circulate the proposed site adequately without encroaching on any curbs or obstacles.

Parking

A parking review and justification was conducted and the development given the proposed parking supply is below the City's By-law requirement by 182 parking spaces. It is noted that proposed resident and visitor parking supplies can be supported given the site is located close to existing transit uses and based on a review of observed parking rates, as well as previous exceptions within the City of Mississauga. Furthermore, the site is supported by a number of Transportation Demand Management (TDM) measures to support the reduced parking supply.

Transportation Demand Management (TDM)

The proposed TDM measures include "hard" measures such as cycling and pedestrian facilities, as well as "soft" measures such as unbundling the parking supply and providing transit incentives to reduce single occupant vehicle usage within the study area.

The analysis contained herein was prepared using the most recent Site Plan prepared by SRM, dated December 3, 2024. Any minor changes to the data will not materially affect the conclusions contained within this report.

Conclusion

In conclusion, the Zoning By-Law Amendment (ZBA) and Official Plan Amendment (OPA) can be supported for the proposed development at 64 & 66 Thomas Street and Joymar Drive, in the City of Mississauga, from a traffic operations perspective as the boundary road system can accommodate the increase in traffic volumes attributable to the proposed development.

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1.0 Introduction

C.F. Crozier & Associates Inc. (Crozier) was retained by De Zen Realty Company. Ltd. to complete a Transportation Impact Study (TIS) and Parking Justification Study (PJS) for a high-rise residential development situated at 64 & 66 Thomas Street and Joymar Drive in the City of Mississauga, Region of Peel.

A Transportation Impact Study (TIS) was previously prepared and submitted in June 2019 based on an older Site Plan, the TIS was updated and issued for resubmission in February 2022, February 2023, and April 2024. This Transportation Impact Study and Parking Justification Study Update has been prepared to address the City's comments dated November 14, 2024. The Comment Response Matrix relevant to this Study is included in **Appendix A**.

The purpose of the Transportation Impact Study (TIS) is to evaluate the impacts of the proposed development on the surrounding road network and recommend transportation-related mitigation measures, if required.

The Transportation Impact Study is prepared to support Official Plan Amendment and Zoning By-Law Amendment applications. The study has been completed in accordance with procedures set out in the City of Mississauga's updated Transportation Impact Study Guidelines in March 2023.

A Terms of Reference (ToR) encompassing the scope of the Transportation Impact Study was circulated to the City of Mississauga on April 18, 2023, and comments were received on April 24th, 2023. A Terms of Reference encompassing the scope of the Parking Justification Study was circulated on August 14, 2023, and comments were received on September 8, 2023. Correspondence from the City is included in **Appendix A**.

1.1 Development Lands

The existing subject lands cover an area of approximately 2.77 ha in area and currently consists of commercial structure, a paved parking lot and storage areas. The site is located in a mixed commercial and residential neighborhood and is bounded by commercial developments and mullet creek to the east, Thomas Street to the south, Joymar Drive and residential developments to the west and Tannery Street to the north.

The property is located in the Streetsville area of Mississauga and is located within a 10-minute walk from the Streetsville GO station.

The Site Location is included in **Figure 1**.



Legend

 **Site Boundary**

66 Thomas Street

Site Location



Figure 1

Project No. 1419-4679

Date. 15/03/2024

Analyst. Aarzo D

1.2 Development Proposal

Per the most recent Site Plan prepared by SRM, dated December 3, 2024, the elements envisioned for the proposed residential development include:

- Two high-rise buildings connected by seven to eight storey podiums and one high-rise building consisting of 1,043 dwelling units.
- A total of 966 parking spaces consisting of 835 residential parking spaces and 131 visitor parking spaces.
- A total of 681 bicycle parking spaces consisting of 626 long-term parking spaces and 55 short-term parking spaces.
- A full-moves access via Tannery Street and Joymar Drive.

The development is anticipated to be fully built out by the year 2028. The current proposed Site Plan is included in **Appendix B**.

2.0 Existing Conditions

The following intersections were reviewed as part of the study area (per confirmation with City staff):

- Thomas Street and Queen Street (Signalized)
- Thomas Street and Broadway Street (Unsignalized)
- Thomas Street and Streetsville GO Station Parking Lot Entrance (Signalized)
- Thomas Street and Joymar Drive (Unsignalized)
- Thomas Street and Hillside Drive (Unsignalized)
- Thomas Street and Gaffney Drive/McFarren Boulevard (Signalized)
- Joymar Drive and Tannery Street (Unsignalized)
- Tannery Street and Rutledge Road (Unsignalized)
- Tannery Street and Broadway Street/Crumbie Street (Unsignalized)

The following section provides a description of the study area from a transportation context, as well as a traffic operations analysis of the study road network.

2.1 Study Road Network

The details of the roadways included in the study road network are provided in **Table 1**. The road classification is based on the Mississauga Official Plan – Part 2 provided in **Appendix C**.

A speed limit of 40 km/hr is assumed for roadways not consisting of a posted speed limit.

Table 1: Study Road Network Details

Roadway	Type	Speed (Km/hr)	Configuration
Queen Street	Major Collector	40 (posted)	Two-Lane
Thomas Street	Major Collector	50 (posted)	Four-Lane
Tannery Street	Minor Collector	40 (posted)	Two-Lane
Joymar Drive	Minor Collector	40 (assumed)	Two-Lane
Rutledge Road	Local	40 (assumed)	Two-Lane
Crumbie Street	Local	40 (assumed)	Two-Lane
Broadway Street	Local	40 (assumed)	Two-Lane
Hillside Drive	Local	40 (assumed)	Two-Lane
Gaffney Drive	Local	40 (assumed)	Two-Lane
McFarren Boulevard	Minor Collector	40 (assumed)	Two-Lane

2.2 Active Transportation

The active transportation facilities were observed in the study road network and shown in **Table 2**.

Table 2: Existing Active Transportation

Roadways	Sidewalk	Bicycle
Queen Street	Available on both sides of the roadway	Under implementation on both sides of the roadway
Thomas Street	Available on both sides of the roadway	No bicycle lanes are present, and cyclists are expected to share the road with vehicles
Tannery Street	Available on both sides of the roadway	
Joymar Drive	Available on west side of the roadway	
Broadway Street	Available on east side of the roadway	
Crumbie Street	Available on both sides of the roadway	
Rutledge Road	Available on east side of the roadway	
Gaffney Drive	Available on both sides of the roadway	
McFarren Boulevard	Available on both sides of the roadway	
Hillside Drive	Available on east side of the roadway	

The subject site is located in the Streetsville area which is highly walkable based on the sidewalk availability on both sides of the Major and Minor Collectors and on at least one side on the local roadways.

No separate bicycle lanes are currently present or proposed for Joymar Drive and Tannery Street. Cyclists are expected to share the roadway with vehicles, with the exception of Queen Street, where an existing cycle lane will be further expanded southbound based on the City's Cycling Master Plan. Additionally, separated bicycle lanes are proposed for Thomas Street as part of the proposed cycling network outlined in the Cycling Master Plan.

The Cycling Master Plan excerpts are attached in **Appendix D**.

2.3 Study Intersections

The intersection of **Queen Street and Thomas Street** is a three-legged signalized intersection. The eastbound approach consists of single left and right-turn lane. The northbound approach consists of an auxiliary left-turn lane and shared through/right-turn lane. The southbound approach consists of a single shared through/right-turn/left-turn lane.

The intersection of **Thomas Street and Broadway Street** is a three-legged stop control intersection with stop control on Broadway Street. The eastbound approach consists of a single shared through/left-turn lane and single shared through/right-turn lane. The westbound approach consists of a single shared through/left-turn lane and single shared through/right-turn lane. The southbound approach consists of a single shared through/right-turn/left-turn lane.

The intersection of **Thomas Street and Streetsville Go Station Entrance/Private Access** is a four-legged signalized intersection. The eastbound approach consists of a single shared through/left-turn lane and single shared through/right-turn lane. The westbound approach consists of a single shared through/left-turn lane and single shared through/right-turn lane. The southbound approach consists of a single shared through/right-turn/left-turn lane. The northbound approach consists of a single left-turn and right-turn lane.

The intersection of **Thomas Street and Joymar Drive** is a three-legged stop control intersection with stop control on Joymar Drive. The eastbound approach consists of a single shared through/left-turn lane and single shared through/right-turn lane. The westbound approach consists of a single shared through/left-turn lane and single shared through/right-turn lane. The southbound approach consists of an auxiliary left-turn lane and shared through/right-turn lane.

The intersection of **Thomas Street and Hillside Drive** is a three-legged stop control intersection with stop control on Hillside Drive. The northbound approach consists of a single shared through/left-turn/right-turn lane. The eastbound approach consists of a single through and shared through/right-turn lane. The westbound approach consists of a single through and shared through/left-turn lane.

The intersection of **Thomas Street and Gaffney Drive/McFarren** is a four-legged signalized intersection. The northbound approach consists of a shared through/right-turn lane and single through lane. The southbound approach consists of a single shared through/left-turn/right-turn lane. The eastbound approach consists of an auxiliary left-turn, right-turn lane and two through lanes. The westbound approach consists of an auxiliary left-turn lane, a single through lane and shared through/right-turn lane.

The intersection of **Tannery Street and Joymar Drive** is a four-legged stop control with stop control on all approaches and consists of shared through/right/left-turn lane at all the approaches.

The intersection of **Tannery Street and Rutledge Road** is a three-legged stop control intersection with stop control on Rutledge Road and shared through/right/left-turn lane at all the approaches.

The intersection of **Tannery Street and Broadway Street/Crumble Street** is a four-legged stop control intersection with stop control on north and south approach. All the approaches consist of a shared

through/right/left-turn lane. The intersection is located approximately 25 metre east of the railway crossing.

Figure 2 illustrates the study roadways.

2.4 Transit Network

The subject site is located in an area that is served by the MiWay Transit network. The subject site is within walkable distance of bus stops along Thomas Street and Queen Street.

MiWay Bus Route 44 is a bus route which runs from Meadowvale Town Centre to the University of Toronto Mississauga (UTM) campus. The bus stops are located within 350 metres of the subject site on Queen Street.

MiWay Bus Route 9 is a bus route which runs from Churchill Meadows Community Centre to the City Centre Terminal. The bus stops are located within 200 of the subject site on Thomas Street.

The subject site is also within ~10-minute walking distance from the Streetsville GO Station.

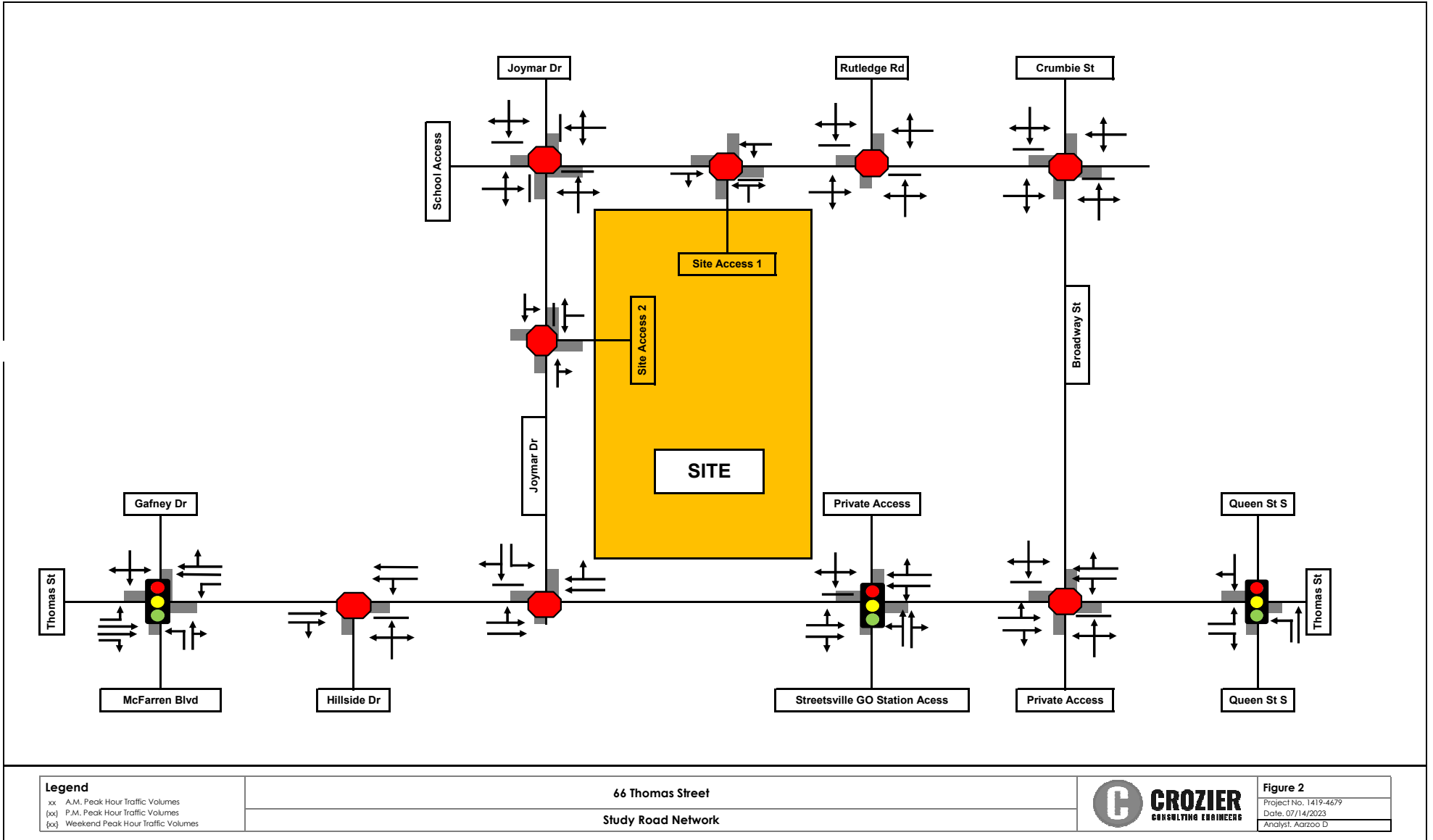
Table 3: Existing Weekday Transit Service Headway

Route	AM Peak Hour	PM Peak Hour
MiWay Transit (Route 9 – Rathburn to Thomas)	25 minutes	25 minutes
MiWay Transit (Route 44 – Mississauga Road)	20 minutes	20 minutes
GO Transit (Route 21 – Milton)	15 minutes	15 minutes

Within the GO Transit network, the Streetsville GO Station is located south of Thomas Street. During the peak periods, GO trains operate with headway of approximately 15 minutes, while headways during the off-peak period are approximately 30 minutes. The Milton line connects Streetsville to Union Station in the east and to Milton GO Station in the west.

The available MiWay Transit 44 and 9 routes also provide direct connections to major destinations such as Meadowvale Town Centre, City Centre, and UTM. MiWay Routes 44 and 9 operate at headways of 20 minutes and 25 minutes respectively during both the am and pm weekday peak hours.

The transit schedules for MiWay and GO are included in **Appendix E** and **Figure 3** shows the existing transit network surrounding the proposed development.

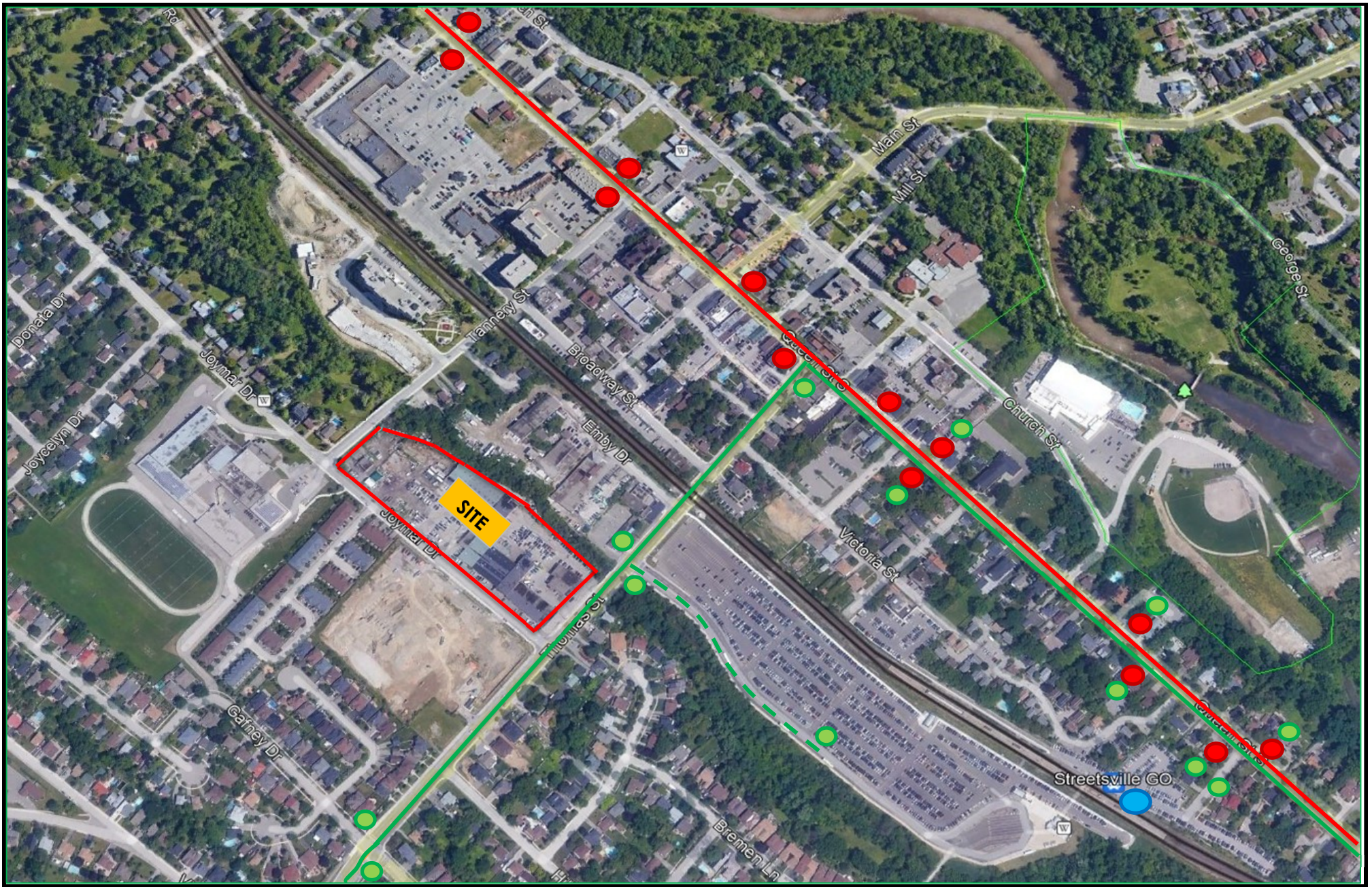


Legend
 xx A.M. Peak Hour Traffic Volumes
 (xx) P.M. Peak Hour Traffic Volumes
 (xx) Weekend Peak Hour Traffic Volumes

66 Thomas Street
 Study Road Network



Figure 2
 Project No. 1419-4679
 Date: 07/14/2023
 Analyst: Aarzo D



	MiWay Transit Route 9
	MiWay Transit Route 44
	Go Station

66 Thomas Street
Transit Routes



Figure 3
Project No. 1419-4679
Date. 15/03/2024
Analyst. Aarzoo D

2.5 Traffic Data

Turning movement counts at the study intersections were conducted by Spectrum Traffic Inc. on Wednesday, May 10th, 2023, between the weekday A.M. peak hours of 6:00 A.M. and 10:00 A.M. and weekday P.M. peak hours of 3:00 P.M. and 7:00 P.M. except for the intersection of Tannery Street and Broadway Street/Crumble Street, where the counts were conducted on Thursday March 30th, 2023 between the weekday A.M. peak hours of 6:00 A.M. and 10:00 A.M. and weekday P.M. peak hours of 3:00 P.M. and 7:00 P.M.

A peak hour factor of 0.92 was used for all movements on all approaches in the study area per the City of Mississauga's TIS guidelines.

The traffic data containing turning movement counts and signal timings is attached in **Appendix F**.

2.6 Traffic Modelling

The evaluation of intersections within this report is conducted based on the methodology outlined in the Highway Capacity Manual (2000), using Synchro 11 modelling software. Intersections are assessed using a Level of Service (LOS) metric, with ranges of intersection delays assigned a letter from "A" to "F". For stop-controlled intersections, a Level of Service "A" or "B" would typically be measured during off-peak hours when lesser traffic volumes are on the roadways. Levels of Service "C" through "F" would typically be observed during commuter peak hours when significant vehicle volumes would cause lengthy travel times. The Level of Service definitions for signalized and stop-controlled intersections are included in **Appendix G**.

The City/Town/Region's Transportation Impact Study Guidelines provide the following parameters indicating critical operations requiring mitigation measures:

- For signalized intersections,
 - Volume-to-capacity (v/c) ratio of 0.85 or greater for through or shared turning movements, and a v/c ratio of 1.00 or greater for exclusive turning movements.
 - 95th percentile queues exceeding the available storage length.
- For stop-controlled intersections:
 - A Level of Service "E" or worse, or movement v/c ratios exceeding 0.85
 - 95th percentile queues exceeding the available storage length.

2.7 Intersection Operations

The traffic operations at the study intersections were analyzed based on observed traffic volumes during the weekday A.M. and P.M. peak hours.

Table 4 summarizes the existing traffic operations within the study area.

Table 4: 2023 Existing Levels of Service

Intersection	Movement	Level of Service		Control Delay		V/C Ratio	
		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
Queen St & Thomas St (Signal)	Overall	B	B	15.9	13.5	0.75	0.71
	EBL	D	D	44.4	50.7	0.75	0.71
	EBR	A	B	5.0	11.4	0.32	0.48
	NBL	A	A	8.5	8.5	0.16	0.30
	NBTR	A	A	8.7	6.7	0.31	0.31
	SBLTR	B	A	10.3	9.0	0.49	0.56
Thomas St & Broadway St (Stop – Minor)	Overall	C	D	16.8	25.8	0.14	0.28
	EBLTR	A	A	3.5	4.3	0.12	0.12
	WBLTR	A	A	0.1	0.0	0.09	0.14
	NBLTR	C	D	16.8	25.8	0.01	0.04
	SBLTR	B	B	11.1	13.7	0.14	0.28
Thomas St & Streetsville Go Entrance (Signal)	Overall	B	C	14.5	20.3	0.80	0.74
	EBLT	A	B	7.2	16.8	0.31	0.40
	EBR	A	A	3.8	3.6	0.46	0.13
	WBL	A	B	3.1	10.0	0.12	0.10
	WBTR	A	B	8.0	14.3	0.17	0.52
	NBLT	E	D	61.1	42.7	0.80	0.74
	NBR	C	C	24.2	25.3	0.16	0.20
	SBLTR	A	A	0.0	2.3	0.00	0.03
Thomas St & Joymar Dr (Stop-Minor)	Overall	D	E	26.1	39.4	0.32	0.32
	EBLT	A	A	4.2	4.3	0.32	0.20
	WBTR	A	A	0.0	0.0	0.14	0.32
	SBL	D	E	26.1	39.4	0.12	0.25
	SBR	B	B	10.3	13.8	0.12	0.27
Thomas Street & Hillside Drive (Stop-Minor)	Overall	C	C	20.8	18.7	0.37	0.36
	EBT	N/A	N/A	0.0	0.0	0.37	0.21
	EBTR	N/A	N/A	0.0	0.0	0.20	0.14
	WBLT	A	A	1.2	1.7	0.02	0.05
	WBT	N/A	N/A	0.0	0.0	0.17	0.36
	NBLR	C	C	20.8	18.7	0.29	0.24
Thomas Street & McFarren Blvd/Gaffney Dr (Signal)	Overall	A	A	7.8	6.1	0.38	0.37
	EBL	A	A	5.9	5.9	0.01	0.07
	EBT	A	A	6.4	5.3	0.35	0.20
	EBR	A	A	0.0	0.2	0.02	0.03
	WBL	A	A	3.2	1.6	0.07	0.10
	WBTR	A	A	4.2	2.4	0.18	0.31
	NBL	D	D	42.6	50.1	0.15	0.21
	NBTR	B	C	15.3	21.5	0.37	0.37
SBLTR	C	D	31.7	40.6	0.38	0.32	

Intersection	Movement	Level of Service		Control Delay		V/C Ratio	
		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
Tannery St & Joymar Dr (All-Way Stop)	Overall	B	A	10.4	8.7	0.32	0.23
	EBLTR	A	A	9.0	7.5	0.16	0.01
	WBLTR	A	A	9.6	8.7	0.24	0.23
	NBLTR	A	A	9.9	8.2	0.29	0.18
	SBLTR	B	A	10.4	8.3	0.32	0.13
Tannery St & Rutledge Rd (Stop-Minor)	Overall	B	A	12.1	9.8	0.11	0.11
	EBLT	A	A	0.1	0.2	0.00	0.00
	WBTR	A	A	0.0	0.0	0.11	0.11
	SBLR	B	A	12.1	9.8	0.01	0.01
Tannery St & Broadway St/Crumbie St (Stop-Minor)	Overall	B	B	13.4	11.9	0.15	0.19
	EBLTR	A	A	1.0	2.3	0.02	0.02
	WBLTR	A	A	1.0	1.9	0.02	0.02
	NBLTR	B	B	13.0	11.9	0.15	0.19
	SBLTR	B	B	13.4	11.4	0.10	0.14

Note 1: The Level of Service of a signalized intersection is based on the average control delay per vehicle (Synchro/ICU). The Level of Service of a stop-controlled intersection is based on the delay associated with the critical minor road approach (HCM 2000).

Note 2: The critical v/c ratio is considered to be the maximum v/c ratio for movements at the intersection. In addition, all v/c ratios greater than 0.85 for through and shared turning movements, and 1.00 for exclusive turning movements are outlined and highlighted.

Table 5: 2023 Existing Queue Lengths

Intersection	Movement	Storage Length (m)	Queue Length			
			50 th (m)		95 th (m)	
			A.M.	P.M.	A.M.	P.M.
Queen St & Thomas St (Signal)	NBL	35	5	10	15	15
Thomas St & Joymar Dr (Stop-Minor)	SBL	10	<5	<5	5	10
Thomas St & McFarren Blvd/Gaffney Drive (Signal)	EBL	30	<5	5	5	10
	EBR	35	<5	<5	<5	5
	WBL	30	<5	5	5	5
	NBL	25	5	5	10	15

Note: The queue lengths exceeding the available storage are outlined and highlighted.

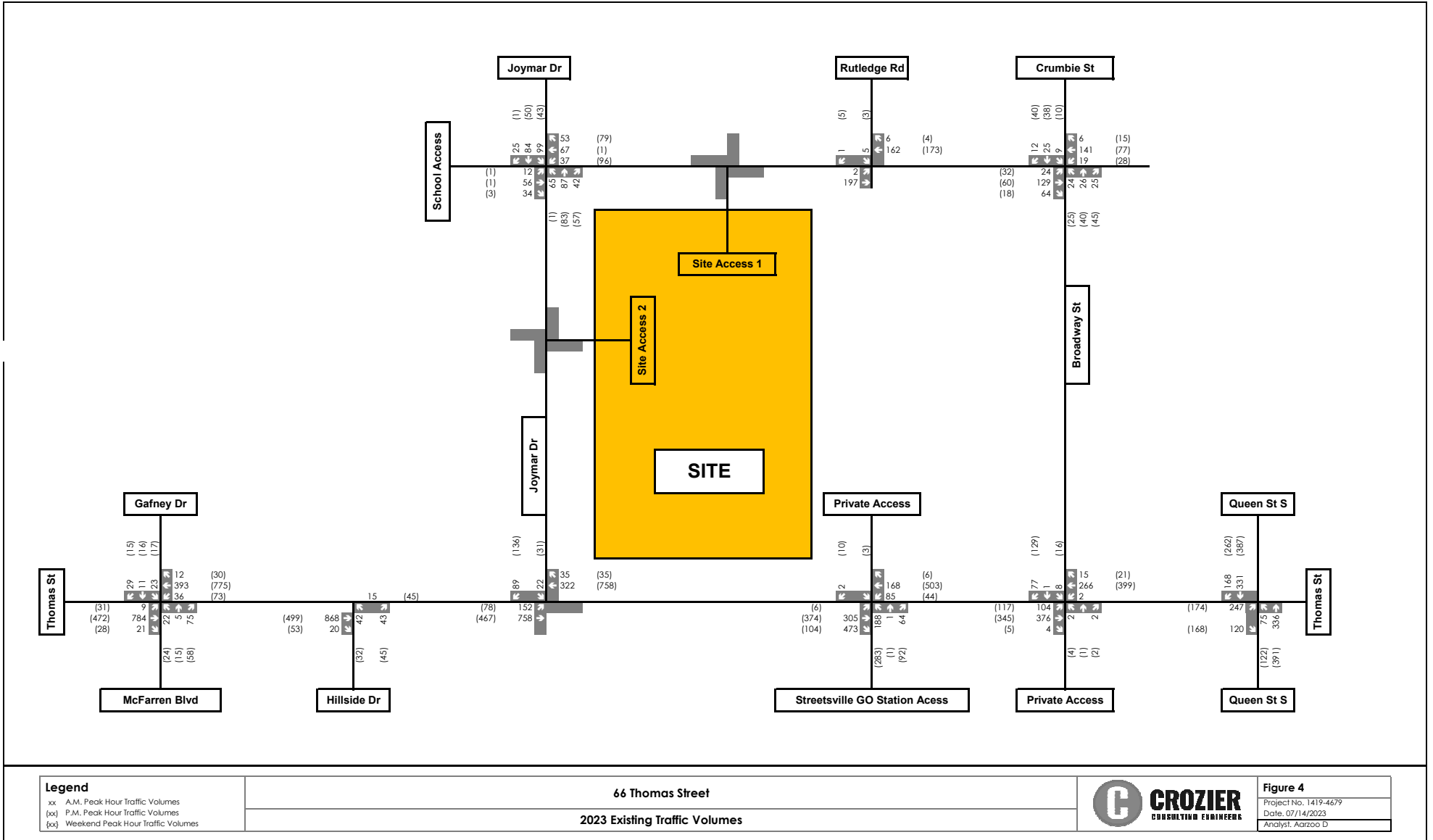
As indicated in **Table 4**, all the intersection approaches in the boundary road network operate with a Level of Service "D" or better in both the Weekday A.M. and P.M. peak hours with minimal delays and well under capacity except for the intersection of Thomas Street and Joymar Drive and Thomas Street and Streetsville GO Station.

The northbound shared through/left-turn approach at the intersection of Thomas Street and Streetsville Go Station operates with a Level of Service "E" in the weekday A.M. peak hour and the

southbound left-turn approach operated with a Level of Service "E" in the weekday P.M. peak hour. However, no capacity concerns are observed at the intersections and the delays are acceptable.

Further, as per the **Table 5**, the 95th percentile queue length for the southbound left-turn lane at the intersection of Thomas Street and Joymar Drives operates at the available storage. However, the 50th percentile queue length operates below the given storage.

Figure 4 shows the existing traffic volumes and detailed capacity analyses are included in **Appendix H**.



3.0 Future Background Conditions

For the analysis of future background traffic conditions, the study considered a future horizon year of 2028 per the original Terms of Reference and given the proposed development has an assumed build-out year of 2028.

The section discusses the methodology and assumptions adopted for the development of the 2028 future background scenario, including the growth rates applied and background developments identified.

3.1 Traffic Growth

Growth rates were provided by the City of Mississauga for Queen Street South and Thomas Street. The compounded growth rate was applied for the horizon years from existing conditions to 2028 to reflect community and employment growth in the area.

The **Table 6** below shows the growth rates for Queen Street South and Thomas Street.

Table 6: Traffic Growth Rate

Roadway	Horizon Year	Peak Hour	Northbound	Southbound
Queen Street	Compounded Annual Growth from 2023 to 2028	A.M.	0.5 %	0.5 %
		P.M.	0.5 %	0.5 %
Thomas Street		A.M.	0.5 %	0.5 %
		P.M.	0.5 %	0.5 %

3.2 Background Development

Future background traffic volumes at the study intersections were determined adding the site-generated trips from background developments to existing traffic volumes per consultancy with the City staff.

The buildout characteristics for the 2028 horizon year were determined based on the most recent data available on construction phasing provided by other developments.

The following background developments were identified as part of the study area, as summarized in **Table 7** below.

Table 7: Background Developments

Development Address	Development Description	Source
180 Rutledge Road	97 Condominium Dwelling Units	Per correspondence with Site Planner (No TIS available)
150 Rutledge Road	301 Condominium Dwelling Units	Per correspondence with Site Planner (No TIS available)
51 & 57 Tannery Street and 208 Emby Drive	Two 15-Storey Towers consisting of 552 Dwelling Units	Crozier (March 2024)
86 Thomas Street	10 Back-to-Back Townhouse Units	NextTrans (June 2020)
80 Thomas Street	Condominium Townhouse consisting of 219 units	NextTrans (October 2016)
120 & 146 Queen Street and 169 Crumbie Street	Mixed-use development consisting of 442 dwelling units, 2,913 m ² of commercial GFA and 320 m ² of office GFA (Phase 1 only)	Crozier (March 2024)

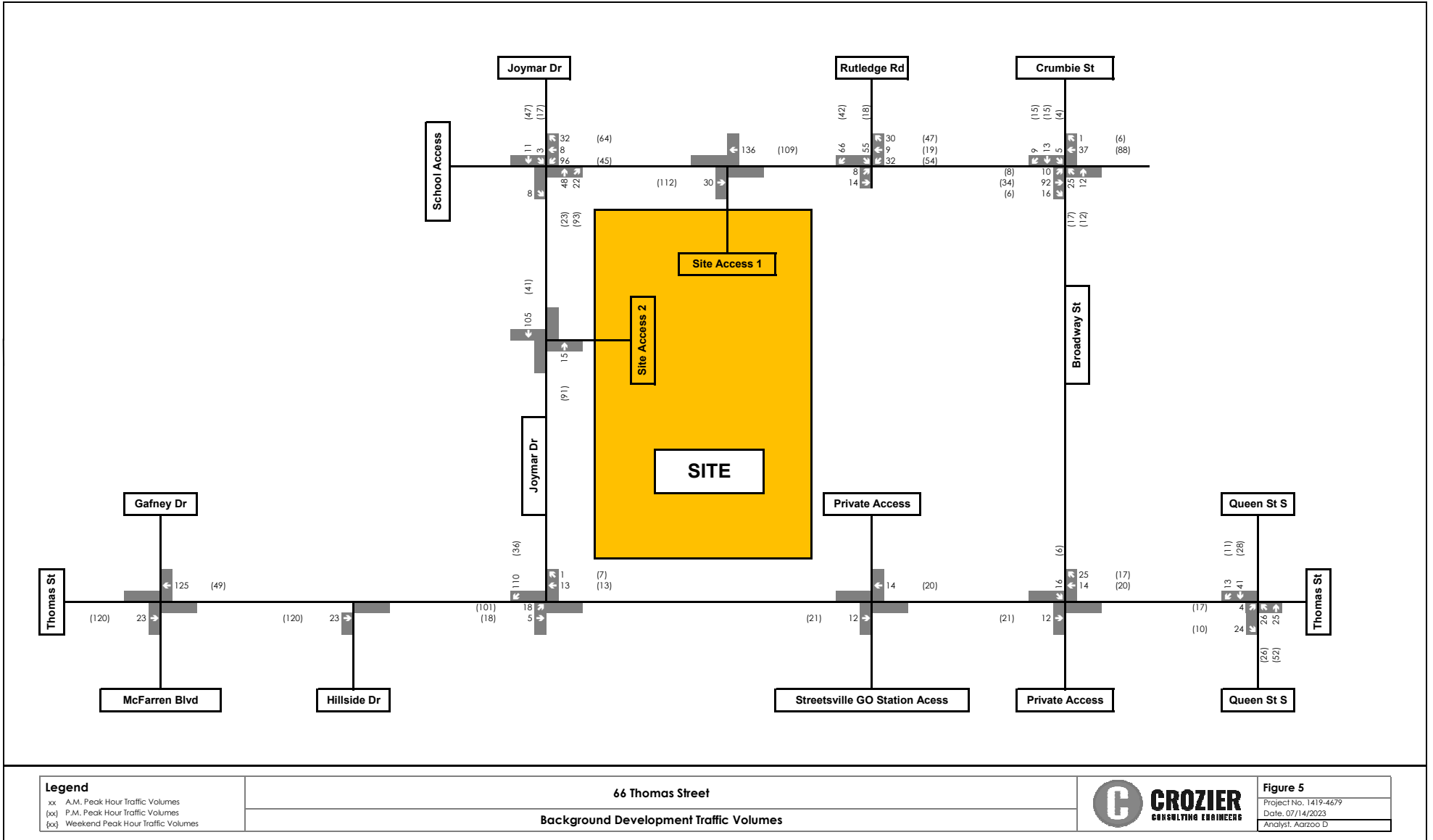
The above developments are expected to be built out by the 2028 horizon year and thus considered for the analysis of the 2028 horizon.

The background developments at 215 Broadway Street and 272, 274, and 278 Victoria Street were recommended for inclusion by the City Staff. However, the site statistics of these developments did not warrant a Traffic Impact Study; therefore, they have not been included in the study.

Additionally, it is noted that the transportation analysis for the development located at 51 & 57 Tannery Street and 208 Emby Drive, and 120 & 146 Queen Street and 169 Crumbie Street are being performed by Crozier and hence the site generated trips by these developments are inputted directly from the analysis for the other development applications being prepared by Crozier. Only the Phase 1 trips for the development located at 120 & 146 Queen Street and 169 Crumbie Street are added in the background study.

It should be noted that the 180 Rutledge Road and 150 Rutledge Road were not warranted for a Transportation Impact Study and the approximate unit counts were obtained from coordination with the Planner on the subject site and the trip distribution for subject site was used to determine the estimated number of trips per consultation with City staff.

Figure 5 illustrates the total background development volumes, and **Appendix I** provides the breakdown of background development volumes.



Joymar Dr

Rutledge Rd

Crumbie St

School Access

Site Access 1

Site Access 2

SITE

Broadway St

Joymar Dr

Private Access

Queen St S

Thomas St

Gafney Dr

McFarren Blvd

Hillside Dr

Streetsville GO Station Access

Private Access

Queen St S

Thomas St

(120) 23 (49)

(120) 23

(101) 18 (18)

(21) 12

(21) 12

(17) 4 (10) 24

(47) (17) 32 (64) 96 (45)

(112) 30

(42) (18) 66 55 30 (47) (19) (54)

(15) (15) (4) 9 13 5 37 (6) (88)

(41) 105 (91) 15

(36) 110 13 (7) (13)

(20) 14

(6) 25 14 (17) (20)

(11) (28) 13 4 1 (1) 26 25 (26) (52)

3.3 Future Background Intersection Operations

Traffic operations at the study intersections were analyzed following addition of volumes from associated growth rates and background developments in the vicinity of the subject development for the horizon year 2028.

Table 8 summarizes the 2028 future background Levels of Service. Detailed capacity analyses are included in **Appendix J**.

Table 8: 2028 Future Background Intersection Operations

Intersection	Movement	Level of Service		Control Delay		V/C Ratio	
		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
Queen St & Thomas St (Signal)	Overall	B	B	16.3	14.7	0.76	0.76
	EBL	D	D	44.2	48.3	0.76	0.76
	EBR	A	A	4.9	9.3	0.36	0.48
	NBL	B	B	10.3	12.4	0.27	0.44
	NBTR	A	A	9.4	8.1	0.35	0.38
	SBLTR	B	B	12.3	11.2	0.58	0.62
Thomas St & Broadway St (Stop – Minor)	Overall	C	D	17.6	28.3	0.22	0.34
	EBLTR	A	A	3.5	4.2	0.13	0.13
	WBLTR	A	N/A	0.1	0.0	0.12	0.16
	NBLTR	C	D	17.6	28.3	0.01	0.04
	SBLTR	B	C	14.0	16.1	0.22	0.34
Thomas St & Streetsville Go Entrance (Signal)	Overall	B	B	14.2	19.5	0.80	0.74
	EBLT	A	B	7.2	15.8	0.33	0.43
	EBR	A	A	3.7	3.0	0.46	0.13
	WBL	A	A	2.7	9.2	0.13	0.11
	WBTR	A	B	7.4	13.8	0.19	0.55
	NBLT	E	D	61.1	42.7	0.80	0.74
	NBR	C	C	24.2	25.3	0.16	0.20
	SBLTR	A	A	0.0	2.3	0.00	0.03
Thomas St & Joymar Dr (Stop-Minor)	Overall	D	F	29.6	90.8	0.33	0.46
	EBLT	A	A	4.6	8.0	0.33	0.28
	WBTR	N/A	N/A	0.0	0.0	0.15	0.34
	SBL	D	F	29.6	90.8	0.14	0.46
	SBR	B	C	11.8	15.6	0.30	0.37
Thomas Street & Hillside Drive (Stop-Minor)	Overall	C	C	25.0	23.8	0.39	0.40
	EBT	N/A	N/A	0.0	0.0	0.39	0.27
	EBTR	N/A	N/A	0.0	0.0	0.21	0.17
	WBLT	A	A	1.0	1.2	0.02	0.06
	WBT	N/A	N/A	0.0	0.0	0.23	0.40
	NBLTR	C	C	25.0	23.8	0.34	0.31
Thomas Street & McFarren Blvd/Gaffney Dr (Signal)	Overall	A	A	7.5	6.0	0.38	0.37
	EBL	A	A	5.9	6.0	0.02	0.08
	EBT	A	A	6.5	5.7	0.37	0.26
	EBR	A	A	0.0	0.2	0.02	0.03
	WBL	A	A	3.2	1.6	0.07	0.12
	WBTR	A	A	4.4	2.5	0.24	0.34
	NBL	D	D	42.6	50.1	0.15	0.21
	NBTR	B	C	15.3	21.5	0.37	0.37
	SBLTR	C	D	31.7	40.6	0.38	0.32

Intersection	Movement	Level of Service		Control Delay		V/C Ratio	
		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
Tannery St & Joymar Dr (All-Way Stop)	Overall	B	B	14.5	11.5	0.52	0.37
	EBLTR	B	A	10.3	8.3	0.20	0.01
	WBLTR	B	B	14.1	11.5	0.52	0.43
	NBLTR	B	B	13.1	10.4	0.45	0.37
	SBLTR	B	A	12.6	10.0	0.39	0.25
Tannery St & Rutledge Rd (Stop-Minor)	Overall	B	B	13.9	11.1	0.26	0.16
	EBLT	A	A	0.5	2.8	0.01	0.04
	WBTR	N/A	N/A	0.0	0.0	0.13	0.16
	SBLR	B	B	13.9	11.1	0.26	0.11
Tannery St & Broadway St/Crumbie St (Stop-Minor)	Overall	C	C	19.8	16.6	0.34	0.33
	EBLTR	A	A	1.0	2.1	0.03	0.03
	WBLTR	A	A	0.9	1.1	0.02	0.02
	NBLTR	C	C	19.8	16.6	0.34	0.33
	SBLTR	C	B	17.2	14.1	0.23	0.25

Note 1: The Level of Service of a signalized intersection is based on the average control delay per vehicle (Synchro/ICU). The Level of Service of a stop-controlled intersection is based on the delay associated with the critical minor road approach (HCM 2000).

Note 2: The critical v/c ratio is considered to be the maximum v/c ratio for movements at the intersection. In addition, all v/c ratios greater than 0.85 for through and shared turning movements, and 1.00 for exclusive turning movements are bolded.

Table 9: 2028 Future Background Queue Lengths

Intersection	Movement	Storage Length (m)	Queue Length			
			50 th (m)		95 th (m)	
			A.M.	P.M.	A.M.	P.M.
Queen St & Thomas St (Signal)	NBL	35	10	15	20	30
Thomas St & Joymar Dr (Stop-Minor)	SBL	10	<5	<5	5	15
Thomas St & McFarren Blvd/Gaffney Drive (Signal)	EBL	30	<5	5	5	10
	EBR	35	<5	<5	<5	5
	WBL	30	<5	5	5	5
	NBL	25	5	5	10	15

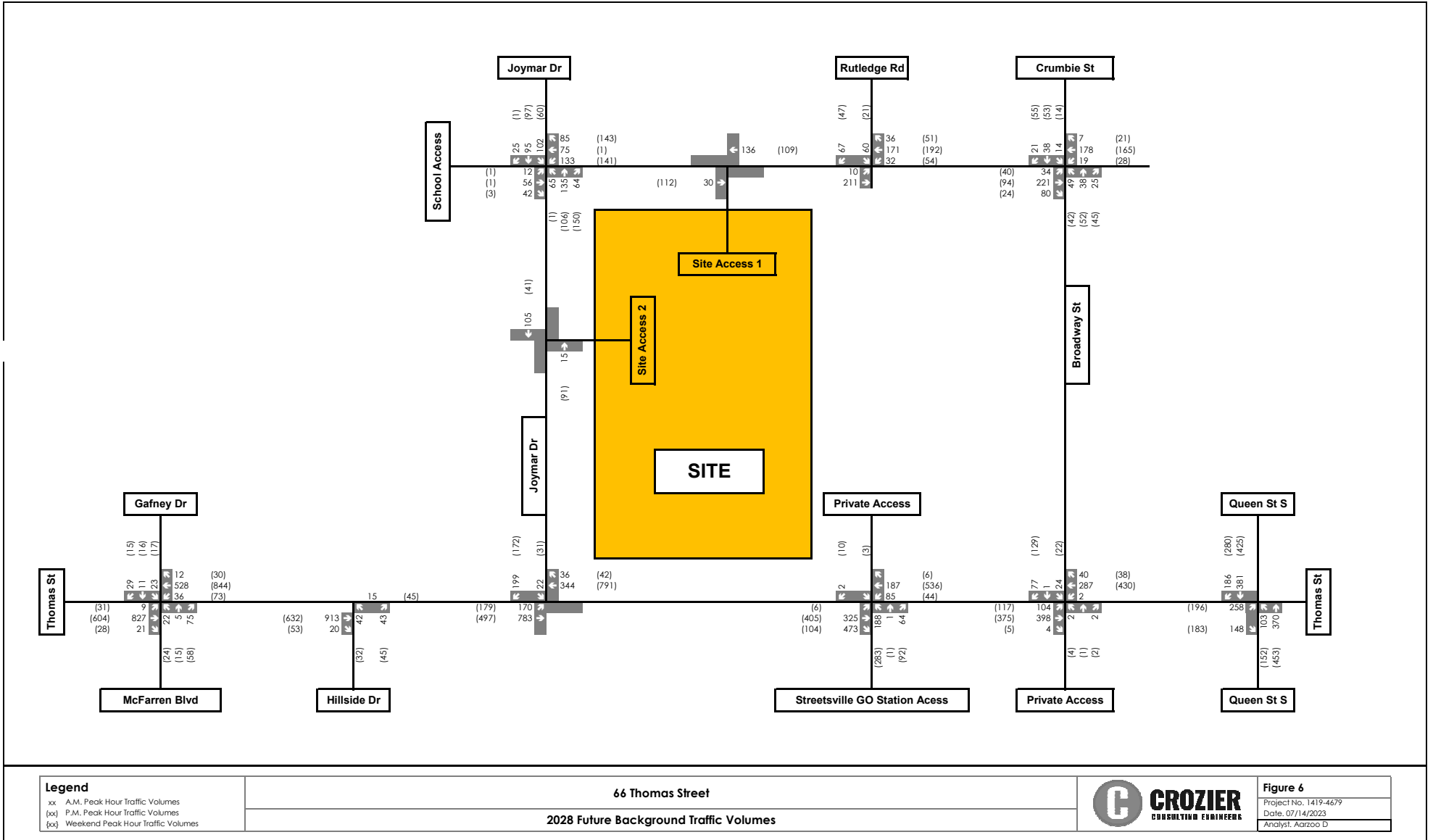
Note: The queue lengths exceeding the available storage are bolded.

As per **Table 8** all the study intersections are expected to operate similar to the 2023 existing conditions under critical capacity and acceptable delays.

The southbound left-turn movement at the intersection of Thomas Street and Joymar Drive is expected to deteriorate from "E" to "F" by an increase in delay of approximately 51 seconds. These delays are primarily attributed to the increasing traffic flow along Thomas Street, as the developments in the surrounding area do not contribute any extra vehicles to the southbound left-turn movements at this intersection, and consequently, they are not responsible for the delays.

As per **Table 9**, the 95th percentile queue length for the northbound left-lane at the intersection of Queen Street and Thomas Street is anticipated to stay within the given storage. The 95th percentile queue length for southbound left-turn lane at the intersection of Thomas Street and Joymar Drive is expected to exceed the available storage by only 5 metres in the weekday P.M. peak hour. However, the 50th percentile queue length is expected to stay within the available storage.

The detailed capacity analysis for the 2028 future background conditions is provided in **Appendix J**.



4.0 Site Generated Traffic

The proposed development will result in additional vehicles on the boundary road network that previously did not exist. The proposed development will also result in additional turning movements on the boundary road intersections.

The proposed development is expected to be fully built by the year 2028.

4.1 ITE Trip Generation

The Institute of Transportation Engineers (ITE) Trip Generation Manual 11th Edition was used to forecast the number of trips generated by the proposed residential development. As the development is proposed as a high-rise and residential, the Land Use Category 222 “Multifamily Housing (High-Rise)” was used to determine approximate number of trips generated by the subject site. It is noted that the ITE trip generation likely overestimates the number of vehicle trips being generated by this development. Given the proximity of the site to Streetsville GO, it could reasonably be assumed that a proportion of trips are not vehicle-based and instead walk or cycle to/from the GO station or walk to/from a nearby MiWay bus stop. The rate currently being used is designated as “not close to rail transit”, this results in a more conservative analysis and is thus maintained.

The project consists of three tall structures: Tower A, an 18-story building; Tower B, a 22-story building; both interconnected by podiums ranging from 7 to 8 stories; and a 12-story South building consisting of a total of 1,043 residential units.

Table 10 below shows the trips generated by the development:

Table 10: Site Generated Trips

Land Use Units/GFA	Peak Hour	Rate	Trips		Total
			In	Out	
Multifamily High-Rise (LUC 222) 1,043 Dwelling Units	AM	Average (0.27)	In	74	283
			Out	209	
	PM	Average (0.32)	In	207	334
			Out	127	
Total					617

The subject site is expected to generate 283 two-way (74 inbound and 209 outbound) trips during the weekday A.M. peak hour and 334 two-way (207 inbound and 127 outbound) trips during weekday P.M. peak hour.

Relevant excerpts from the ITE Trip Generation Manual 11th Edition are included in **Appendix L**.

4.2 Trip Distribution and Assignment

The Transportation Tomorrow Survey (TTS) is a comprehensive travel data survey conducted in the Greater Toronto and Hamilton Area. Data from the 2016 TTS was used to determine the peak hour trip distribution at the site.

The trip distribution calculations based on the TTS data are summarized in **Table 11**.

Appendix M provides the TTS query used to determine the site trip distribution.

Table 11: Site Distribution

Direction	Weekday A.M. Peak Hour		Weekday P.M. Peak Hour	
	In	Out	In	Out
Northwest	0%	4%	3%	40%
North	0%	13%	11%	12%
Northeast	14%	14%	10%	1%
East	26%	23%	31%	20%
Southeast	55%	16%	23%	3%
South	3%	7%	8%	6%
Southwest	3%	22%	12%	18%
West	0%	2%	2%	0%

Figure 7 shows the trip assignment for the proposed development.

5.0 Future Total Traffic Conditions

This section discusses the projected future total traffic conditions and traffic operations at the study intersections with the addition of the site generated trips by the proposed development and the background developments in the vicinity of the subject site for the horizon year 2028.

The 2028 future total traffic conditions were analyzed with the addition of site generated traffic to the future background traffic. The total traffic volumes are illustrated in **Figure 8**.

As per **Table 12** all the study intersections are expected to operate similar to the 2028 future background conditions under critical capacity and acceptable delays except for the intersection of Thomas Street and Joymar Drive.

The southbound left-turn lane at the intersection of Thomas Street and Joymar Drive is projected to operate at Level of Service "F" during the P.M. peak hour. This will result in a delay increase of 145 seconds compared to the anticipated conditions in 2028. Only seven trips are expected to necessitate a left turn at the southbound approach, representing a minimal fraction of the total trips generated by the site. As previously noted, these delays are mainly due to the escalating traffic volume along Thomas Street.

As per **Table 13**, the 95th percentile queue length for northbound left-lane at the intersection of Queen Street and Thomas Street is anticipated to exceed the available storage by 5 metres in the weekday P.M. peak hour. However, the 50th percentile queue length is expected to operate within available storage length. The additional 5 metre queue length can be accommodated within the 55-metre taper length.

Furthermore, the 95th percentile queue length for southbound left-turn lane at the intersection of Thomas Street and Joymar Drive is expected to increase by 5 and 10 metres in the weekday A.M. and P.M. peak hours respectively. However, the 50th percentile queue length is expected to operate within the available storage. The additional 10 metre 95th percentile queue length in the weekday P.M. peak hour can be accommodated within the 25-metre taper length.

The detailed capacity analysis for the 2028 future total conditions is provided in **Appendix N**.

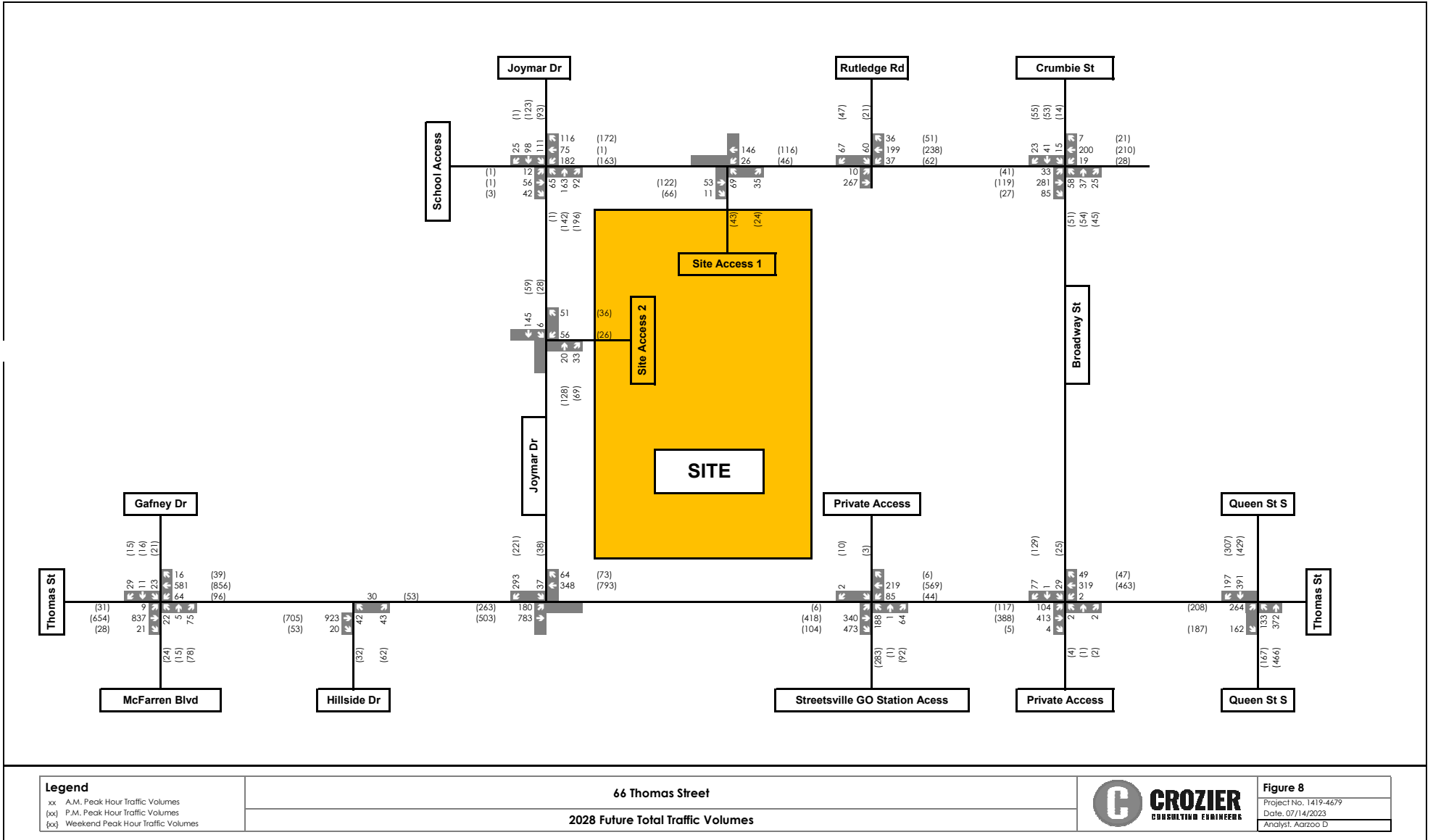


Table 12: 2028 Future Total Intersection Operations

Intersection	Movement	Level of Service		Control Delay		V/C Ratio	
		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
Queen St & Thomas St (Signal)	Overall	B	B	16.5	15.2	0.76	0.76
	EBL	D	D	43.3	48.2	0.76	0.76
	EBR	A	A	4.7	9.2	0.38	0.48
	NBL	B	B	12.1	15.0	0.35	0.51
	NBTR	A	A	9.7	8.3	0.35	0.39
	SBLTR	B	B	12.9	11.9	0.39	0.65
Thomas St & Broadway St (Stop – Minor)	Overall	C	D	18.3	29.6	0.25	0.37
	EBLTR	A	A	3.5	4.3	0.13	0.13
	WBLTR	A	N/A	0.1	0.0	0.13	0.18
	NBLTR	C	D	18.3	29.6	0.01	0.05
	SBTLR	C	C	15.3	17.5	0.25	0.37
Thomas St & Streetsville Go Entrance (Signal)	Overall	B	B	13.7	19.5	0.80	0.74
	EBLT	A	B	7.0	15.8	0.34	0.44
	EBR	A	A	3.4	2.9	0.46	0.13
	WBL	A	A	2.5	8.8	0.13	0.11
	WBTR	A	B	7.2	13.9	0.22	0.58
	NBLT	E	D	61.1	42.7	0.80	0.74
	NBR	C	C	24.2	25.3	0.16	0.20
	SBLTR	A	A	0.0	2.3	0.00	0.03
Thomas St & Joymar Dr (Stop-Minor)	Overall	D	F	34.8	236.4	0.43	0.89
	EBLT	A	B	4.9	10.7	0.33	0.41
	WBTR	-	-	-	0.0	0.15	0.34
	SBL	D	F	34.8	236.4	0.25	0.89
	SBR	B	C	13.4	17.6	0.43	0.46
Thomas Street & Hillside Drive (Stop-Minor)	Overall	D	C	28.9	25.5	0.39	0.41
	EBT	N/A	N/A	0.0	0.0	0.39	0.30
	EBTR	N/A	N/A	0.0	0.0	0.21	0.18
	WBLT	A	A	1.8	2.1	0.04	0.07
	WBT	N/A	N/A	0.0	0.0	0.26	0.41
	NBLTR	D	D	28.9	25.5	0.38	0.37
Thomas Street & McFarren Blvd/Gaffney Dr (Signal)	Overall	A	B	7.8	6.9	0.39	0.44
	EBL	A	A	5.9	6.3	0.02	0.09
	EBT	A	A	7.3	6.8	0.39	0.30
	EBR	A	A	0.0	0.2	0.02	0.03
	WBL	A	A	3.5	2.0	0.13	0.17
	WBTR	A	A	4.5	3.2	0.26	0.36
	NBL	D	D	42.6	48.3	0.15	0.17
	NBTR	B	B	15.3	19.8	0.37	0.44
Tannery St & Joymar Dr (All-Way Stop)	Overall	C	B	20.7	14.3	0.68	0.54
	EBLTR	B	A	11.4	8.9	0.22	0.01
	WBLTR	C	B	20.7	14.3	0.68	0.54
	NBLTR	C	B	17.2	13.2	0.58	0.51
	SBLTR	B	B	14.8	11.8	0.46	0.37
Tannery St & Rutledge Rd (Stop-Minor)	Overall	C	B	15.0	11.6	0.28	0.18
	EBLT	A	A	0.4	2.5	0.01	0.04
	WBTR	-	-	0.0	0.0	0.15	0.18
	SBLR	C	B	15.0	11.6	0.28	0.12

Intersection	Movement	Level of Service		Control Delay		V/C Ratio	
		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
Tannery St & Broadway St/Crumbie St (Stop-Minor)	Overall	C	C	24.0	19.2	0.41	0.39
	EBLTR	A	A	0.9	2.0	0.03	0.03
	WBLTR	A	A	0.9	1.0	0.02	0.02
	NBLTR	C	C	24.0	19.2	0.41	0.39
	SBLTR	C	C	19.0	15.2	0.25	0.27
Site Access via Tannery Street	Overall	B	B	10.4	11.1	0.15	0.12
	EBTR	N/A	N/A	0.0	0.0	0.04	0.12
	WBLT	A	A	1.2	2.4	0.02	0.03
	NBLR	B	B	10.4	11.1	0.15	0.11
Site Access via Thomas Street	Overall	A	B	9.7	10.1	0.13	0.13
	WBLR	A	B	9.7	10.1	0.13	0.09
	NBTR	N/A	N/A	0.0	0.0	0.03	0.13
	SBLT	A	A	0.3	2.6	0.00	0.02

Note 1: The Level of Service of a signalized intersection is based on the average control delay per vehicle (Synchro/ICU). The Level of Service of a stop-controlled intersection is based on the delay associated with the critical minor road approach (HCM 2000).

Note 2: The critical v/c ratio is considered to be the maximum v/c ratio for movements at the intersection. In addition, all v/c ratios greater than 0.85 for through and shared turning movements, and 1.00 for exclusive turning movements are outlined and highlighted.

Table 13: 2028 Future Total Queue Lengths

Intersection	Movement	Storage Length (m)	Queue Length			
			50 th (m)		95 th (m)	
			A.M.	P.M.	A.M.	P.M.
Queen St & Thomas St (Signal)	NBL	35	10	15	30	40
Thomas St & Joymar Dr (Stop-Minor)	SBL	10	<5	<5	10	25
Thomas St & McFarren Blvd/Gaffney Drive (Signal)	EBL	30	5	<5	5	5
	EBR	35	<5	<5	<5	5
	WBL	30	5	<5	10	5
	NBL	25	5	5	10	15

Note: The queue lengths exceeding the available storage are bolded.

5.1 Signal Warrant at Thomas Street and Joymar Drive

Observations indicate that the southbound left-turn approach at the intersection of Thomas Street and Joymar Drive is anticipated to operate at Level of Service 'F' with delays totaling 236.4 seconds and the volume to capacity ratio of 0.89 expected to be well below the threshold of 1.00 in the weekday P.M. peak hour. Consequently, an evaluation was conducted based on the Ontario Traffic Manual Justification 7 to determine if signalization is warranted given the projected volumes.

The assessment revealed that the signal warrants were not met for the projected conditions in 2028, as indicated in **Appendix O**. Justification 1A achieved a maximum rate of 67%, while other Justifications 1B, 2A, and 2B fell significantly short of satisfaction levels, with rates of 58%, 56%, and 20%, respectively. Therefore, a signal is not recommended.

The proposed development is only expected to generate 7 trips making a southbound left turn at the intersection, which is a very small fraction of the total trips and is not anticipated to be the primary cause of delays. However, even though these seven additional trips might cause some increase in delays, it is understood that vehicles intending to make southbound left turns will likely choose alternative routes, such as eastbound left or right turns onto Queen Street via Tannery Street, depending on their intended destination and traffic patterns are expected to adjust over time to avoid long delays associated with the southbound left-turn.

6.0 Site Access Review

The following section provides a review of geometric properties of the proposed site accesses with reference to the Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads (GDGCR), June 2017, as well as any municipal or regional design guidelines. This section specifically analyzes the proposed accesses from a sight distance and access spacing perspective to ensure adequate visibility and sufficient spacing to avoid conflicts have been provided.

6.1 Sight Distance Analysis

The available sightlines at the proposed site accesses at Tannery Street and Joymar Drive were measured and compared to the standards set out in the Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads (GDGCR). Sight distances were measured from the proposed site access using the following assumptions:

A standard driver eye height of 1.08 metres for a passenger car, and;

A 4.4-5.4 metre setback from the approximate extension of the outer curb to represent a vehicle waiting to exit the site.

Intersection sight distance (ISD) is calculated using equation 9.9.1 from the GDGCR as outlined below:

$$ISD = 0.278 * V_{major} * tg$$

Where;

ISD = Intersection Sight Distance

V major = design speed of roadway (km/h)

tg = assumed time gap for vehicles to turn from stop onto roadway (s)

The design speed of a roadway in an urban environment is typically 10 km/h greater than the posted speed limit. As there is an assumed speed limit of 40 km/h on Tannery Street, a design speed of 50 km/h was assumed.

Table 14 below outlines the sight distance analysis for the proposed site accesses.

Table 14: Sight Distance

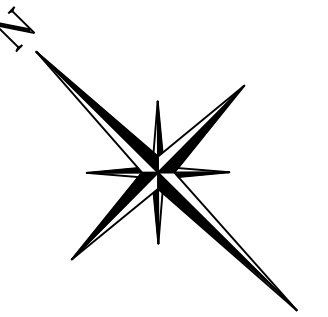
Parameter	Access at Tannery Street	Access at Joymar Drive
Access Type	Full-Moves	
Intersection Control	Stop	
Posted Speed Limit	40 km/h	
Assumed Design Speed	50 km/h	
Base Time Gap	Left Turn: 7.5s Right Turn: 6.5 s (Passenger Cars)	
Additional Time Gap	None	
Horizontal Alignment of Roadway	Straight	Straight
Intersection Sight Distance Required (TAC GDGCR Eqn. 9.9.1)	Left Turn (to the right): 105 m Right Turn (to the left): 95 m	
Sight Distance at accesses	Left-Turn (to the right) > 105 m Right Turn (to the left) < 95 m	Left-Turn (to the right) > 105 m Right Turn (to the left) > 95 m
Minimum Sight Distance Satisfied	Yes	Yes

The Tannery Street terminates at Joymar Drive approximately 35 metres east of the proposed sight access. The vehicles making a right-turn at the site access via Tannery Street will have visibility to the end of Tannery Street and to the intersection of Joymar Drive and Tannery Street. Therefore, the sight distance is found to be satisfied.

The opposing driveway on Joymar Drive is spaced approximately 135m from the Subject Development's proposed site access via Joymar Drive, providing sufficient sight lines and spacing to avoid potential overlapping turn conflicts from the opposing accesses.

Furthermore, the vehicles turning on Joymar Drive from site access have sufficient sight distance. Therefore, the minimum required sight distance is satisfied for left-turns and right-turns.

Figure 9 shows the sight distance at accesses via Tannery Street and Joymar Drive.



LEGEND

	SIGHT DISTANCE LEFT TURN
	SIGHT DISTANCE RIGHT TURN

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Drawing: SIGHT DISTANCE

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				Drawing	FIG 9



6.2 Access Location

The section discusses the corner clearance for accesses along Tannery Street and Joymar Drive. The required and provided corner clearances per Figure 8.8.2 in the TAC GDGCR are also summarized below.

Table 15: Corner Clearance Requirements

Site Access	Parameter	Available Corner Clearance	TAC Figure 8.8.2 Corner Clearance
Along Tannery Street	Distance to Joymar Drive	37 m	25 m
	Distance to Broadway Street	215 m	20 m
Along Joymar Drive	Distance to Tannery Street	195 m	20 m
	Distance to Thomas Street	97 m	25 m

The clearance requirement as per TAC GDGCR Figure 8.8.2 and the proposed site accesses on Tannery Street and Joymar Drive can be supported from a spacing perspective.

Further, due to the presence of rail crossing on Tannery Street east of the proposed site access, section 11.1 of Transport Canada's Rail Transportation Standards was reviewed, and it states that a railway with a design speed above 25km/hr must be at least 30 m away from the nearest intersecting road on entranceway.

It is noted that the distance between the site access on Tannery Street and the existing railway crossing is approximately 185 metres and therefore the access location can be supported.

6.3 Throat Length

As per Table 8.9.3 of TAC GDGCR, a clear throat length of 25 metres is required for access along collector roads. The site accesses on Tannery Street and Joymar Drive satisfy the minimum requirement of 25 metres.

6.4 Access Alignment

The access spacing for driveways on the opposite side of the roadway was reviewed per TAC GDGCR section 8.9.9. It can be noted that the Joymar Drive is a minor collector roadway, and based on the requirements, spatial relationship between driveways on opposite sides of the roadway is not a significant design consideration for local roadways and most collector roadways. The opposing driveway on Joymar Drive is spaced approximately 135m from the Subject Development's proposed site access via Joymar Drive, providing sufficient sight lines and spacing to avoid potential overlapping turn conflicts from the opposing accesses as indicated in **Section 6.1**.

Furthermore, due to the site constraints, aligning the site access with that of 80 Thomas Street is not feasible. However, based on the requirements and observations above, the access satisfies the sight distance, corner clearance, and throat length requirements. Therefore, the proposed location is considered acceptable.

7.0 Maneuvering Assessment

A maneuvering assessment was conducted to ensure the proposed site design provides adequate space for the design vehicles expected at the site. As shown, a standard Peel Region waste collection vehicle, a delivery truck (MSU), a pumper fire truck and a passenger vehicle (PTAC) can enter and exit the proposed site access and loading space without conflict.

7.1 Waste Vehicles

A maneuvering assessment was conducted using a Peel Region Front Loading Garbage Truck 9.5 metre long and a centerline radius of 13.0 metre. The garbage truck can enter and exit the site via Thomas Street and Joymar Drive without any encroachment.

Further, the truck can enter and exit the loading space without any conflicts. The truck will perform a five-point maneuver while entering and exiting the Tower B loading space.

Figure 10 and **Figure 11** show the inbound and outbound waste vehicle maneuvers.

7.2 Loading Vehicle

A maneuvering assessment was conducted using Medium Single Unit (MSU) vehicle 10.0 metres wide. The loading vehicle is expected to enter and exit the site via Tannery Street and Joymar Drive without any conflicts.

The loading vehicle can also enter and exit the loading area by making a three-point turn without any conflicts.

Figure 12 and **Figure 13** show the inbound and outbound movements of a MSU loading vehicle.

7.3 Emergency Vehicle

A maneuvering assessment was conducted using a Pumper Fire Truck 12.19 metres wide. The fire truck is expected to enter the site via Tannery Street and Joymar Drive. It is noted that the fire truck service the principal building entrance withing 15 metres. No conflicting movement is observed when the vehicle can enter and exit the site.

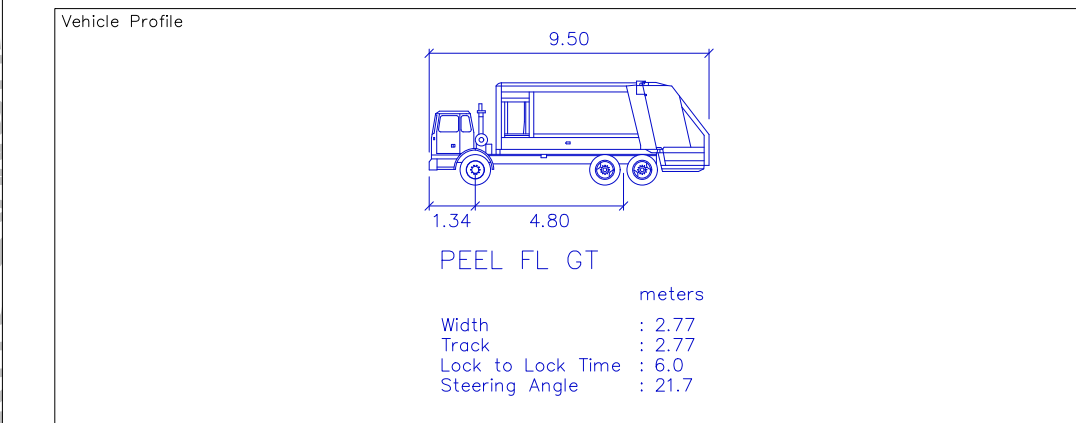
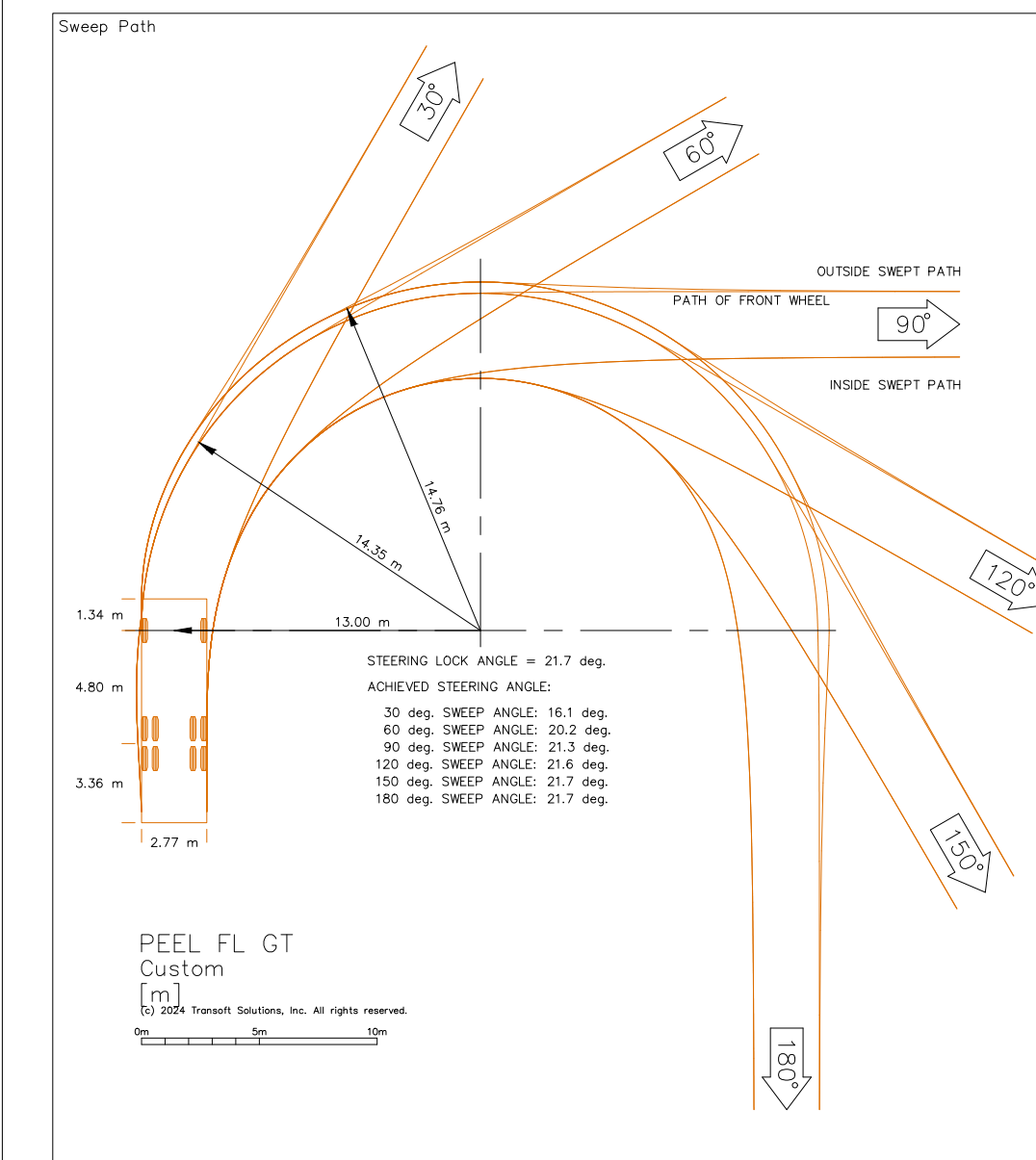
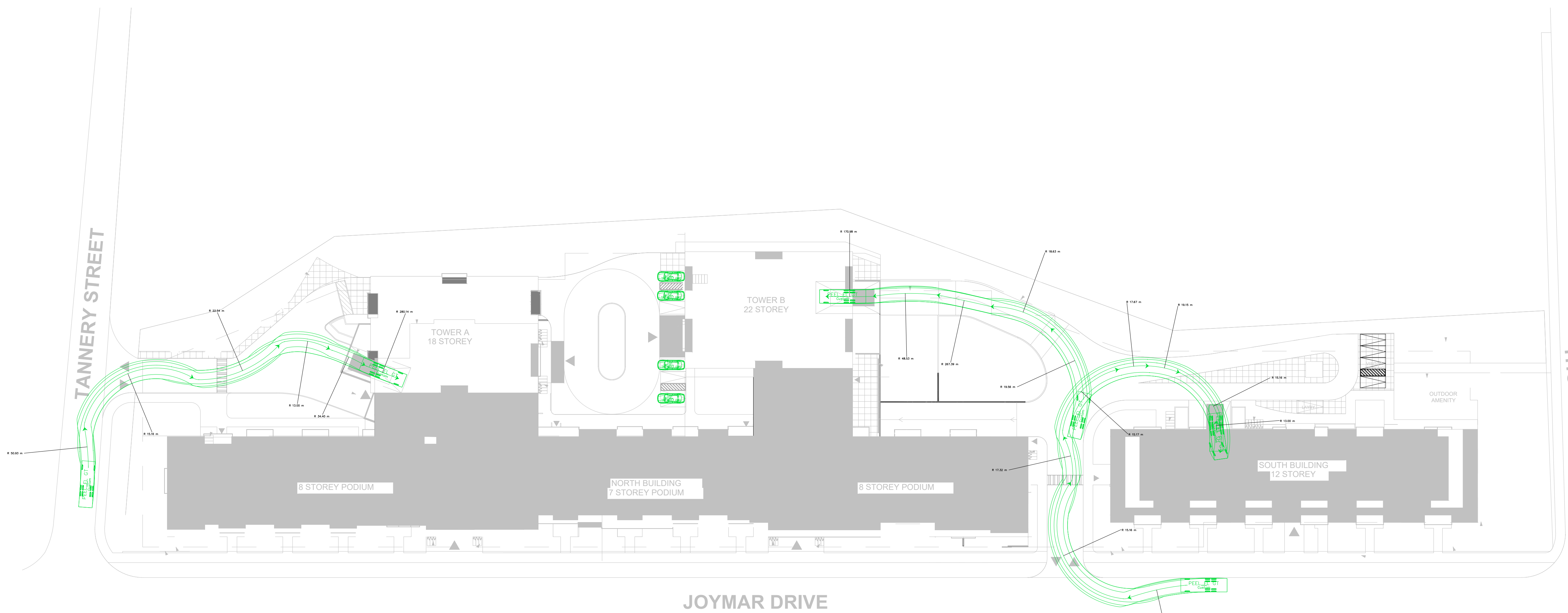
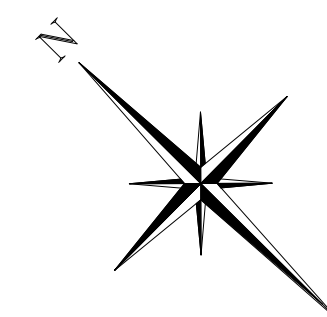
Figure 14 shows the emergency vehicle maneuver.

7.4 Passenger Vehicle

A maneuvering assessment was conducted using the PTAC vehicle. The passenger vehicle can enter and exit the site via Tannery Street and Joymar Drive without any conflicts.

The vehicle can also smoothly enter and exit the underground parking ramp and circulate around the site including lay-by space without any issues.

Figure 15 shows the passenger vehicle maneuver.



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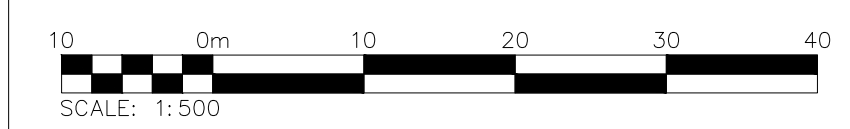
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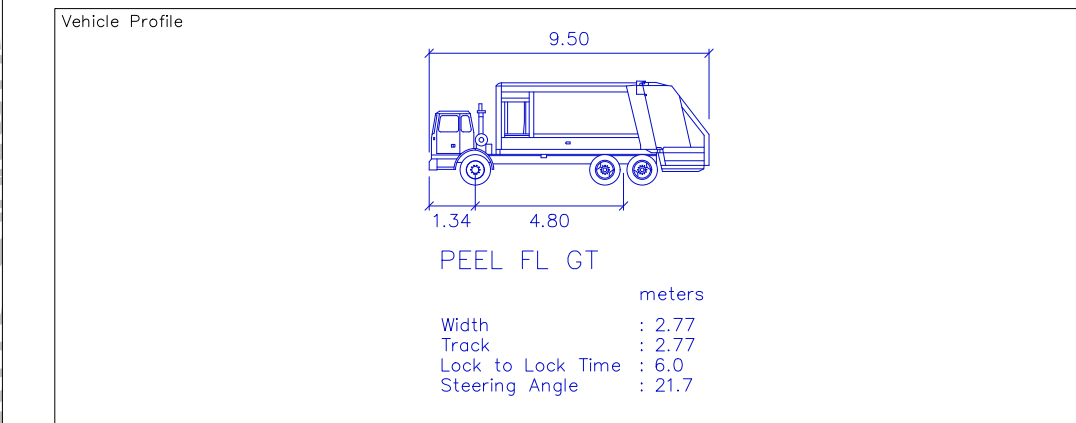
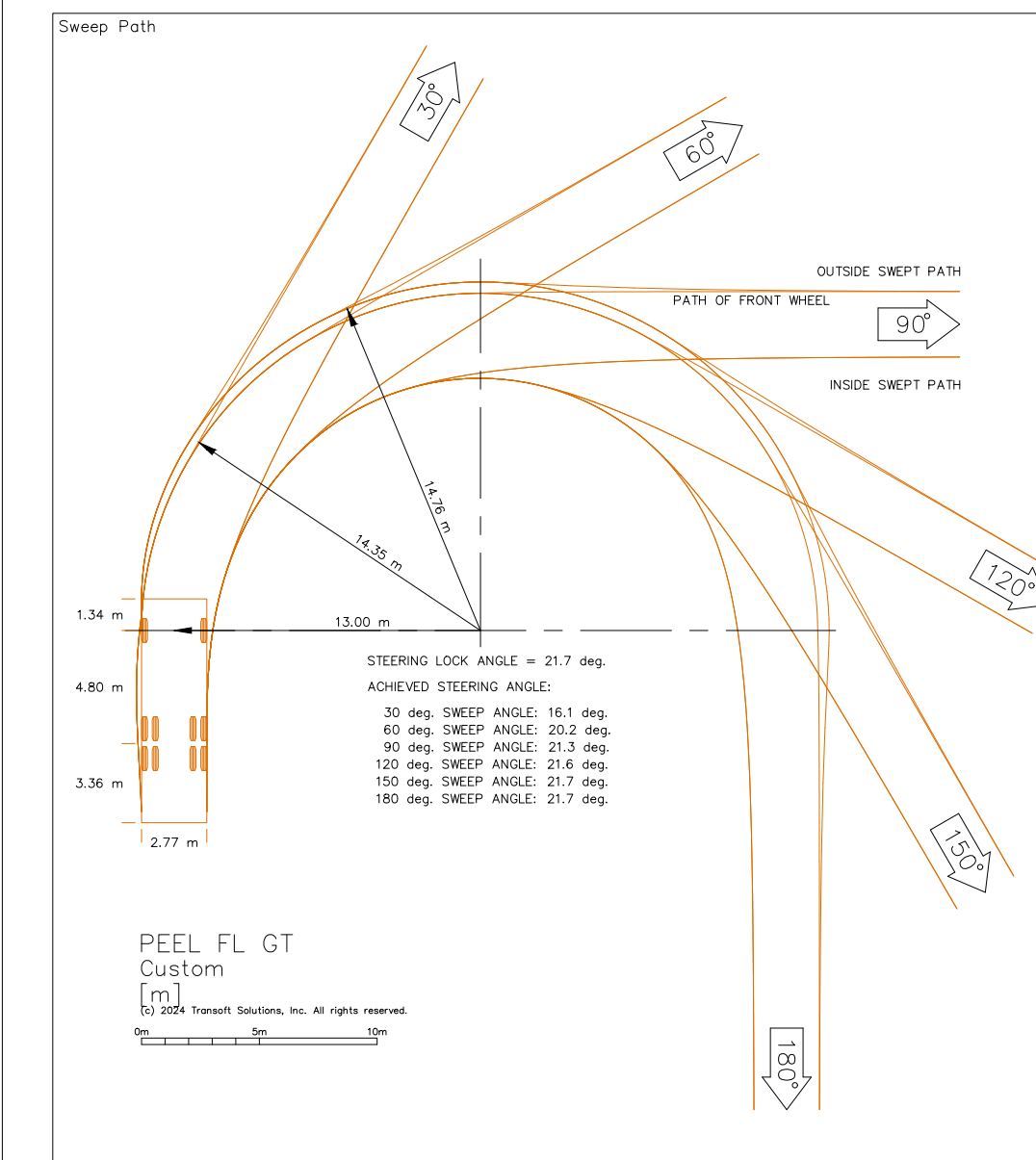
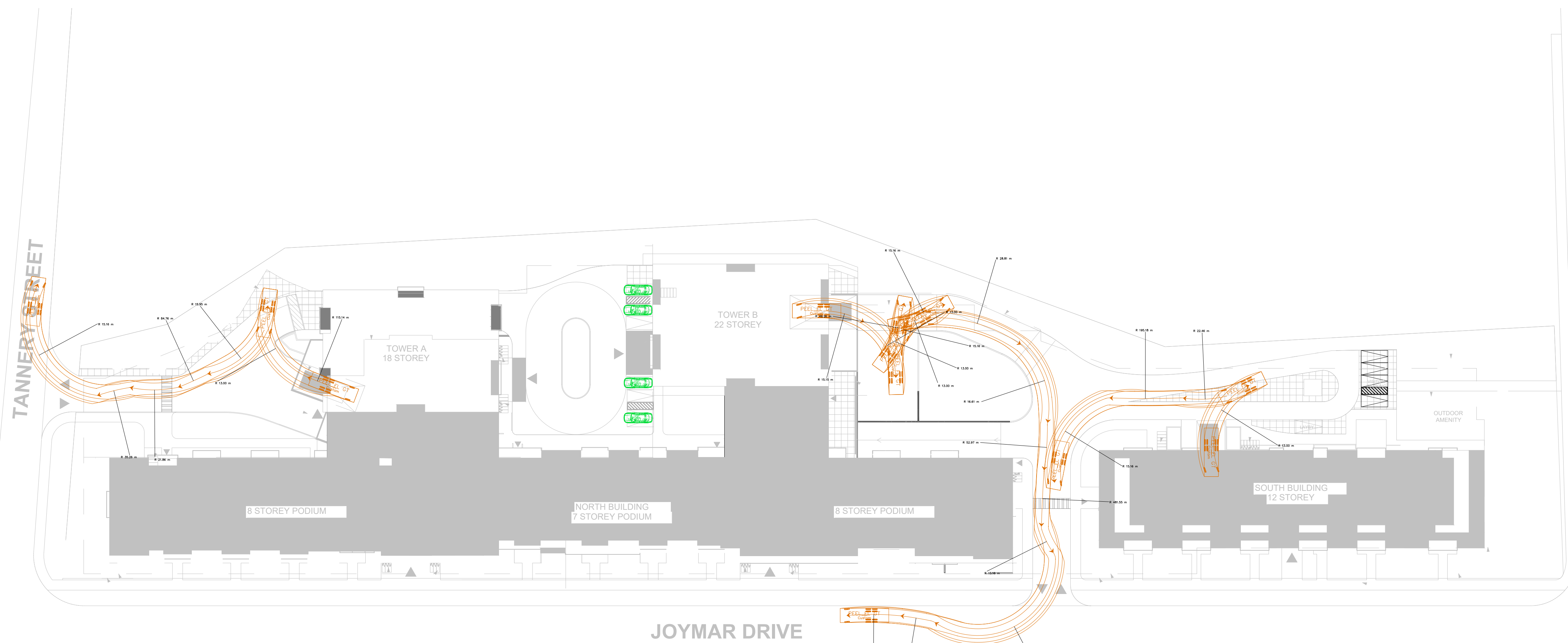
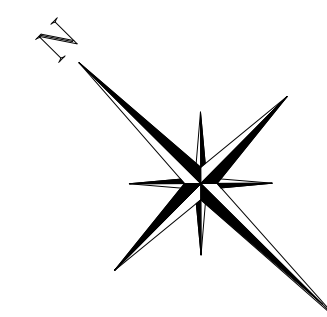
Drawing: VEHICLE MANEUVERING DIAGRAM
FRONT LOADING GARBAGE TRUCK
INBOUND MOVEMENT

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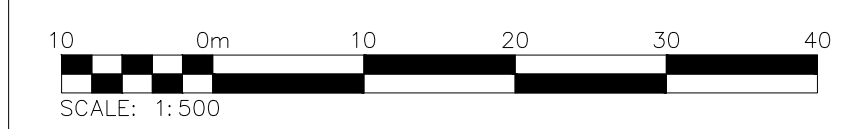
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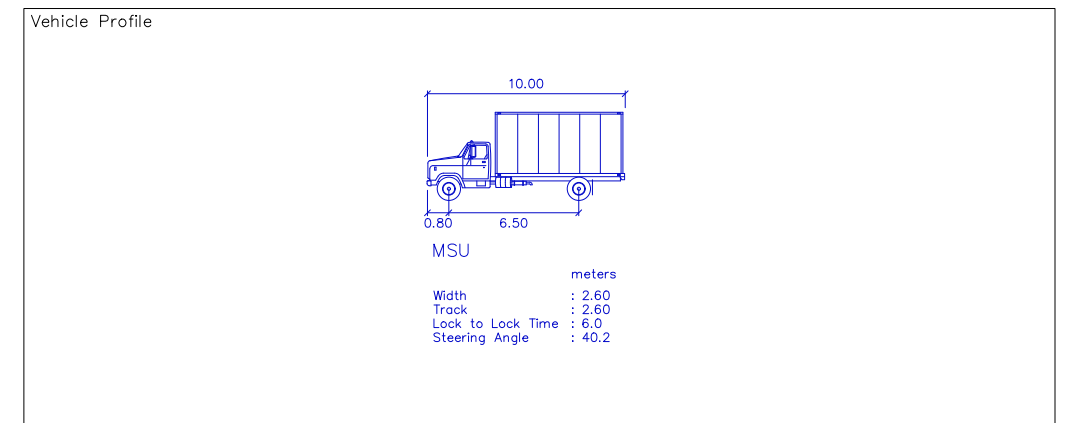
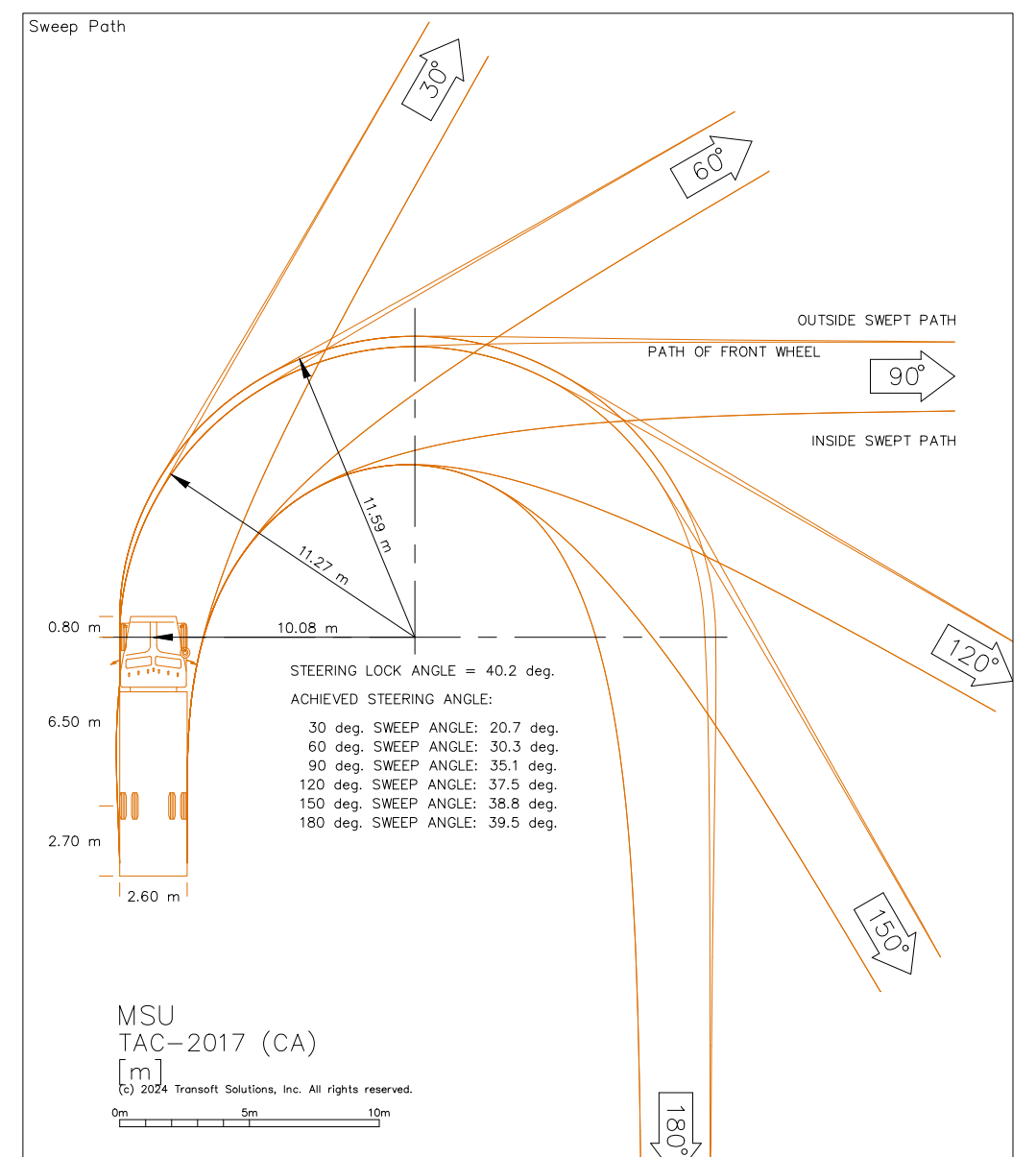
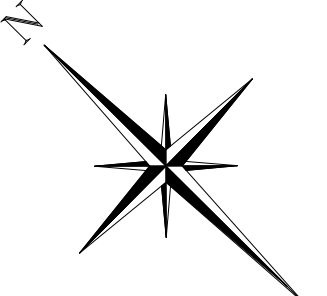
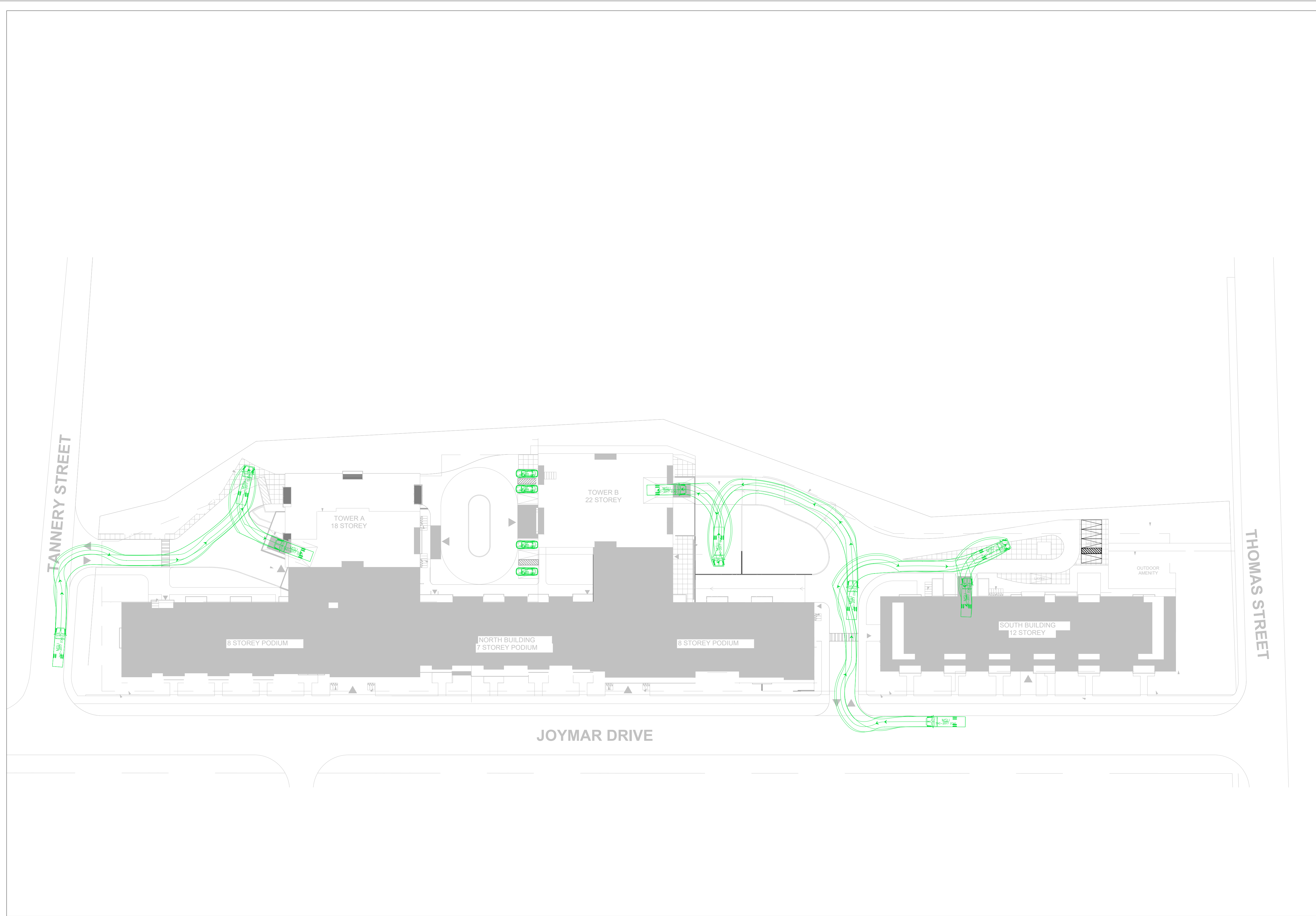
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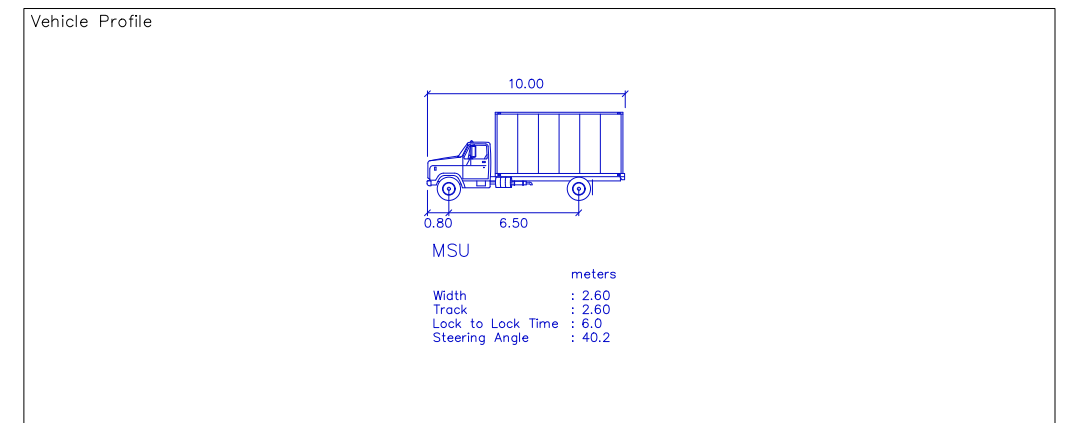
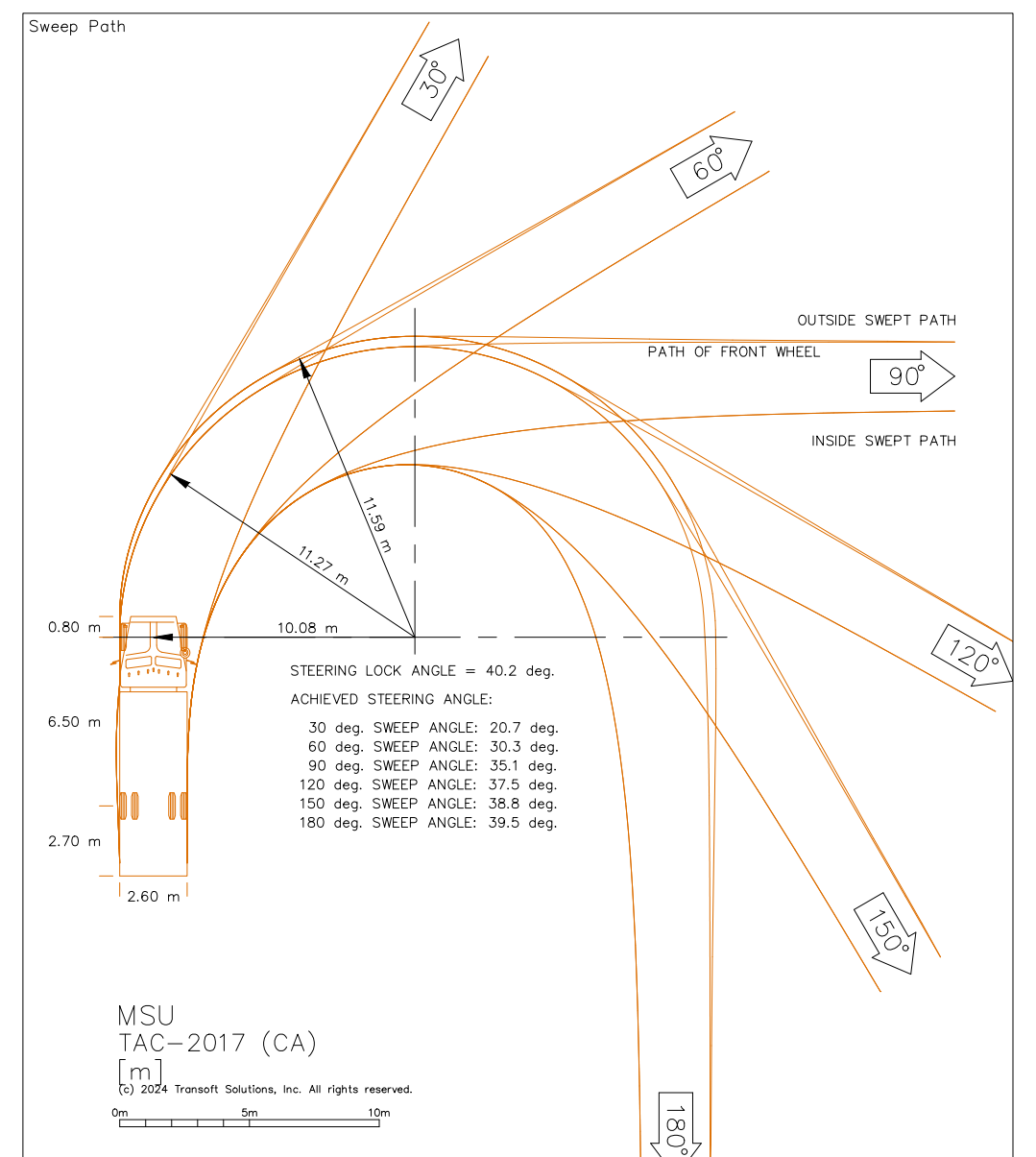
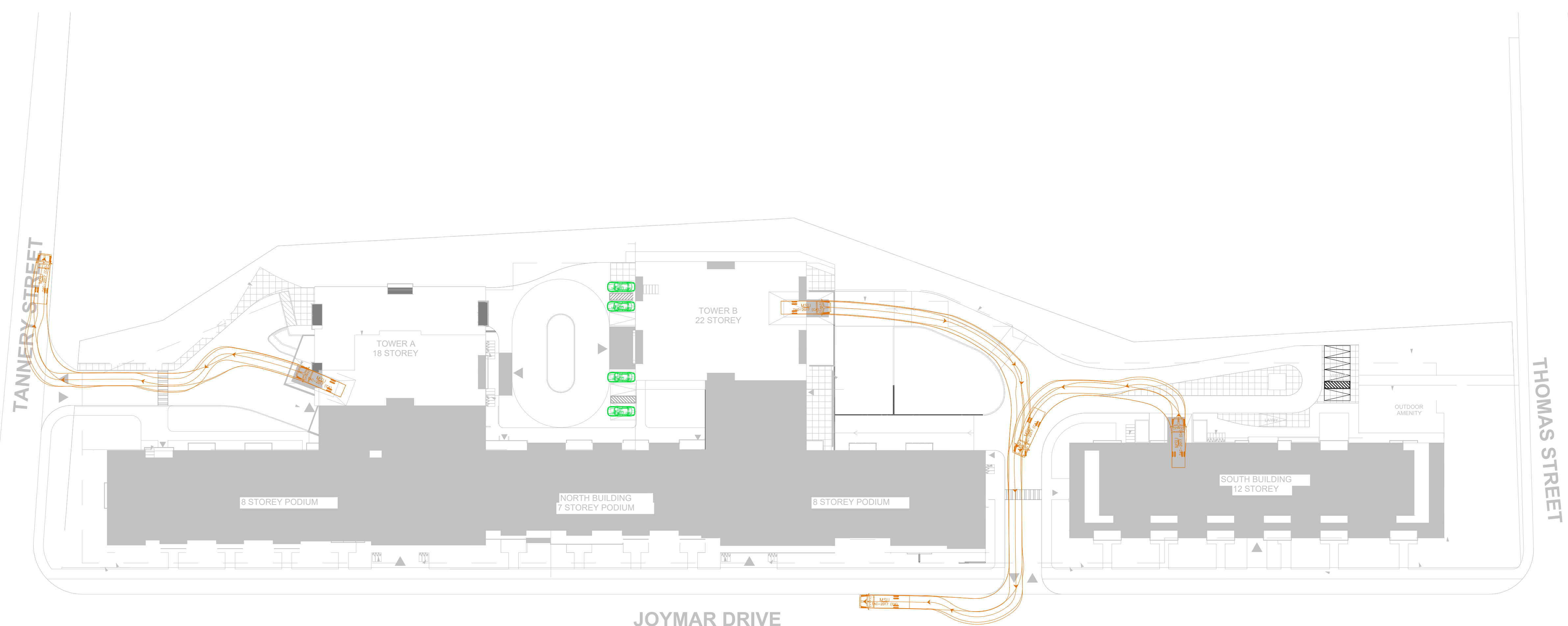
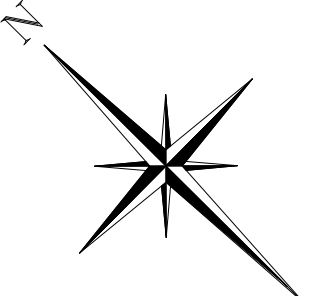
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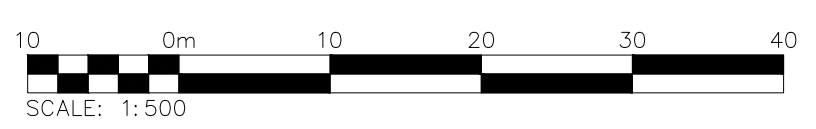
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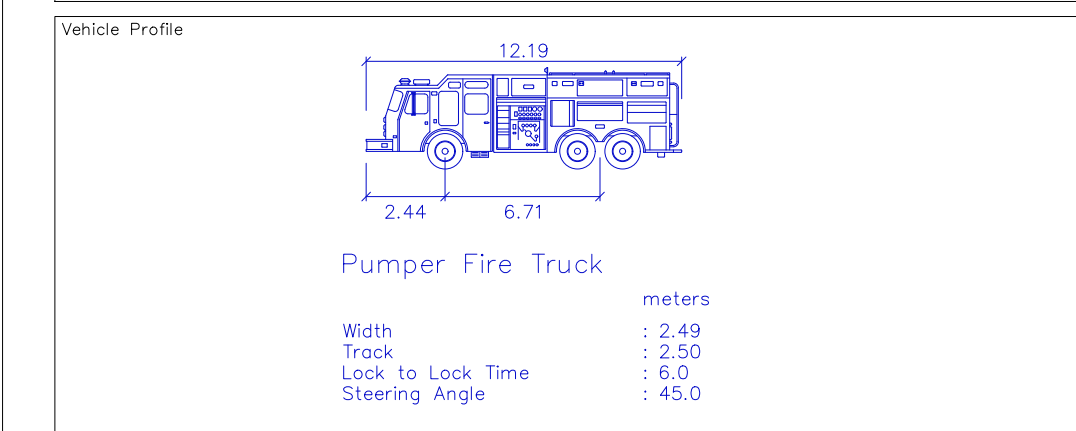
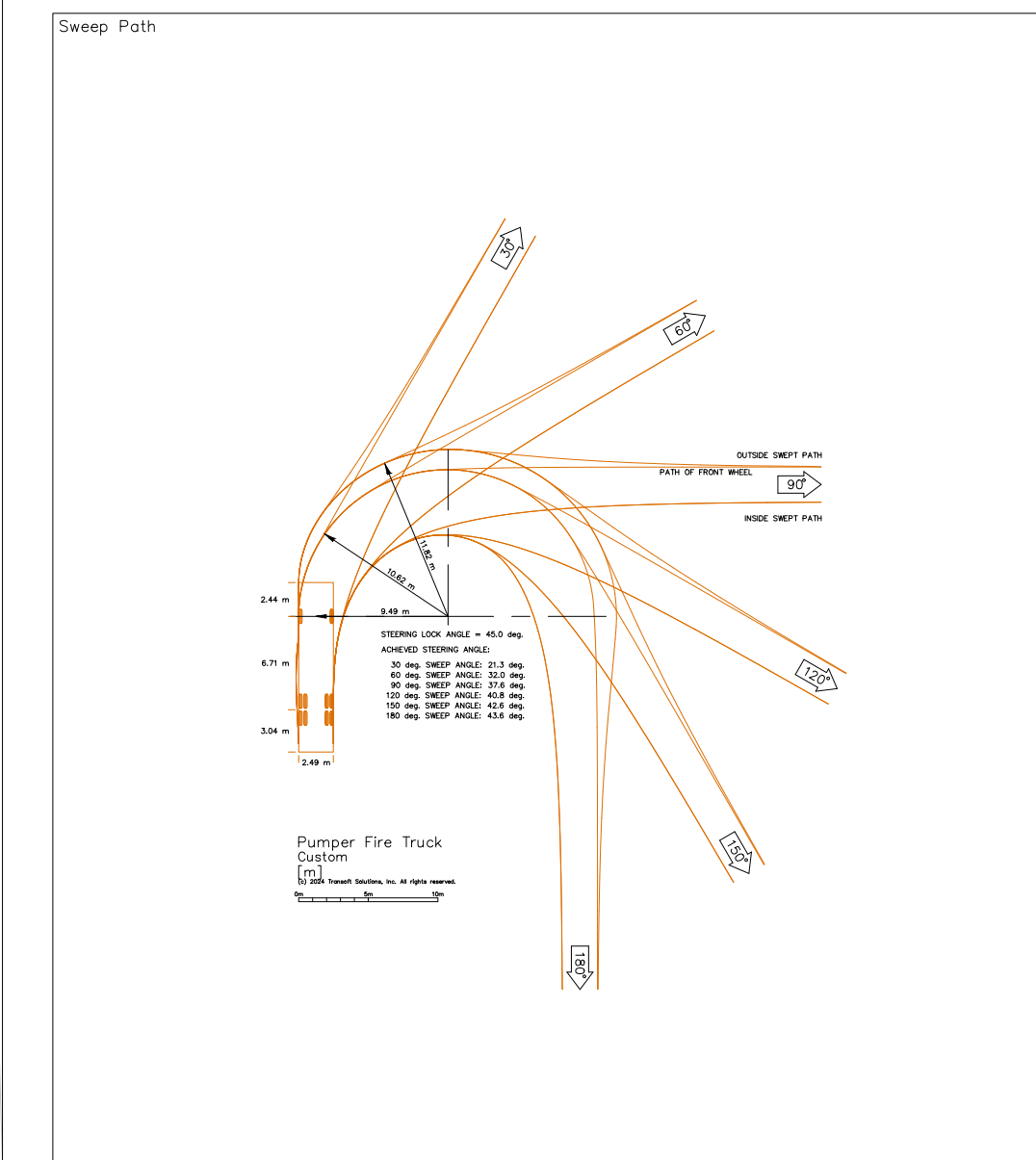
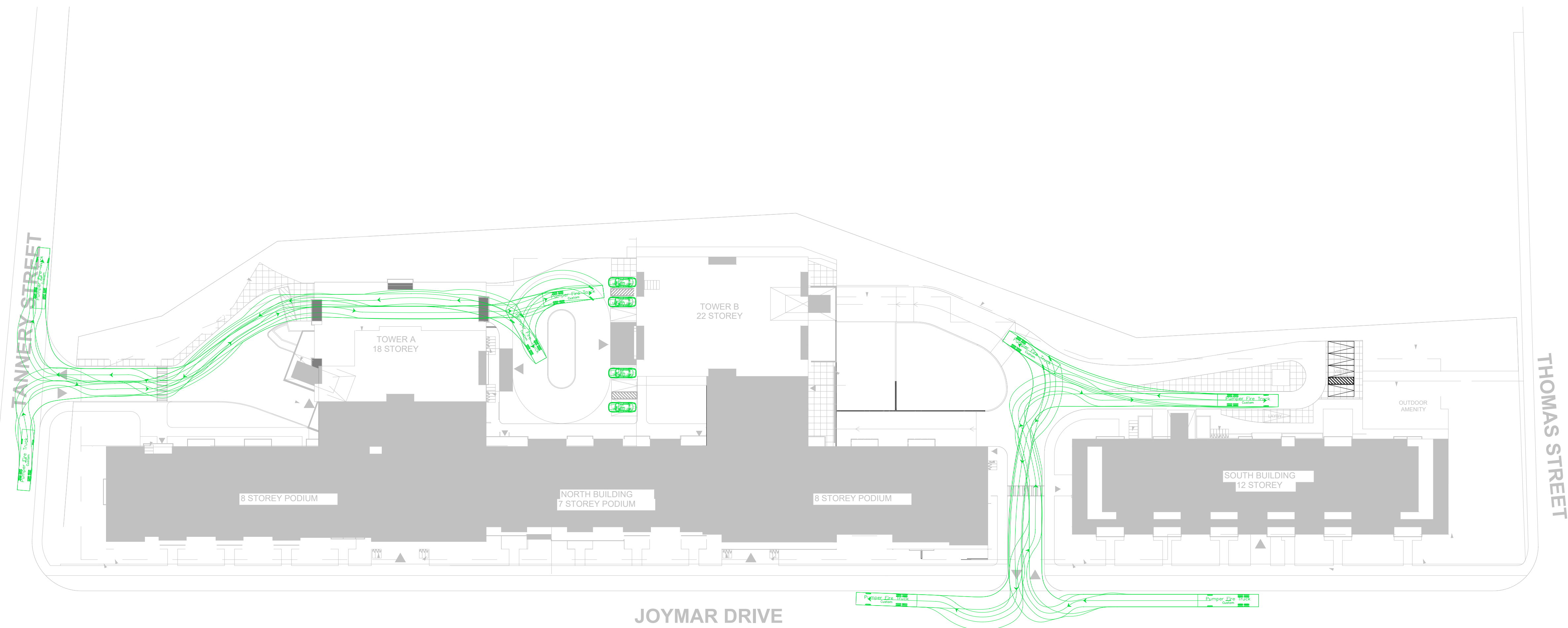
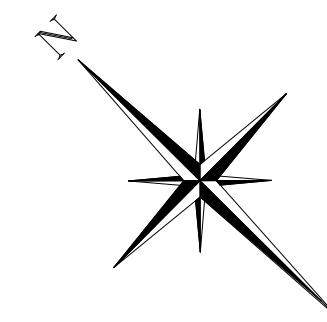
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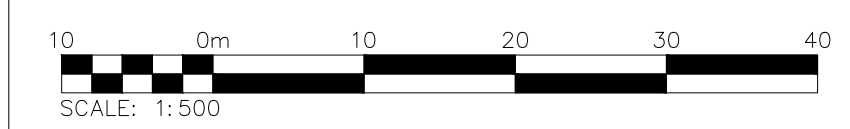
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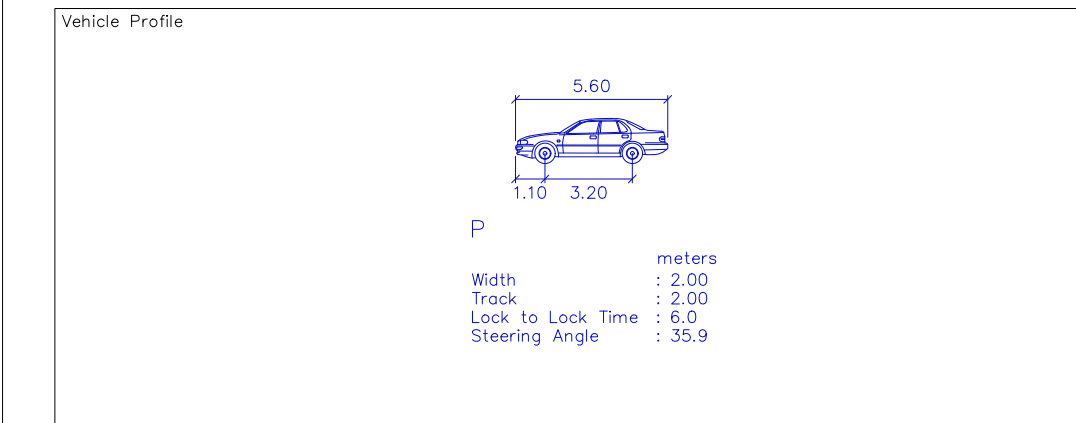
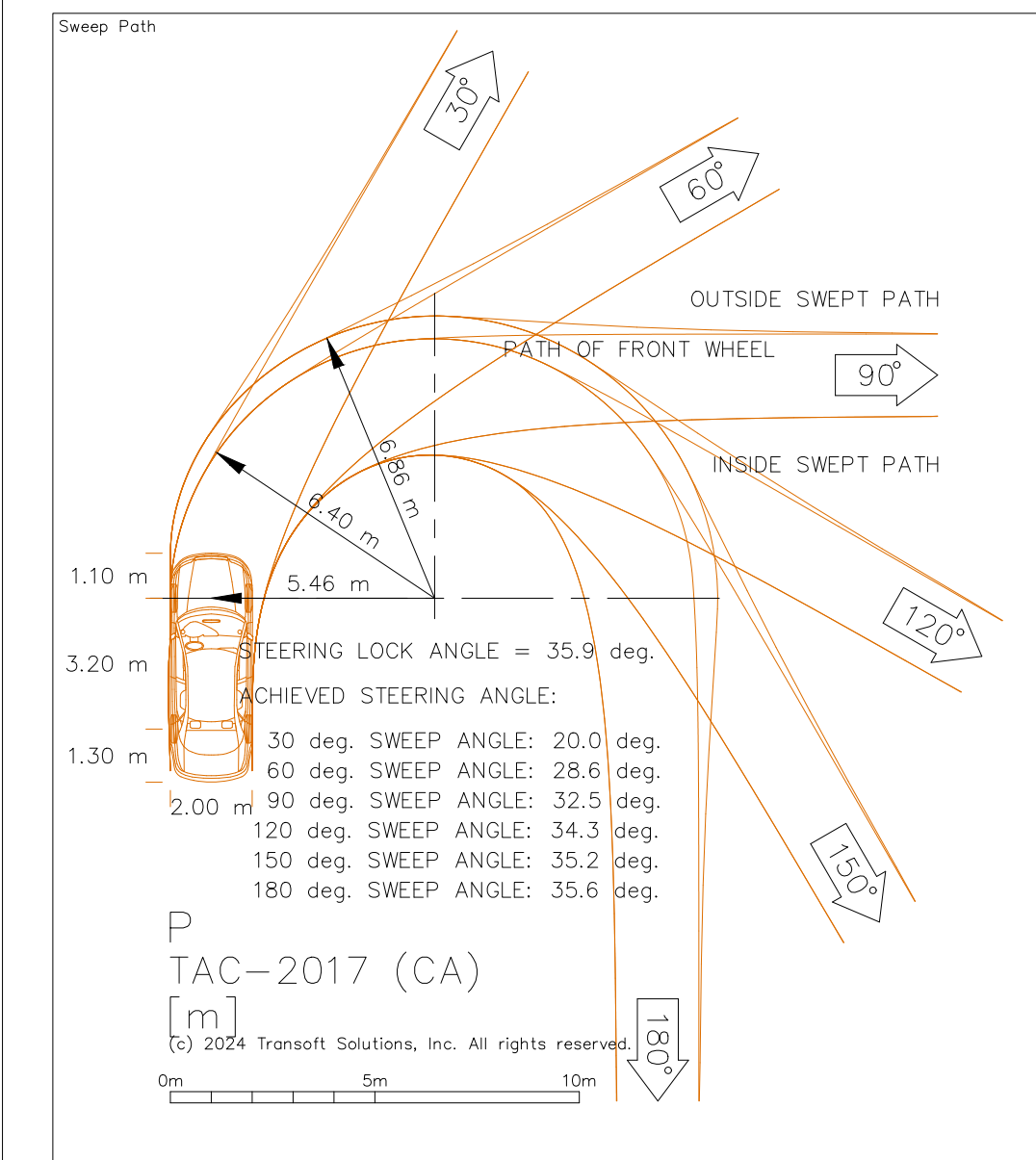
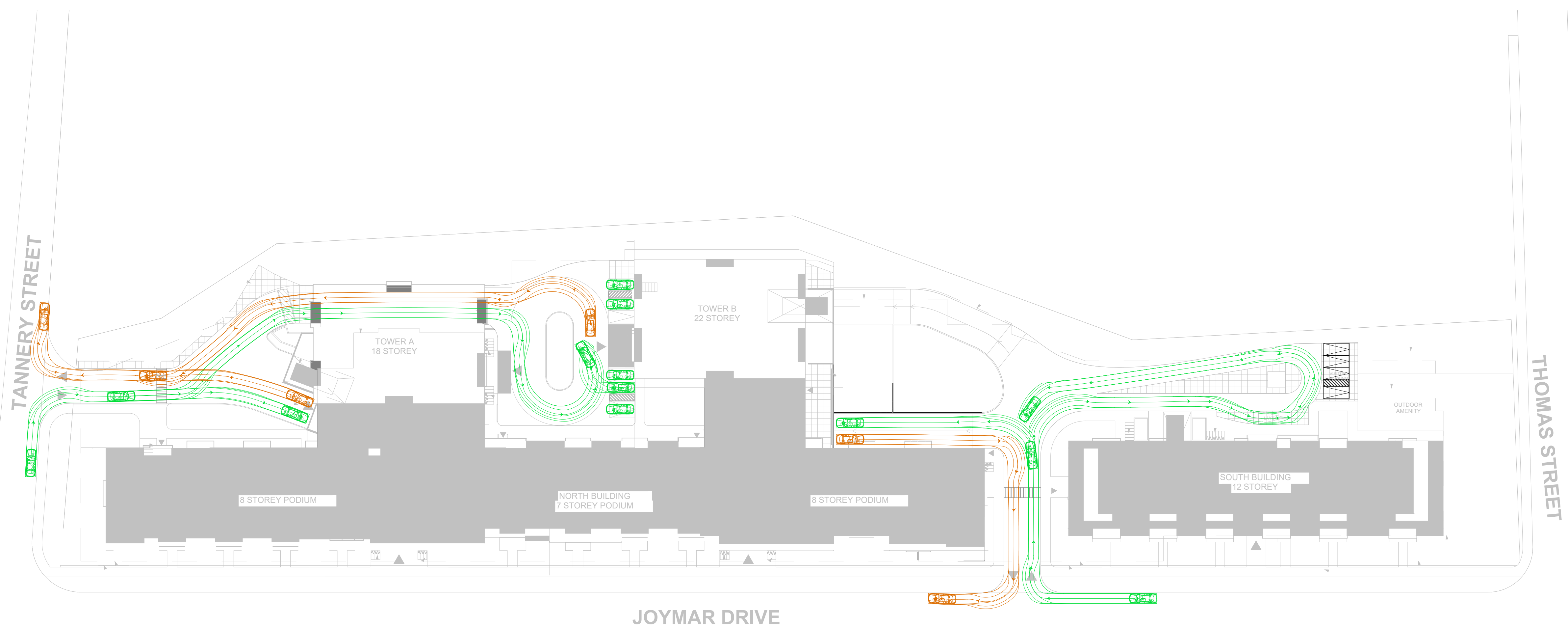
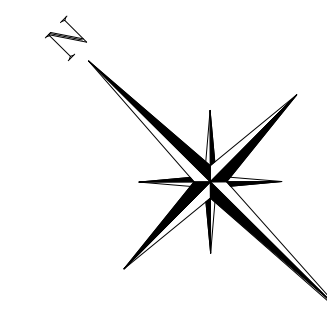
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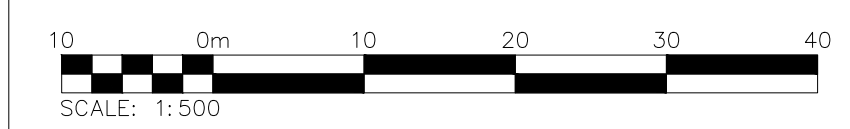
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VEHICLE MANEUVERING DIAGRAM
PASSENGER VEHICLE

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8.0 Parking Review

The section provides an assessment of appropriateness of the proposed vehicle and bicycle parking supply for the development, based on the applicable Zoning By-Law 0225-2007 requirements and comparable developments. Additionally further justification for the proposed parking supply reduction from the By-Law requirements will be provided based on the review of:

- Proxy site residential and visitor parking supply data;
- Approved parking rates;
- Proximity to transit and local amenities; and
- The Transportation Demand Management (TDM) strategies being considered.

It is noteworthy that the subject site is classified under Precinct 2, and therefore, the parking rates specified for Precinct 2 were taken into account for the assessment.

The relevant City of Mississauga Zoning By-Law excerpts are provided in **Appendix P**.

8.1 Auto Parking Requirements

The vehicle and bicycle parking supply were assessed for the overall site based on Section 3.0 of the City's Zoning By-Law 0225-2007. A summary of the proposed parking and required parking at the development can be found in **Table 16**.

Table 16: Zoning By-Law Parking Review for Vehicles

Units/GFA	Zoning By-Law 0225-2007 Parking Rates (Precinct 2)	Required Parking Spaces	Proposed Parking Spaces	Surplus/Deficit
Dwelling Units (1,043)	Residents (0.9 spaces/unit)	939	835 (0.80 spaces/unit)	-104 (~11% reduction)
	Visitors (0.2 spaces/unit)	209	131 (0.12 spaces/unit)	-78 (~37.3% reduction)
Total		1,148	966	-182

As per **Table 16**, the proposed parking supply of 966 spaces does not meet the minimum Zoning By-Law requirement, representing a deficiency of 104 resident parking spaces and 78 visitor parking spaces. Furthermore, the proposed supply presents the rate of 0.80 spaces/unit for residents and 0.12 spaces/unit for visitors.

It can be noted that the subject site is deficient by 11% and 37.3% in the resident and visitor parking supply. The resident supply is slightly above the City threshold of 10% reduction and the visitor parking supply is provided based on the precedent set by other approved developments in the vicinity.

Further, the subject site is located across the Streetsville Go Station, within a 10 min walk from the Station. The location in the Streetsville area provides access to amenities and supports walkable area and the surrounding area is walkable with sidewalks present on at least one side of the roadway. The Mi-way transit stops on Queen Street and Thomas Street are within a short walk from the development.

Therefore, the proposed parking supply is anticipated to be sufficient and meet the parking demand of the future residents at the proposed site as well.

A total of 10% parking is expected to be dedicated as Electric Vehicle parking for visitors and 20% is expected to be dedicated for resident Electric Vehicle Parking per the City's Zoning-By Law requirements.

8.2 Bicycle Parking Requirements

A summary of the proposed and required parking supply for proposed mixed-use development can be found in **Table 17**.

Table 17: Zoning By-Law Parking Review for Bicycles

Units/GFA	Zoning By-Law 0225-2007 Parking Rates (Precinct 2)	Required Parking Spaces	Proposed Parking Spaces	Surplus/Deficit
Dwelling Units (1,043)	Long-Term (0.6 spaces/unit)	624	626	+2
	Short Term (0.05 spaces/unit or 6 spaces whichever is greater)	52	55	+3
Total		676	681	+5

It can be noted that a total of 624 long-term and 52 short-term bicycle parking spaces are required per the City's Zoning By-Law and that the bicycle parking supply is expected to meet the By-law requirements and will have a surplus of 5 spaces.

8.3 Resident Parking Justification

The proposed supply of 835 residential parking spaces is deficient of 104 parking spaces compared to the By-Law requirement, and subsequently the justification herein has been prepared to support a rate of 0.80 residential spaces per unit within the proposed development.

8.3.1 ITE Parking Demand for Residential Purpose

The latest Institute of Transportation Engineers (ITE) Parking Generation Manual 6th Edition was used to determine the parking demand at the subject site. The Land Use Code 222 "Multifamily Housing – 2 + BR (High-Rise)" for sites located in 0.5 mile of rail transit was used to estimate the site's peak parking generation, as tabulated in Table 18.

The Multifamily Housing – 1BR (High-Rise) was not used to determine the demand due to the lack of studies available.

Table 18: ITE Parking Demand

Land Use Code	Location	Number of Units/ GFA	Parking Requirements	Parking Required	Parking Provided
Multifamily housing (High-Rise) (LUC 222)	Close to rail transit	1,043 Dwelling Units	0.75 spaces per unit	782 spaces	966 Spaces (+184)

Given that the site is located within 650 metres of the Streetsville GO Station, the ITE parking demand was forecasted for sites close to rail transit. The provided parking supply meets the required parking supply and would be expected to be in a surplus by 184 spaces based on this rate.

Therefore, it is expected to accommodate the parking demand when considering the ITE parking demand rates for high-rise buildings.

The ITE excerpt is provided in **Appendix Q**.

8.3.2 Future Major Transit Station Area

According to the Peel 2041 Regional Official Plan Review, the Streetsville GO station is currently classified as a Planned Station. A planned station has the potential to evolve into a Major Transit Station Area (MTSA) when changes in land use unlock its development potential. Table 1 of the Peel 2041 Regional Official Plan Review indicates that the Streetsville GO station has the capacity to meet density targets through intensification or land assembly.

Given the ongoing development in the Streetsville area, it is anticipated that the station will satisfy density requirements and be designated as an MTSA in the near future. As a result, the proposed parking rates reflect this future area as a growing, transit-oriented community with everyday amenities located within a 15-minute walk of the proposed development.

8.3.3 Previous Zoning By-law Exceptions within Mississauga

It is noted that a number of recent City of Mississauga Zoning By-Law exceptions have been approved at or below the proposed resident parking rate and were reviewed as part of this justification with their proximity to GO Stations and transit stops noted as shown in **Table 19**.

Table 19: City of Mississauga Zoning By-Law Exceptions

Development	Approved Residential Parking Rate	Walking Distance to Transit (minutes)
64 & 66 Thomas Street and Joymar Drive (Subject Development)	0.80 per dwelling (proposed)	Mi-Way: ~5 GO Train: ~10
28 Ann Street	0.65 per dwelling unit	GO Train: <5
3015 and 3023 ParkerHill Road	0.64 per dwelling unit	LRT: ~10 GO Train: ~15
2590 Rugby Road	0.67 per dwelling unit	LRT: ~5 GO Train: ~15
151 City Centre	0.72 per dwelling unit	LRT: ~5 GO Train: ~30
5081 Hurontario Street	0.80 per dwelling unit	LRT: ~5 GO Train: ~45

It can be observed that the developments within a 10-minute walk to GO Station have been authorized to provide a variety of parking options, ranging from 0.64 to 0.67 spaces per dwelling unit. The subject site is located diagonally across from the Streetsville GO station and falls within a 10-minute walking radius of Streetsville GO Station. Transit users can also take advantage of MiWay services on Thomas Street and Queen Street, both of which are within a 5 to 10-minute walk, linking to other significant areas within the city.

Additionally, as part of the future cycling network per the City’s Transportation Master Plan, separate bicycle lanes are proposed along Thomas Street and Queen Street, which is expected to enhance bicycle and pedestrian connectivity to Streetsville GO station and other local amenities within the area.

Relevant excerpt parking development excerpts can be found in **Appendix K**.

8.3.4 Observed Parking Demand at 4011 Brickstone Mews and 510 Curran Place

It is noted that an overnight parking survey was conducted by BA Group at 4011 Brickstone Mews and 510 Curran Place in February of 2020. The site is approximately 2.9 km from Cooksville GO Station and 1.6 km from Hurontario LRT stop and consists of approximately 1,000 units with ground floor retail uses.

The peak residential parking demand observed at this site was 0.78 spaces/unit and the subject site has a similar mixed-use context, as well as transportation context with access to major highways and higher-order transit.

Based on the observed rate of 0.78 spaces/unit, the proposed parking supply of 835 spaces at the subject site would be in surplus of 21 spaces.

8.3.5 Precinct 1 Rates per the City of Mississauga Zoning By-Law

It is also noted that the precinct 1 rates are currently proposed as 0.80 spaces/unit in the City Zoning By-Law. The subject site is less than 10-minute walk to the Streetsville Go station (expected to be a MTSA in near future) and while it is not located near the Hurontario LRT, existing Mi-Way transit services are present to support local travel within the City.

Table 20: Precinct 1 Rates

Proposed Use	Number of Units	Parking Requirements	Parking Required	Parking Provided
Residential	1,043 Dwelling Units	0.80 spaces/unit	835 spaces	835 Spaces

The subject site meets the precinct 1 parking rate requirement of 0.80 spaces per unit. Considering its proximity to Streetsville GO station, access to MiWay transit services, and nearby amenities on Queen Street, along with the implementation of various Transportation Demand Management (TDM) measures, the proposed parking rate of 0.80 spaces per dwelling unit is anticipated to adequately cater to the development's needs. It is expected that the site will better reflect the characteristics within Precinct 1, particularly as the vicinity surrounding Streetsville GO station undergoes further densification.

8.3.6 Streetsville Area Context

The site is situated within the Streetsville area, characterized by a Mixed-Use zone that encompasses diverse land uses along Queen Street. These include a range of residential buildings from low to mid-rise, alongside eateries, pharmacies, medical facilities, supermarkets, banks, places of worship, educational institutions, as well as other commercial and employment establishments.

The variety of amenities accessible within a short distance from the site along Queen Street (approximately a 10-minute walk) facilitates residents in accessing both essential and non-essential services without relying on vehicles. They have the option to walk or cycle for errands as desired.

With ongoing development and densification of the Village, it is anticipated that an increasing number of amenities will emerge. This further reinforces the feasibility of shorter, local trips via alternative modes of transportation, thereby reducing the demand for parking within Streetsville.

8.3.7 Conclusion

Based on a review of previous zoning by-law exceptions, the current provisions within the City of Mississauga By-law requirements, as well as observed residential parking demand at a similar residential site within the City of Mississauga, the proposed residential parking supply can be supported.

8.4 Visitor Parking Justification

It is noted that the visitor parking supply proposed for the site does not meet the City of Mississauga Zoning By-Law parking requirements and is deficit by 78 parking spaces and therefore visitor rate is justifying for the proposed parking ratio of 0.12 spaces/unit.

8.4.1 Observed Parking Demand at 1750 Bloor Street and 3315 Fieldgate Drive

It is noted that an overnight parking survey was conducted by LEA Consulting at 1750 Bloor Street and 3315 Fieldgate Drive within the City of Mississauga. The site is approximately 4.6 km to Kipling GO Station and consists of approximately 302 units in two-11 storey buildings.

The peak residential parking demand observed at this site was 0.09 spaces/unit from Thursday, February 28, 2019, to Sunday, March 3, 2019 from 6:00 P.M. to 1:00 A.M. and the subject site has a similar residential context, as well as similar major highway access while also being a significantly further distance to higher-order transit uses.

Based on the proposed rate of 0.09/spaces/unit, the proposed visitor parking supply of 131 spaces at the subject site would be in surplus by 37 spaces.

8.4.2 Approved Visitor Parking Rate at 180 Rutledge Road

The property at 180 Rutledge Road has proposed the construction of a five-story building comprising approximately 62 dwelling units, intended for use as a retirement residence. The proposed parking ratio for residential spaces is 0.10 parking spaces per unit, a rate that was ultimately approved by the Committee of Adjustment on July 20th, 2023.

Situated diagonally opposite to the approved development, at the northwest intersection of Tannery Street and Rutledge Road, the subject site shares a similar context and proximity to the Streetsville GO Station. This proximity allows for a pertinent comparison and precedent regarding suitable parking provisions in close proximity to the station. This comparison supports the proposed visitor parking rate of 0.10 parking spaces per unit.

Based on the approved parking rate of 0.10 spaces/unit, the proposed supply of 131 parking spaces at the subject site would be in surplus of 27 spaces.

8.4.3 Paid/Unpaid On-Street Parking Availability

Two parking facilities, referred to as parking lots 17 and 20, are situated on Broadway Street, conveniently located within a 4–5-minute walk from the subject site. The existing paid parking, with additional on-street parking available, offer a maximum parking duration of 4 hours from Monday to Friday between 7 AM and 7 PM, a 12-hour maximum from Monday to Friday between 7 PM and 7 AM, and a 24-hour maximum on Saturdays and Sundays.

In total, there are approximately 50 parking spaces along Broadway Street that can accommodate visitor needs in case of excess demand. Furthermore, on-street parking facilities are present on the west side of Rutledge Road, within a short walking distance from the proposed site.

8.4.4 Conclusion

Based on a review of previously approved zoning by-law exceptions, the current provisions within the City of Mississauga By-law requirements, the availability of additional paid on-street parking close to the site, as well as observed visitor parking demand at a similar mixed-use site within the City of Mississauga, the proposed visitor parking supply can be supported.

9.0 Transportation Demand Management (TDM)

Transportation Demand Management (TDM) measures are recommended to promote alternative modes of transportation, such as transit, cycling or walking, and reduce single-occupant vehicle (SOV) trips entering and exiting the proposed development.

9.1 Existing TDM Opportunities

9.1.1 Modal Split

Transportation Tomorrow Survey (TTS) data was analyzed to determine the modal split at the subject development, located in 2006 GTA Zones 3602, 3604, 3715, 3718 and 3836. **Table 21** summarizes the modal split at the site, resulting from the TTS query analysis. The detailed TTS query is provided in **Appendix R**.

Table 21: Modal Split

Mode of Travel	Modal Split
Auto	79%
Transit	12%
Cycling	1%
Walking	8%

Note: other modes of transportation such as motorcycles and taxi passengers only represent less than 1% of the modal split and were not included in the results.

Per the results summarized above, while vehicles are the dominant form of travel mode in the area, there is a sizeable portion of the community using transit to reach their destinations, with some walking and cycling.

However, the number cycling trips is expected to generally increase as the village continues to implement cycling infrastructure.

9.1.2 Active Transportation

The study area provides ample opportunities for pedestrians to make trips, as sidewalks are available on at least one side of the road on the surrounding roadways, with wide sidewalks provided on both sides of Joymar Drive, Tannery Street and Thomas Street.

Cyclists have north/south connectivity along the signed route available Queen Street south to the north of the intersection of Queen Street and Plaza Access and separated bicycle lanes are planned to the south of the intersection within the City's Cycling Master Plan. Additionally, separated bicycle lanes are proposed for Thomas Street as part of the proposed cycling network outlined in the Cycling Master Plan.

9.1.3 Transit

As outlined previously in Section 2.3, there are two transit routes operated by Miway Transit available in the vicinity of the subject site that are within a 5-minute walk. As indicated by the TTS results, approximately 12% of peak hour trips use transit in the study area.

It is noted that headways are at about 15 minutes in the A.M. peak hour and about 30 minutes in the P.M. peak hour. However, the development is in close proximity to Streetsville GO station that can be reached by walking or cycling, which operates with 15-minute headways to/from Union Station during peak periods.

9.2 TDM Opportunities and Recommendations

This section discusses the Transportation Demand Management opportunities and recommendations to enhance the non-single occupant auto vehicle trips for the future residents of the subject development. A variety of TDM measures and strategies have been detailed below.

9.2.1 Pedestrian Facilities

The proposed site plan ensures safe, comfortable convenient pedestrian connections that will facilitate mobility for pedestrians between the site and the surrounding roadways. This is accomplished by establishing pedestrian pathways on the north and south sides of the site, linking to Tannery Street and Thomas Street. These connections offer access to bus stops on Thomas Street and the Streetsville Go Station, ensuring seamless connectivity for pedestrians.

Additionally, pedestrian-friendly design measures such as proper lighting, benches, and landscaping are expected to be implemented to provide a welcoming and safe walking environment. The ground floor will provide a weather refuge, and other beautification measures (landscaping, greenery, amenities).

9.2.2 Cycling Facilities

The proposed site offers abundant bicycle parking amenities, aiming to promote and facilitate active transportation. This initiative aligns with the planned improvements to the cycling network along Queen Street and Thomas Street.

Short-term bicycle parking facilities are advised to be positioned at ground level in visibly prominent and easily accessible locations near building entrances and outdoor amenity areas. Meanwhile, long-term parking should be designated in secure and weather-shielded areas.

The proposed bicycle parking allocation exceeds the current mandated parking provision, thereby encouraging bicycle ownership as a viable alternative to vehicle ownership. This strategy not only promotes cycling as a practical mode of transportation for regular commutes but also facilitates first and last-mile journeys, including trips to the Streetsville GO station.

9.2.3 Active Transportation

The proposed cycling network, as outlined in the Cycling Master Plan, suggests dedicated bicycle lanes along Queen Street and Thomas Street. Additionally, it is recommended that the City consider implementing separate bicycle lanes on Joymar Drive and Tannery Street to enhance cycling connectivity within the Streetsville Community. This improvement would further encourage people to choose cycling as a mode of commuting.

9.2.4 Transit Facilities

The use of transit is generally supported by providing sufficient pedestrian connectivity from the site to the existing sidewalk on Thomas Street, which provides a convenient means of accessing the existing local transit stops located within a short walking distance of the site and the Streetsville Go Station as well.

MiWay Transit could also consider monitoring headway times for P.M. peak hours as the Streetsville area continues to develop with high-density developments to improve transit service.

9.2.5 Carshare Facilities

The developer is recommended to consult with carshare providers to provide vehicle(s) and dedicated parking stall(s) on-site to encourage car sharing activities and to reduce the need for automobile ownership. Car share spaces are expected to reduce vehicle ownership of residential developments and overall parking demand that is generated.

Based on the Parking Standard Review: Examination of Potential Options and Impacts of Car Share Programs on Parking Standards report prepared by IBI Group, each car share vehicle can substitute 4-8 regular parking spaces in a residential building and result in 8-10 vehicles removed from the road.

The residents will be encouraged to use cycling or walking for short duration trips and use carshare for essential purpose only.

9.2.6 Wayfinding

Signage or a digital display may be incorporated at front entrances or central areas (such as a lobby) to provide residents and visitors transit information, such as schedules of nearby routes.

Wayfinding signage may be installed to direct residents and visitors to locate bike share, transit stops and stations, and trails throughout the area. Additional wayfinding signages leading residents to nearby bus stops may be provided to promote the use of local transit options.

9.2.7 Education and Incentives

Various educational measures and incentives may be promoted at the new residential site to overall build a robust TDM brand and promote use of alternative modes of transportation available to residents.

The residential units being sold at the subject site should be promoted with a strong TDM brand, where marketing should highlight the convenience of proximity to nearby bus stops and amenities, as well as the accessibility to bike storage and the nearby trails.

Education on available transit in the vicinity of the subject site would also be highly effective in promoting transit to new residents, who may not be aware of the variety of options available in the area. Handouts on local transit offerings and stop/schedule information, as well as nearby cyclist and pedestrian routes, may be provided to residents as part of a welcome package, and extra copies should be made available in the lobby for reference.

9.2.8 Unbundled Resident Parking

The development is recommended to provide unbundled resident parking to separate the cost of parking from the cost of each residential unit for all new residents in site. This is expected to make visible the hidden cost of driving and encourage residents to make more effective use of active transportation and available transit facilities.

9.2.9 Parking Reduction

Limiting parking availability will encourage residents to explore alternative modes of transportation besides driving. This measure will decrease the volume of vehicles on the road and mitigate auto-dependency by reducing vehicle ownership, thereby discouraging vehicle usage.

9.2.10 Subsidized Transit Passes

The developer will be suggested to provide a 2-month preloaded transit pass to each unit as a new move-in incentive to encourage the habit of using public transit for daily commuting. It is noted that Metrolinx announced free local transit rides for all GO Rail passengers, so residents using Streetsville GO Station would not have to pay to transfer to a local MiWay transit route.

10.0 Community Impacts

No formal transportation related comments from the Community have been received pertaining to the Subject Development to date. Community concerns/comments related to transportation will be included within this section as part of any subsequent application(s).

11.0 Conclusion

The findings and recommendations of our analysis are summarized as the following:

- Under 2023 existing conditions, the study road network operates with a Level of Service “D” or better, however the Level of Service “E” for the southbound left-turn approach at the intersection of Thomas Street and Joymar Drive was identified in the weekday P.M. peak hour.
- Under 2028 future background conditions, all the study intersection operate similar to the existing conditions.
 - The Level of Service is expected to deteriorate to “F” at the intersection of Thomas Street and Joymar Drive due to increase in control delay by 51 seconds that is mainly because of the growth rate applied on Thomas Street for through traffic as they background developments do not contribute southbound left-turn trips.
 - The 95th percentile queue length for the southbound left-turn at the intersection of Thomas Street and Joymar Drive is expected to increase and exceed the available storage in the weekday P.M. peak hour. However, the 50th percentile queue length is expected to stay within the available storage.
- The proposed development is expected to generate 283 two-way (74 inbound and 209 outbound) trips during the weekday A.M. peak hour and 334 two-way (207 inbound and 127 outbound) trips during weekday P.M. peak hour.
- Under 2028 future total conditions, all the study intersection operate similar to the future background conditions.
 - The southbound left-turn operate is expected to remain at Level of Service “F” in the weekday P.M. peak hour. The control delays are expected to increase by 145 seconds compared to the future background scenario. With only 7 trips originating from the site and making southbound left-turns at the intersection, it is not expected to be the primary cause for the delays. Although the volume-to-capacity ratio is expected to increase to 0.89, it remains within the threshold of 1.00 for exclusive turning movements and is considered acceptable.
 - Some 95th percentile queues may exceed the existing storage lengths, but nearly all average queue lengths are expected to be contained within the existing storage. However, the northbound left-turn queues at the intersection of Queen Street and Thomas Street and southbound left-turn queues at the intersection of Thomas Street and Joymar Drive are expected to increase by 10 metres in the weekday P.M. peak hour compared to the future background conditions. The average queues are expected to be within the available storage. The 95th percentile queue length for southbound left-turn lane at Thomas Street and Joymar Drive can be accommodated within the combined storage and taper length.
- The site access is expected to operate well with minimal delays and no queueing issues identified. Additionally, sightlines and access spacing were reviewed at the site access and were found to be adequate.
- A signal warrant was conducted per the Ontario Traffic Manual Justification 7 for projected volumes at the intersection of Thomas Street and Joymar Drive. The volumes fell short of satisfaction levels and therefore a signal is not recommended.

- Sight lines, Corner Clearance and Clear Throat Length are adequate for the proposed site accesses per the TAC standards. The vehicles turning right from site access via Tannery Street have sight distance to the end of Tannery Street and to the intersection of Joymar Drive and Tannery Street.
- Vehicle maneuverability diagrams were prepared and indicate that all design vehicles can circulate the proposed site adequately without encroaching on any curbs or obstacles.
- A parking assessment and justification was conducted for the proposed development and the proposed auto and bicycle parking supplies were determined to be adequate to support the needs of residents and visitors at the proposed site based on a review on the surrounding land-use context, transit availability and observed parking rates within the City of Mississauga.
- Transportation Demand Management (TDM) measures, including “hard” measures such as adequate cycling and pedestrian facilities, as well as “soft” measures such as unbundling the parking supply and providing transit incentives were recommended to reduce single-occupant vehicle trips and to promote transit and active transportation uses.
- Therefore, the proposed site is not expected to materially impact the surrounding study transportation network and supports the build out of a multi-modal transportation and can therefore be supported from a transportation perspective.

We trust that this study satisfies any transportation related concerns associated with the proposed development. Should you have any questions or require any further information, please do not hesitate to contact the undersigned.

Respectfully submitted,

C.F. CROZIER & ASSOCIATES INC.



Brandon Bradt, M.Eng. CEM, P.Eng.
Manager, Transportation Planning

C.F. CROZIER & ASSOCIATES INC.



Theshantha De Silva, E.I.T.
Engineering Intern, Transportation

AD/BB/TDS

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Appendix A

City Correspondence and Terms of Reference

City of Mississauga Certification Forms

Appendix A

Certification Form

Individuals submitting reports will be responsible for all aspects of development-related transportation assessment and reporting, and undertaking such work, in accordance and compliance with the City of Mississauga's Official Plan, Transportation Master Plan, and Transportation Impact Study Guidelines.


By submitting the attached report (and any associated documents) and signing this document, I acknowledge that:

- I have reviewed and have a sound understanding of the objectives, needs, and requirements of the City of Mississauga's Official Plan, Transportation Master Plan, and the Transportation Impact Study Guidelines as they apply to this submission;
- I have sound knowledge of industry standard practices pertaining to the preparation of development-related transportation study reports;
- I have substantial experience (more than five years) in completing development-related transportation studies and strong background knowledge of the transportation planning and engineering principles underpinning these studies; and
- I am registered as a Professional Engineer (P.Eng.), Licensed Engineering Technologist (LET), Certified Engineering Technologist (C.E.T.), or Registered Professional Planner (RPP) in good standing in the Province of Ontario with specific training in transportation planning and engineering.

Dated at Toronto this 17th day of December, 2024.
(City)

Name: Brandon Bradt

Professional Title: Manager, Transportation Planning

Signature: 

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Appendix B

APPROVED
By James Emerson at 9:55 am, Dec 04, 2024

Pre-Study Consultation Checklist

Description	Information	Section Reference
Development Information		
Development Description (land use, size, and number of phases of development)	Phase 1: •Three (3) Condos, with four (4) podiums with a total of 1,043 units. Phase 2: - Phase 3: -	2.3.6

Description	Information	Section Reference
Transportation Impact Assessment		
Step 1 – Screening		
Type of Application (attach a drawing)	<input checked="" type="checkbox"/> Official Plan Amendment <input checked="" type="checkbox"/> Zoning Amendment <input type="checkbox"/> Site Plan Control Application <input type="checkbox"/> Plan of Subdivision <input type="checkbox"/> Other _____	2.3.5
Screening Criteria	<input checked="" type="checkbox"/> Trip Generation Trigger Satisfied <input type="checkbox"/> Location Trigger Satisfied <input type="checkbox"/> Operational/Safety Trigger Satisfied	2.2.1
Type of Study	<input checked="" type="checkbox"/> Transportation Impact Study <input type="checkbox"/> Access Review <input type="checkbox"/> No Additional Study Required	2.2.1
Step 2 – Scoping		
Study Area (intersections to be analyzed) Note: The Transportation Consultant is responsible to identify any further intersections impacted as the study progresses.	<ul style="list-style-type: none"> • Thomas Street at Joymar Drive • Thomas Street at Streetsville GO Station Parking lot Entrance • Thomas Street at Broadway Street • Joymar Drive at Tannery Street • Tannery Street at Broadway Street • Proposed sites accesses via Tannery and Thomas • Thomas Street & Hillside Drive • Thomas Street & Gaffney Drive / McFarren Boulevard • Thomas Street & Queen Street South 	2.3.8
Horizon Years	<input checked="" type="checkbox"/> 5 years from date of TIS <input type="checkbox"/> Interim years _____ <input type="checkbox"/> Other _____	2.3.9
Analysis Periods	<input checked="" type="checkbox"/> AM weekday peak hour of adjacent roadway <input checked="" type="checkbox"/> PM weekday peak hour of adjacent roadway <input type="checkbox"/> Saturday peak hour of adjacent roadway <input type="checkbox"/> AM weekday peak hour of development <input type="checkbox"/> PM weekday peak hour of development <input type="checkbox"/> Saturday peak hour of development <input type="checkbox"/> Other _____	2.3.10
Input Parameters and Assumptions (potential deviations)	None	2.3.13
Existing Transportation Conditions	<input type="checkbox"/> City data sources <input checked="" type="checkbox"/> New data collection _____ Compare new counts to pre-pandemic counts <input type="checkbox"/> Other _____	2.3.14

Description	Information	Section Reference
Planned Network Improvements (with timing)	Potential extension of Emby Drive to Tannery Street & Rutledge Road through proposed development at 51 & 57 Tannery St. & 208 Emby Dr. Timing unknown.	2.3.16
Other Planned Developments (per City's Website)	*21CDM-M 00 15012/SP 21-155 - 170, 180 and 190 Rutledge Road *OZ/OPA 24-7 W11 - 51 & 57 Tannery St. & 208 Emby Dr *21CDM-M 18-1 - 215 Broadway Street *SP 17-186 - 272, 274, and 278 Victoria Street *O21CDM-M 24-6 - 80 Thomas Street *OZ/OPA 24-8- 120 & 146 Queen Street and 169 Crumbie Street *OZ 20-11 - 86 Thomas Street *SP 21-80 - 31 Queen Street South *OZ/OPA 21-14 - 16 James Street *SP 19-141 - 1760 Bristol Road West	2.3.17
Identification of Mitigation Improvement Measures	<input type="checkbox"/> Neighbourhood Traffic Management Plan <input type="checkbox"/> Other _____	2.3.23
Safety Analysis (any special issues)	- None	2.3.25
Site Access and Circulation (design vehicles)	<input checked="" type="checkbox"/> Passenger Car (P) <input type="checkbox"/> Light Single Unit Truck (LSU) <input checked="" type="checkbox"/> Medium Single Unit Truck (MSU) <input type="checkbox"/> Heavy Single Unit Truck (HSU) <input type="checkbox"/> Pumper Fire Truck <input type="checkbox"/> WB-20 Tractor Semi-Trailer Truck <input checked="" type="checkbox"/> Peel Region Waste Collection Truck <input type="checkbox"/> Other: _____	2.3.26
Impacts During Construction (any special issues)	- None	2.3.27
Step 3 – Forecasting		
Growth Rate	<input checked="" type="checkbox"/> Obtained from City <input type="checkbox"/> Historical Traffic Counts <input type="checkbox"/> Travel Demand Forecasts <input type="checkbox"/> Proposed Growth Rate: _____	2.3.15
Site Trip Generation	<input checked="" type="checkbox"/> ITE Trip Generation Manual <input type="checkbox"/> "First Principles" <input type="checkbox"/> Observed Rates from Similar Developments in Area <input type="checkbox"/> Observed Rates from Subject Site <input type="checkbox"/> Other _____	2.3.19

Description	Information	Section Reference
Trip Reductions	<input type="checkbox"/> Internal Capture Reductions for Mixed Use Development <input type="checkbox"/> Non-Auto Mode Split <input type="checkbox"/> Pass-by Reductions <input type="checkbox"/> Other _____	2.3.19
Trip Distribution	<input checked="" type="checkbox"/> Local Traffic Patterns <input checked="" type="checkbox"/> TTS <input type="checkbox"/> Travel Demand Model <input type="checkbox"/> Population and Employment Distribution <input type="checkbox"/> Market Analysis of Catchment Area <input type="checkbox"/> Other _____	2.3.20
Trip Assignment	<input checked="" type="checkbox"/> Local Traffic Patterns <input checked="" type="checkbox"/> Shortest distance <input checked="" type="checkbox"/> Site Layout, Access Design and Logical Routing <input checked="" type="checkbox"/> Existing Turning Movements <input type="checkbox"/> Other _____	2.3.21
Transportation Demand Management Plan		
Format	<input checked="" type="checkbox"/> Within a TIA Report <input type="checkbox"/> Standalone	3.2.1
Type of Transportation Demand Management Plan	<input type="checkbox"/> TDM Statement <input checked="" type="checkbox"/> TDM Scheme	3.2.2
Pedestrian Circulation Plan		
Format	<input checked="" type="checkbox"/> Within a TIA Report <input type="checkbox"/> Standalone	4.2.1
Additional Comments		
<p>*Community Impacts: Any transportation related impacts on the existing community and comments from the public through the planning approvals process shall be addressed in the report.</p> <p>*Assess potential for traffic infiltration through adjacent residential streets</p> <p>*Access Review: Ensure that the site accesses conform to all TAC standards (e.g. corner clearances, clear throat lengths, veh & ped sight line distances for ingress/egress, proximity/alignment to other driveways/roads, etc.); Provide confirmation and technical justification of whether the site access location(s) and design(s) are safe for all roadway users and why. NOTE: The proposed Joymar Drive site access must align centerline to centreline with the proposed opposing access at 80 Thomas Street.</p> <p>*Traffic Control Warrants (e.g. all-way stop, traffic control signals) are to be provided, where applicable, for all three scenarios (existing, future background, future total)</p> <p>*Detailed Recommendations regarding on-site/off-site roadway improvements, site access, site circulation, and TDM measures shall be made.</p>		

Comment Response Matrix (Transportation)

Outstanding Comments (Transportation Specific - ONLY)

Please be advised that the information noted below is subject to change until all the required review groups have completed the applicable review cycle. You will not be able to respond to any outstanding comments until you have been assigned a Prescreen Corrections or an Applicant Resubmit task. If you require assistance with your task, please visit: <https://www.mississauga.ca/eplanshelp>

REF #	CYCLE	REVIEWED BY	COMMENT TEXT	FILENAME	DISCUSSION	MILESTONE	STATUS
77	1	GO TRANSIT - METROLINX Metrolinx Development Coordinator 10/24/24 1:12 PM	<p>General Context Comments</p> <ul style="list-style-type: none"> The development is within 300m of the CP Galt Subdivision which carries Metrolinx' s Milton GO Train service. As CP Rail is the owner of the railway corridor, they are the authority to provide commentary on matters related to rail safety. Metrolinx suggests that CP Rail is circulated the application for review. 				Info Only
78	1	GO TRANSIT - METROLINX Metrolinx Development Coordinator 10/24/24 1:13 PM	<p>Transportation Impact in proximity to Streetsville GO</p> <p>Metrolinx is in receipt of the Transportation Impact Study prepared by C.F. Crozier & Associates Inc dated April 24, 2024. Metrolinx provides the following comments:</p>				Info Only
79	1	GO TRANSIT - METROLINX Metrolinx Development Coordinator 10/24/24 1:14 PM	<p>Transportation Impact in proximity to Streetsville GO</p> <p>(Unresolved) Page 21: The study likely overestimates the number of vehicle trips being generated by this development. Given the proximity of the site to Streetsville GO, it could reasonably be assumed that a proportion of trips are not vehicle-based and instead walk or cycle to/from the GO station, or walk to/from a nearby MiWay bus stop. This proportion should be estimated through a review of 2016 TTS mode share data for traffic zones in the Streetsville neighbourhood, or through a review of approaches taken in other Streetsville area TIS reports, and adjustments made to reflect a more accurate vehicle trip generation. Alternatively, a different ITE trip generation rate could be used (as noted in Appendix K, the rate currently used is for multifamily housing not close to rail transit).</p>		Noted. Analysis is maintained in the updated TIS & PJS Update as the mentioned over-estimate of trips yields a conservative analysis		Unresolved

80	<p>1 GO TRANSIT - METROLINX Metrolinx Development Coordinator 10/24/24 1:14 PM</p>	<p>Transportation Impact in proximity to Streetsville GO</p> <p>(Unresolved) Page 40: While the site is located across Thomas Street from the Streetsville GO Station parking lot, the Streetsville lot is only to be used by GO Transit customers and should not be used for general area parking. Please continue to reference the proximity of the development to the GO station, but remove reference to the parking lot.</p>		<p>Reference to the Streetsville GO Parking Lot has been removed from the TIS & PJS Update</p>	<p>Unresolved</p>
81	<p>1 GO TRANSIT - METROLINX Metrolinx Development Coordinator 10/24/24 1:15 PM</p>	<p>Transportation Impact in proximity to Streetsville GO (Info) General comments:</p> <p>1. Given the proximity of the site to Streetsville GO, we recommend working with the City of Mississauga to explore measures that discourage jaywalking at the Joymar Drive/Thomas Street intersection and encourage individuals to use the signalized crossing at the GO access road.</p> <p>1. Please consider providing wayfinding within the development that directs residents and guests towards safe paths (i.e. formal crosswalks and sidewalks) to Streetsville GO. Please consult the Metrolinx Wayfinding Design Standards (DS-03) for reference: http://www.gosite.ca/engineering_public/DesignStandards/Designstandards.aspx</p> <p>1. Please consider providing additional safety and customer experience measures to minimize and mitigate conflicts between cyclists, pedestrians, and vehicles at the loading/parking access and along the parking garage ramp</p>			<p>Info Only</p>
185	<p>1 PARKING Paulina Szmudrowska 10/31/24 3:59 PM</p>	<p>The applicant is advised that the City's parking Terms of Reference (ToR) is available online to all applicants and their consultants. This document shall be used as a guide that will aid with the submission of satisfactory justification in relation to this proposal.</p> <p>City's parking Terms of Reference (ToR): https://www.mississauga.ca/wp-content/uploads/2020/07/15084526/COM-Parking-Studies-ToR-2021-09.pdf</p> <p>The City requires the submission of a Parking Utilization Study (PUS) to justify parking reductions of generally more than 10% from current Zoning By-law standards. When the parking reduction is relatively minor (generally less than 10% of the By-law standards) a Letter of Justification based on the nature of the operation and its land use circumstances may be acceptable.</p> <p>Please be advised, a Parking Utilization Study (PUS) or Parking Justification Letter (PJI) is usually required as part of a rezoning or a Committee of Adjustment application.</p>		<p>It is noted that there is ongoing coordination with City staff regarding the Terms of Reference for the Parking Study. Specifically, the selection of proxy sites that would be surveyed and form the basis of the justification. However, it is further noted that the proposed site is within the planned future Streetsville Major Transit Station Area and as a result is not expected to have minimum parking requirements for residential uses.</p>	<p>Unresolved</p>

15	1 TRAFFIC REVIEW James Emerson 10/18/24 3:09 PM	COMMENT: [LAND DEDICATIONS] The Owner will be required to gratuitously dedicate the following to the City of Mississauga: (A) RIGHT OF WAY WIDENINGS (i) A right of way widening towards the ultimate 26 metre right-of-way of Thomas Street as identified in the Official Plan. (B) SIGHT TRIANGLES (i) A 7.5 metre sight triangle at the northeast corner of Thomas Street and Joymar Drive. (ii) A 7.5 metre sight triangle at the southeast corner of Tannery Street and Joymar Drive.			Info Only
16	1 TRAFFIC REVIEW James Emerson 10/18/24 3:11 PM	SUBMISSION REQUIREMENT: [TRANSPORTATION IMPACT STUDY] (A) A Transportation Impact Study from C&F Crozier and Associates Inc. dated April 2024 has been provided. Detailed review to occur in formal application stage. (B) Due to the significant change site plan density from when the original TOR was approved, The traffic consultant must provide an updated TOR (filled out Pre-Study Consultation Checklist - Appendix B of the City's TIS Guidelines) to the City's Traffic Planning Section for review and receive confirmation prior to further review of the study. The terms of reference should be addressed to Trans.Projects@mississauga.ca (i) Any additional requirements that are amended to the updated TOR will be required to be included in the TIS. (ii) The updated TOR checklist is to be included in the TIS report.		An updated ToR has been confirmed with City Staff and is attached as Appendix A to the updated TIS & PJS Update.	Unresolved
17	1 TRAFFIC REVIEW James Emerson 10/18/24 3:13 PM	COMMENT: [TRAFFIC NOTES] (i) All damaged or disturbed areas within the municipal right-of-way are to be reinstated at the Owner's expense. (ii) All landscaping and grading within close proximity to the proposed access points is to be designed to ensure that adequate sight distances are available for all approaching and exiting motorists and pedestrians. (iii) The portion of the driveway within the municipal boulevard is to be paved by the Owner. (iv) Driveway accesses shall maintain a 1.5m setback from aboveground features such as utilities and trees. (v) Any above ground utilities located within 1.5m of a proposed access are to be relocated at the Owner's expense. (vi) The cost for any/all road improvements required in support of this development application will be borne by the Owner. (vii) The Owner shall make satisfactory arrangements with the Transportation and Works Department for the design, construction and payment of all costs associated with works necessary in support access to this site. (viii) Any access to internal servicing shall be provided internally through the site.	(i) All damaged or disturbed areas within the municipal right-of-way are to be reinstated at the Owner's expense. (ii) All landscaping and grading within close proximity to the proposed access points is to be designed to ensure that adequate sight distances are available for all approaching and exiting motorists and pedestrians. (iii) The portion of the driveway within the municipal boulevard is to be paved by the Owner. (iv) Driveway accesses shall maintain a 1.5m setback from aboveground features such as utilities and trees. (v) Any above ground utilities located within 1.5m of a proposed access are to be relocated at the Owner's expense. (vi) The cost for any/all road improvements required in support of this development application will be borne by the Owner. (vii) The Owner shall make satisfactory arrangements with the Transportation and Works Department for the design, construction and payment of all costs associated with works necessary in support access to this site. (viii) Any access to internal servicing shall be provided internally through the site.		Info Only
18	1 TRAFFIC REVIEW James Emerson 10/18/24 3:14 PM	COMMENT: [ADDITIONAL COMMENTS] Further Traffic comments may be provided subject to the receipt of new or revised information.			Info Only

19	1 TRAFFIC REVIEW James Emerson 10/18/24 3:20 PM	<p>SUBMISSION REQUIREMENT: [INTERNAL SITE CIRCULATION]</p> <p>(a) Turning movement diagrams will be required to depict the internal site circulation.</p> <p>(b) Additional provisions to aid in the safety and operation of these features may be required.</p> <p>(c) Detailed turning movements are to be provided for ingress and egress through the access point(s) for the site.</p> <p>(d) Confirmation from Fire and Emergency Services that the internal road is acceptable from an emergency response perspective.</p> <p>(e) Confirmation from the Region of Peel that the internal road is acceptable from a waste collection perspective.</p> <p>(f) A turn around facility may be required as a result of the above in addition to providing sufficient snow storage for the proposed development</p>		Vehicle Turning diagrams are provided in TIS & PJS Update.	Unresolved
20	1 TRAFFIC REVIEW James Emerson 10/18/24 3:37 PM	<p>SUBMISSION REQUIREMENT: [DRAFT R-PLAN]</p> <p>Prior to any Land Dedications & Conveyances, the Owner shall prepare and submit draft reference plans detailing the required land dedications & conveyances to this section for review and approval (See Traffic Comment #15).</p>		Owner to provide separately	Unresolved
21	1 TRAFFIC REVIEW James Emerson 10/18/24 3:37 PM	<p>COMMENT: [CYCLING FACILITIES]</p> <p>The Owner will be required to provide accessible and secure short term (outdoor) and long term (indoor) bicycle storage facilities on site. The Site Plan shall be revised to identify the cycling facility locations and to specify the facility detail(s), including quantity of spaces proposed for each. The following rates are to be used:</p> <p>(a) Apartment Mississauga - A minimum of 0.60 long term spaces and 0.05 (6 spaces min.) short term spaces per residential unit.</p>		These spaces have been provided and are outlined in Table 17 of the TIS & PJS Update	Info Only
22	1 TRAFFIC REVIEW James Emerson 10/18/24 3:40 PM	<p>COMMENT: [BICYCLE LANE / ROUTE SIGNAGE]</p> <p>Prior to Site Plan approval and as per the Mississauga Cycling Master Plan, Thomas Street has been identified as a bike route. The applicant is advised that a Bike Lane / Route Sign fee payment for 1 sign is required in accordance with the current Transportation and Works Fees and Charges By-Law.</p> <p>Please provide a certified cheque or bank draft directly to the Transportation and Works Customer Service Counter at 3185 Mavis Road to ensure the payment is applied to the associated condition and to obtain a receipt. A copy of the receipt, confirming the fee has been paid is to be provided to this Section with a future submission for our records and to clear this condition. For fees paid in 2024, the current rate is \$325.00 per sign. This payment is NOT subject to HST. Note: The fees collected for cycling route signs are not allocated towards a specific route and can be used towards cycling signage within any route. For current fees and charges, please go to https://www.mississauga.ca/council/by-laws/ and select: Fees and Charges: Transportation and Works</p>			Info Only
23	1 TRAFFIC REVIEW James Emerson 10/21/24 9:07 AM	<p>COMMENT: [SITE ACCESS]</p> <p>(i) The proposed Joymar Drive access shall align with the opposing accesses Joymar Drive. Alternatively, if align the accesses is not feasible, the access must be situated such that adequate spacing is provided from the opposing access points to avoid potential overlapping turn conflicts. In addition, depiction of opposing driveways must be shown on the drawings.</p> <p>(ii) The Owner shall ensure the proposed accesses provide sufficient sight lines such that views are not obstructed at the intersection (street trees, structures, etc.).</p>		The opposing accesses have been depicted on the updated Site Plan and the spacing between the accesses of 135m+ is sufficient as indicated in Table 14 of the TIS & PJS Update. Sight lines are provided as Figure 9	Unresolved

56	1 TRAFFIC REVIEW James Emerson 10/23/24 3:56 PM	<p>COMMENT: [ACCESS MOD DETAILS]</p> <p>(a) The Grading Plan shall be revised to dimension the existing driveway widths at the street and property line.</p> <p>(b) The Grading Plan shall be revised to dimension the proposed driveway widths at the street and property line.</p> <p>(c) Proposed driveway and entrance curb radii dimensions shall be in accordance with OPSD 350.010.</p> <p>(d) The Grading Plan shall be revised to identify the portions of the municipal sidewalk and curb across the proposed access as "Heavy Duty Curb / Sidewalk as per City of Mississauga standards".</p> <p>(e) The Grading Plan shall be revised to identify the portions of the curb returns at the proposed access as "Curb returns as per City of Mississauga standards".</p> <p>(f) The Owner shall provide quantities required for the removal and replacement works for the proposed access modifications.</p> <p>(g) All existing site accesses shall be identified as To Be Removed with curbing, boulevard, sidewalk, etc. restored to City Standards.</p> <p>(h) The proposed access points will be addressed through the Development Agreement. All costs associated with the proposed access works shall be borne by the Owner.</p>			Info Only
58	1 TRAFFIC REVIEW James Emerson 10/23/24 4:09 PM	<p>COMMENT: [PLAN REVISIONS]</p> <p>(i) The plans are to be revised to illustrate the required Land Dedications & Conveyances including the Lot/Block or Part numbers.</p>			Unresolved
103	1 TRAFFIC REVIEW James Emerson 10/25/24 11:47 AM	<p>[MUNICIPAL SIDEWALK]</p> <p>A proposed 1.8 metre to 2.4 metre wide concrete sidewalk is to be installed as part of the development along the Joymar Drive frontage. Exact width to be determined. All costs associated with the installation of concrete sidewalk is the responsibility of the Owner.</p>			Info Only

Terms of Reference Correspondence

From: Ian Lindley
Sent: Wednesday, May 3, 2023 10:59 AM
To: Aarzo Dhanani
Subject: FW: 66 Thomas Terms of Reference
Attachments: [CMississauga TIS Guidelines Appendix A Certification Form.pdf](#); [Pre-Consultation Checklist - 64-66 Thomas St \(Final Approved\).pdf](#)

Ian Lindley, M.A.Sc., P.Eng.
Project Engineer, Transportation
DID: 905.876.7119

From: Michael Turco <Michael.Turco@mississauga.ca>
Sent: April 24, 2023 3:46 PM
To: Ian Lindley <ilindley@cfcrozier.ca>
Cc: Trans Projects <Trans.Projects@mississauga.ca>; Brandon Bradt <bbradt@cfcrozier.ca>
Subject: RE: 66 Thomas Terms of Reference

Hi Ian,

Please find attached stamped and approved ToR for the proposed development, which encompasses City comments. Other items to note:

- Certification Form - The Transportation Consultant must complete, sign, and seal (if appropriate) the attached Certification Form from the City's TIS Guidelines (2022) and submit the document with the application/report to ensure compliance with qualification requirements. The TIS Guidelines can be found at <https://www.mississauga.ca/wp-content/uploads/2023/03/CMississauga-TIS-Guidelines-Version-5.1-Dec-2022.pdf> . It must be ensured that the report conforms to the City's TIS Guidelines.
- Please contact Tyler Xuereb from the City's Transportation Planning Section (tyler.xuereb@mississauga.ca, Ext. 4783) to confirm growth rates for the study area roadways.
- Signal timing plans for signalized intersections under the City's jurisdiction can be obtained from Jim Kartsomanis (Jim.Kartsomanis@mississauga.ca, Ext. 3964).

Should you have any questions, please feel free to contact me.

Thank you,



Michael Turco, C.E.T., CPT, MITE
Traffic Planning Technologist

T 905-615-3200 ext. 3597
michael.turco@mississauga.ca

[City of Mississauga](#) | Transportation & Works Department
300 City Centre Drive | Mississauga ON | L5B 3C1

Please consider the environment before printing.

From: Ian Lindley <ilindley@cfcrozier.ca>
Sent: Thursday, April 20, 2023 9:02 AM
To: Michael Turco <Michael.Turco@mississauga.ca>
Cc: Trans Projects <Trans.Projects@mississauga.ca>; Brandon Bradt <bbradt@cfcrozier.ca>
Subject: RE: 66 Thomas Terms of Reference

Good morning,

Please see attached completed checklist for 66 Thomas.

If there are any questions or concerns, please let us know.

Regards,

Ian

Ian Lindley, M.A.Sc., P.Eng.
Project Engineer, Transportation
55 Wyndham Street North, Suite 215 | Guelph, ON N1H 7T8
T: 548.708.0022



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From: Michael Turco <Michael.Turco@mississauga.ca>
Sent: April 19, 2023 1:09 PM
To: Ian Lindley <ilindley@cfcrozier.ca>
Cc: Trans Projects <Trans.Projects@mississauga.ca>; Brandon Bradt <bbradt@cfcrozier.ca>
Subject: RE: 66 Thomas Terms of Reference

Hi Ian,

As the latest proposal is a significant deviation from what was initially contemplated, a new Terms of Reference would be required to reflect the larger scale of the proposed development.

Thank you,

Michael Turco, C.E.T., CPT, MITE
Traffic Planning Technologist
T 905-615-3200 ext. 3597

From: Ian Lindley <ilindley@cfcrozier.ca>
Sent: Wednesday, April 19, 2023 11:57 AM
To: Michael Turco <Michael.Turco@mississauga.ca>
Cc: Trans Projects <Trans.Projects@mississauga.ca>; Brandon Bradt <bbradt@cfcrozier.ca>
Subject: RE: 66 Thomas Terms of Reference

Good Morning Michael,

Thank you for your response. I apologize if I didn't indicate that this was an existing application (File: OZ 19/011 W11) and that this was not a new terms of reference.

Please let us know if this affects your response below or if there are any other questions.

Regards,

Ian

Ian Lindley, M.A.Sc., P.Eng.
Project Engineer, Transportation
55 Wyndham Street North, Suite 215 | Guelph, ON N1H 7T8
T: 548.708.0022



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Read our latest news and announcements [here](#).

From: Michael Turco <Michael.Turco@mississauga.ca>
Sent: April 19, 2023 7:03 AM
To: Ian Lindley <ilindley@cfcrozier.ca>
Cc: Trans Projects <Trans.Projects@mississauga.ca>
Subject: RE: 66 Thomas Terms of Reference

Good morning Ian,

Please be advised that the City of Mississauga have recently updated their [Transportation Impact Study Guidelines](#). All Transportation Impact Studies must adhere to these guidelines. As noted in the document, we also have a new process to follow for Terms of References. To expedite the process, Transportation Consultants must complete and submit the Pre-Study Consultation Checklist (attached) provided in Appendix B. The City will review and comment on the assumptions once the document is submitted.

Thank you,



Michael Turco, C.E.T., CPT, MITE

Traffic Planning Technologist
T 905-615-3200 ext. 3597
michael.turco@mississauga.ca

[City of Mississauga](#) | Transportation & Works Department
300 City Centre Drive | Mississauga ON | L5B 3C1

Please consider the environment before printing.

From: Ian Lindley <ilindley@cfcrozier.ca>
Sent: Tuesday, April 18, 2023 4:15 PM
To: Bo Yu <BoYang.Yu@mississauga.ca>
Subject: 66 Thomas Terms of Reference

Hello,

C.F. Crozier and Associates (Crozier) has been retained to prepare a Transportation Impact Study (TIS) for a residential development located at 65-95 Joymar Drive in Mississauga.

It is noted that Crozier has previously submitted a Transportation Study on behalf of the owner of these lands, but that the proposed site plan has since changed the characteristics of the site from townhouses to a multiple tower midrise development. Please see attached draft site plan for your reference, but we note that this plan is subject to change prior to the submission.

As a result we have provided an updated Terms of Reference for the City's consideration below, which would add a background development and update the trip generation for the site. We note that a Parking Study is not envisioned to be necessary at this time based on the current site plan but we will reach out regarding a separate Terms of Reference for a Parking Study, if necessary.

Please review the Terms of Reference below and confirm if the proposed scope of work is sufficient to support the modified mid-rise site plan concept.

Study Methodology for the Transportation Impact Study

Study Area and Intersections to Assess

The following intersections are proposed to be analyzed per the original study area:

- Thomas Street at Joymar Drive
- Thomas Street at Streetsville GO Station Parking lot Entrance
- Thomas Street at Broadway Street
- Joymar Drive at Tannery Street
- Tannery Street at Broadway Street
- Proposed sites accesses via Tannery and Thomas

Traffic counts were collected in 2019 and are proposed to continue to be used for the purposes of preparing the new TIS.

The following background developments are also proposed to be included, which includes one new background development:

1. OZ/OPA 10 5 - 56 Tannery Street
2. 21CDM-M 00 15012 - 170, 180 and 190 Rutledge Road
3. OZ/OPA 18 12 - 51 & 57 Tannery St. & 208 Emby Dr
4. OZ/OPA 18 15 - 473 and 505 Hensall Circle
5. 21CDM-M 18 1 - 215 Broadway Street
6. SP 17 186 - 272, 274, and 278 Victoria Street
7. OZ 16 – 13 - 80 Thomas Street
8. DARC 22-493 W11 – 120 & 146 Queen Street and 169 Crumby Street (NEW)

We have the signal timings from 2019, but please confirm if they remain unchanged. If not, please provide the updated signal timings plans for the intersection of Thomas Street at Streetsville GO Station Parking lot Entrance.

Analysis Periods and Scenarios

The weekday AM and PM peak hours for 2023 existing conditions, considering an opening year of 2026, a 5-year horizon year after full build-out (2031) will also be considered for background and total traffic conditions per the original TOR.

Future Background Traffic Growth Rate

Please confirm that the growth rates shown below for Thomas Street are still applicable as per the previous TOR. It is noted that no growth rates are proposed on other roadways.

	Eastbound	Westbound
AM Peak Hour	0.5%	1.0%
PM Peak Hour	1.0%	1.0%

Future background traffic volume will be estimated for the study area to ensure that the analysis includes background traffic growth and growth from other developments in the area.

Trip Generation

Trip generation for the proposed development will be based on Trip Generation Manual, 11th Edition prepared by the Institute of Transportation Engineers (ITE) for Multifamily Housing (Mid-Rise) (land use code 221).

The information contained in the 2016 Transportation Tomorrow Survey (TTS) for zone 3715 and 3836 has been reviewed. Per the TTS information, a 13% modal split is observed, but it is noted that to ensure a conservative assessment, no modal split reduction will be applied to the ITE trip generation rates.

- Trip distribution, assignments will be based on the latest 2016 Transportation Tomorrow Survey (TTS)

Roadway/Transit Improvements

- Please provide details of any planned roadway/transit improvement in the study area.

Analysis Procedures

- Given the residential nature of the development, weekday AM and PM peak hours will be analyzed using the Synchro 11.0 analysis package and Highway Capacity Manual (HCM) procedures.

Could you please provide any comments you may have on the above ToR and provide the following information for inclusion in the study:

- Please confirm the use of the 2019 turning movement count data is sufficient.
- Please confirm the proposed study network and horizon years.
- Please provide details of any planned roadway/transit improvement in the study area within the horizon years.
- Please confirm the proposed growth rate on Thomas Street.
- Please confirm the signal timing plan for signalized intersections.
- Please confirm the proposed background developments.


I hope the above is acceptable. Should you have any questions or concerns, please feel free to contact me.

Regards,

Ian

Ian Lindley, M.A.Sc., P.Eng.
Project Engineer, Transportation
55 Wyndham Street North, Suite 215 | Guelph, ON N1H 7T8
T: 548.708.0022



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From: Evan Pu <Evan.Pu@mississauga.ca>
Sent: Friday, September 8, 2023 1:50 PM
To: Aarzo Dhanani; Parkingstudy Review
Cc: Brandon Bradt
Subject: RE: Parking Justification Study Terms of Reference - (CFC#1419-4679) 66 Thomas Street

Aarzo,

Thanks for contacting us regarding your development proposal.

The City's parking Terms of Reference requires a Parking Utilization Study to be completed as long as the parking variance is greater than 10%.

Given that the visitor parking deficiency is at 45%, which is considered quite high, a PUS is necessary in this case.

Please continue to refer to parking ToR for guidance and instructions on how the proxy sites should be selected and how the survey should be done.

Thank you,



Evan Pu

Transportation Planner, Municipal Parking
T 905-615-3200 ext. 4705
evan.pu@mississauga.ca

[City of Mississauga](#) | Transportation and Works Department,
Traffic Management and Municipal Parking Division | Municipal Parking Section

From: Aarzo Dhanani <adhanani@cfcrozier.ca>
Sent: Tuesday, September 5, 2023 9:23
To: Parkingstudy Review <Parkingstudy.Review@mississauga.ca>; Evan Pu <Evan.Pu@mississauga.ca>
Cc: Brandon Bradt <bbradt@cfcrozier.ca>
Subject: RE: Parking Justification Study Terms of Reference - (CFC#1419-4679) 66 Thomas Street

Hey Evan,

Hope you had a nice long weekend!

Could you kindly take a moment to look over the Term of Reference provided below and let me know when we might expect your response?

Best Regards,

Aarzo

Aarzo Dhanani, M.Eng., EIT
Engineering Intern, Transportation
Office: 416.477.3392
Collingwood | Milton | Toronto | Bradford | Guelph

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From: Aarzo Dhanani
Sent: Tuesday, August 22, 2023 2:22 PM
To: Parkingstudy Review <Parkingstudy.Review@mississauga.ca>
Cc: Brandon Bradt <bbradt@cfcrozier.ca>
Subject: RE: Parking Justification Study Terms of Reference - (CFC#1419-4679) 66 Thomas Street

Hello,

I am following up to see if you are in receipt of this ToR.

Hoping you can confirm our scope of study, and please let us know if you any questions!

Kind Regards,

Aarzo

From: Aarzo Dhanani
Sent: Monday, August 14, 2023 9:25 AM
To: Parkingstudy Review <Parkingstudy.Review@mississauga.ca>
Cc: Brandon Bradt <bbradt@cfcrozier.ca>
Subject: Parking Justification Study Terms of Reference - (CFC#1419-4679) 66 Thomas Street

Hello,

We are kindly requesting you to review the following Terms of Reference for our Parking Justification Study in support of the residential development located at 66 Thomas Street, Mississauga, Region of Peel.

Site Description

The subject lands cover an area of approximately 2.77 ha and currently consist of commercial property, a paved parking lot and storage areas. The site is located in a mixed commercial and residential neighborhood and is bounded by commercial developments and mullet creek to the east, Thomas Street to the South, Joymar Drive and residential developments to the west and Tannery Street to the South. The site is located just north-west of the intersection of Thomas Street and Streetsville Go Parking lot entrance and is approximately only a 7–8-minute walk from the Streetsville Go Station.

The development site includes:

- A total of 823 residential units in two high-rise and one mid-rise residential towers connected by 5-storey podium consisting of approximately 49,778 square metre of gross floor area.
- At-grade parking and three levels of underground parking consisting of a total of 791 parking spaces (15 at-grade and 776 underground parking spaces).
- Site Access via Tannery Street and Joymar Drive.

The parking supply proposed for the development is shown below:

Required Parking Ratio (Precinct 2 Rates)	Proposed Parking Ratio	Surplus/Deficit
Resident:	Resident:	-41 spaces (~5.5% Reduction)
0.9 spaces/unit (741 Spaces)	0.85 spaces/unit (700 Spaces)	
Visitor:	Visitor:	
0.2 spaces/unit (165 Spaces)	0.11 spaces/unit (91 Spaces)	-74 spaces (~45% Reduction)
741+165	~791 spaces	-115 spaces (~13% Reduction)
906 spaces		

Parking Justification Study (PJS)

The parking justification will be prepared in accordance with the City of Mississauga Parking Utilization Studies for Site Specific Applications Terms of Reference and following methodology is proposed to be used as part of the study:

- Review the minimum vehicle and bicycle parking requirements for the residential space proposed at the site per the City of Mississauga’s Zoning By-Law and compare the requirements with the proposed supply.
- Forecast the peak parking demand at the site based on the ITE Parking Generation Manual 5th Edition to use as a North American average benchmark.
- Identify and compare the site to any recently approved/proposed developments within Mississauga that include a similar land use context. We recommend the below developments for inclusion within our scope of review:

- **180 Rutledge Road** consisting of approximate 133 residential units located approximately 1.2 km from Streetsville Go station. The Committee of Adjustment approved visitor parking rate of **0.10** spaces/unit. The development is situated on northwest corner of the intersection of Tannery Street and Rutledge Road and is within 80 metres of the subject site.
 - **5081 Hurontario Street** consisting of 3 buildings ranging from 21 to 42 storeys with a total of 1,252 dwelling units located approximately 4.1 km from Cooksville Go Station and 250 metres to the upcoming Hurontario LRT stop. The Zoning By-Law exception approves development of a residential rate of **0.80** spaces/unit.
 - **189 Dundas Street West** consisting of 3 buildings ranging from 18 to 32 storeys with a total of 966 residential units and 531 square metre of retail area located approximately 600 metres from Hurontario LRT stop and 1.2 km from Cooksville GO Station. The development proposes residential rate of **0.75** spaces/unit.
 - **28 Ann Street** consisting of 359 residential units located near Port Credit GO Station. Council approved a residential rate of **0.57** spaces/unit for 1-Bed, **0.73** spaces/unit for 2-Bed and the visitor rate of **0.10** spaces/unit.
- Identify and compare Zoning-By Law rates with other municipalities within the GTA.
 - Identify previous conducted parking utilization surveys for residential developments within Mississauga and the GTHA to determine peak parking demand on the subject site. We recommend using proxy surveys conducted by BA Group and LEA Consulting for their respective parking justification studies at sites with similar conditions as shown below:
 - **4011 Brickstone Mews and 510 Curren Place** consisting of approximately 1,008 units. The site is 2.9 km to Cooksville GO Station and 1.6 km to Hurontario LRT. The peak residential parking rate observed at site was **0.78** on Wednesday, Thursday, Friday, and Monday night in February 2020.
 - **1055 Bloor Street** consisting of 17 storey rental apartment building with a total of 323 units located approximately 2.4 km from Dixie GO Station. The peak visitor parking rate observed at site was **0.04** on Thursday and Friday night in October 2019.
 - Identify Transportation Demand Management (TDM) opportunities available at the site to assess potential site-specific measures that may be used to further support a reduced parking supply.
 - Based on the findings, confirm the adequacy of the proposed parking supply to support the development.
 - Document all analysis and recommendations in a Parking Justification for submission to the City of Mississauga.

Based on the City of Mississauga Terms of Reference guidelines for parking studies, it has been concluded that a parking utilization study is not required in this instance. This is based on the fact that

the overall proposed reduction is only 13% which is considered relatively minor given the 10% threshold for parking justification study. The reduction in residential parking is only 5.5%, which falls well below the stipulated threshold. Additionally, the proposed visitor parking supply of 0.11 spaces per unit is based on the precedent set by the property located at 180 Rutledge Road.

It's important to note that the subject property is in closer proximity to the GO Station compared to the site at 180 Rutledge Road. As a result, it is firmly believed that the provided rationale for parking, combined with the implementation of substantial Transportation Demand Management (TDM) strategies, will effectively address any concerns related to parking availability.

I hope the proposed scope and workplan are acceptable. Should you have any questions of concerns, please feel free to let me know.

Kind regards,

Aarzo Dhanani

From: Tyler Xuereb <Tyler.Xuereb@mississauga.ca>
Sent: Thursday, June 1, 2023 10:14 AM
To: Aarzo Dhanani
Subject: RE: Traffic Growth Rate Request - 66 Thomas Street (CFC #1419-4679)

Good Morning Aarzo,

Below are the recommended growth rates to be used along Thomas Street for your Study. These rates are compounded annually from existing to 2028.

Thomas Street

	Compounded Annual Growth from Existing to 2028	
	EB	WB
AM Peak	0.5%	0.5%
PM Peak	0.5%	0.5%

Regards,



Tyler Xuereb

Transportation Planning Analyst
T 905-615-3200 ext.4783
Tyler.xuereb@mississauga.ca

[City of Mississauga](#) | Transportation and Works Department,
Infrastructure Planning and Engineering Services Division

Please consider the environment before printing.

From: Aarzo Dhanani <adhanani@cfcrozier.ca>
Sent: Tuesday, May 30, 2023 3:54 PM
To: Tyler Xuereb <Tyler.Xuereb@mississauga.ca>
Subject: Traffic Growth Rate Request - 66 Thomas Street (CFC #1419-4679)

Hey Tyler,

Hope all is well!

I am looking to see if you can provide growth rate for Thomas Street for the site located at 66 Thomas Street in the City of Mississauga for the horizon year 2028.


I have attached the approved Terms of Reference for the development by the City.

Let me know if you have any concerns!

Kind Regards,
Aarzo

Aarzo Dhanani, M.Eng., EIT
Engineering Intern, Transportation
211 Yonge Street, Suite 600 | Toronto, ON M5B 1M4
T: 416.477.3392



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From: Evan Pu <Evan.Pu@mississauga.ca>
Sent: Friday, September 8, 2023 1:50 PM
To: Aarzo Dhanani; Parkingstudy Review
Cc: Brandon Bradt
Subject: RE: Parking Justification Study Terms of Reference - (CFC#1419-4679) 66 Thomas Street

Aarzo,

Thanks for contacting us regarding your development proposal.

The City's parking Terms of Reference requires a Parking Utilization Study to be completed as long as the parking variance is greater than 10%.

Given that the visitor parking deficiency is at 45%, which is considered quite high, a PUS is necessary in this case.

Please continue to refer to parking ToR for guidance and instructions on how the proxy sites should be selected and how the survey should be done.

Thank you,



Evan Pu

Transportation Planner, Municipal Parking
T 905-615-3200 ext. 4705
evan.pu@mississauga.ca

[City of Mississauga](#) | Transportation and Works Department,
Traffic Management and Municipal Parking Division | Municipal Parking Section

From: Aarzo Dhanani <adhanani@cfcrozier.ca>
Sent: Tuesday, September 5, 2023 9:23
To: Parkingstudy Review <Parkingstudy.Review@mississauga.ca>; Evan Pu <Evan.Pu@mississauga.ca>
Cc: Brandon Bradt <bbradt@cfcrozier.ca>
Subject: RE: Parking Justification Study Terms of Reference - (CFC#1419-4679) 66 Thomas Street

Hey Evan,

Hope you had a nice long weekend!

Could you kindly take a moment to look over the Term of Reference provided below and let me know when we might expect your response?

Best Regards,

Aarzo

Aarzo Dhanani, M.Eng., EIT
Engineering Intern, Transportation
Office: 416.477.3392
Collingwood | Milton | Toronto | Bradford | Guelph

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From: Aarzo Dhanani
Sent: Tuesday, August 22, 2023 2:22 PM
To: Parkingstudy Review <Parkingstudy.Review@mississauga.ca>
Cc: Brandon Bradt <bbradt@cfcrozier.ca>
Subject: RE: Parking Justification Study Terms of Reference - (CFC#1419-4679) 66 Thomas Street

Hello,

I am following up to see if you are in receipt of this ToR.

Hoping you can confirm our scope of study, and please let us know if you any questions!

Kind Regards,

Aarzo

From: Aarzo Dhanani
Sent: Monday, August 14, 2023 9:25 AM
To: Parkingstudy Review <Parkingstudy.Review@mississauga.ca>
Cc: Brandon Bradt <bbradt@cfcrozier.ca>
Subject: Parking Justification Study Terms of Reference - (CFC#1419-4679) 66 Thomas Street

Hello,

We are kindly requesting you to review the following Terms of Reference for our Parking Justification Study in support of the residential development located at 66 Thomas Street, Mississauga, Region of Peel.

Site Description

The subject lands cover an area of approximately 2.77 ha and currently consist of commercial property, a paved parking lot and storage areas. The site is located in a mixed commercial and residential neighborhood and is bounded by commercial developments and mullet creek to the east, Thomas Street to the South, Joymar Drive and residential developments to the west and Tannery Street to the South. The site is located just north-west of the intersection of Thomas Street and Streetsville Go Parking lot entrance and is approximately only a 7–8-minute walk from the Streetsville Go Station.

The development site includes:

- A total of 823 residential units in two high-rise and one mid-rise residential towers connected by 5-storey podium consisting of approximately 49,778 square metre of gross floor area.
- At-grade parking and three levels of underground parking consisting of a total of 791 parking spaces (15 at-grade and 776 underground parking spaces).
- Site Access via Tannery Street and Joymar Drive.

The parking supply proposed for the development is shown below:

Required Parking Ratio (Precinct 2 Rates)	Proposed Parking Ratio	Surplus/Deficit
Resident:	Resident:	-41 spaces (~5.5% Reduction)
0.9 spaces/unit (741 Spaces)	0.85 spaces/unit (700 Spaces)	
Visitor:	Visitor:	
0.2 spaces/unit (165 Spaces)	0.11 spaces/unit (91 Spaces)	-74 spaces (~45% Reduction)
741+165	~791 spaces	-115 spaces (~13% Reduction)
906 spaces		

Parking Justification Study (PJS)

The parking justification will be prepared in accordance with the City of Mississauga Parking Utilization Studies for Site Specific Applications Terms of Reference and following methodology is proposed to be used as part of the study:

- Review the minimum vehicle and bicycle parking requirements for the residential space proposed at the site per the City of Mississauga’s Zoning By-Law and compare the requirements with the proposed supply.
- Forecast the peak parking demand at the site based on the ITE Parking Generation Manual 5th Edition to use as a North American average benchmark.
- Identify and compare the site to any recently approved/proposed developments within Mississauga that include a similar land use context. We recommend the below developments for inclusion within our scope of review:

- **180 Rutledge Road** consisting of approximate 133 residential units located approximately 1.2 km from Streetsville Go station. The Committee of Adjustment approved visitor parking rate of **0.10** spaces/unit. The development is situated on northwest corner of the intersection of Tannery Street and Rutledge Road and is within 80 metres of the subject site.
 - **5081 Hurontario Street** consisting of 3 buildings ranging from 21 to 42 storeys with a total of 1,252 dwelling units located approximately 4.1 km from Cooksville Go Station and 250 metres to the upcoming Hurontario LRT stop. The Zoning By-Law exception approves development of a residential rate of **0.80** spaces/unit.
 - **189 Dundas Street West** consisting of 3 buildings ranging from 18 to 32 storeys with a total of 966 residential units and 531 square metre of retail area located approximately 600 metres from Hurontario LRT stop and 1.2 km from Cooksville GO Station. The development proposes residential rate of **0.75** spaces/unit.
 - **28 Ann Street** consisting of 359 residential units located near Port Credit GO Station. Council approved a residential rate of **0.57** spaces/unit for 1-Bed, **0.73** spaces/unit for 2-Bed and the visitor rate of **0.10** spaces/unit.
- Identify and compare Zoning-By Law rates with other municipalities within the GTA.
 - Identify previous conducted parking utilization surveys for residential developments within Mississauga and the GTHA to determine peak parking demand on the subject site. We recommend using proxy surveys conducted by BA Group and LEA Consulting for their respective parking justification studies at sites with similar conditions as shown below:
 - **4011 Brickstone Mews and 510 Curren Place** consisting of approximately 1,008 units. The site is 2.9 km to Cooksville GO Station and 1.6 km to Hurontario LRT. The peak residential parking rate observed at site was **0.78** on Wednesday, Thursday, Friday, and Monday night in February 2020.
 - **1055 Bloor Street** consisting of 17 storey rental apartment building with a total of 323 units located approximately 2.4 km from Dixie GO Station. The peak visitor parking rate observed at site was **0.04** on Thursday and Friday night in October 2019.
 - Identify Transportation Demand Management (TDM) opportunities available at the site to assess potential site-specific measures that may be used to further support a reduced parking supply.
 - Based on the findings, confirm the adequacy of the proposed parking supply to support the development.
 - Document all analysis and recommendations in a Parking Justification for submission to the City of Mississauga.

Based on the City of Mississauga Terms of Reference guidelines for parking studies, it has been concluded that a parking utilization study is not required in this instance. This is based on the fact that

the overall proposed reduction is only 13% which is considered relatively minor given the 10% threshold for parking justification study. The reduction in residential parking is only 5.5%, which falls well below the stipulated threshold. Additionally, the proposed visitor parking supply of 0.11 spaces per unit is based on the precedent set by the property located at 180 Rutledge Road.

It's important to note that the subject property is in closer proximity to the GO Station compared to the site at 180 Rutledge Road. As a result, it is firmly believed that the provided rationale for parking, combined with the implementation of substantial Transportation Demand Management (TDM) strategies, will effectively address any concerns related to parking availability.

I hope the proposed scope and workplan are acceptable. Should you have any questions of concerns, please feel free to let me know.

Kind regards,

Aarzo Dhanani

From: Tyler Xuereb <Tyler.Xuereb@mississauga.ca>
Sent: Thursday, June 1, 2023 10:14 AM
To: Aarzo Dhanani
Subject: RE: Traffic Growth Rate Request - 66 Thomas Street (CFC #1419-4679)

Good Morning Aarzo,

Below are the recommended growth rates to be used along Thomas Street for your Study. These rates are compounded annually from existing to 2028.

Thomas Street

	Compounded Annual Growth from Existing to 2028	
	EB	WB
AM Peak	0.5%	0.5%
PM Peak	0.5%	0.5%

Regards,



Tyler Xuereb

Transportation Planning Analyst
T 905-615-3200 ext.4783
Tyler.xuereb@mississauga.ca

[City of Mississauga](#) | Transportation and Works Department,
Infrastructure Planning and Engineering Services Division

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From: Aarzo Dhanani <adhanani@cfcrozier.ca>
Sent: Tuesday, May 30, 2023 3:54 PM
To: Tyler Xuereb <Tyler.Xuereb@mississauga.ca>
Subject: Traffic Growth Rate Request - 66 Thomas Street (CFC #1419-4679)

Hey Tyler,

Hope all is well!

I am looking to see if you can provide growth rate for Thomas Street for the site located at 66 Thomas Street in the City of Mississauga for the horizon year 2028.


I have attached the approved Terms of Reference for the development by the City.

Let me know if you have any concerns!

Kind Regards,
Aarzo

Aarzo Dhanani, M.Eng., EIT
Engineering Intern, Transportation
211 Yonge Street, Suite 600 | Toronto, ON M5B 1M4
T: 416.477.3392



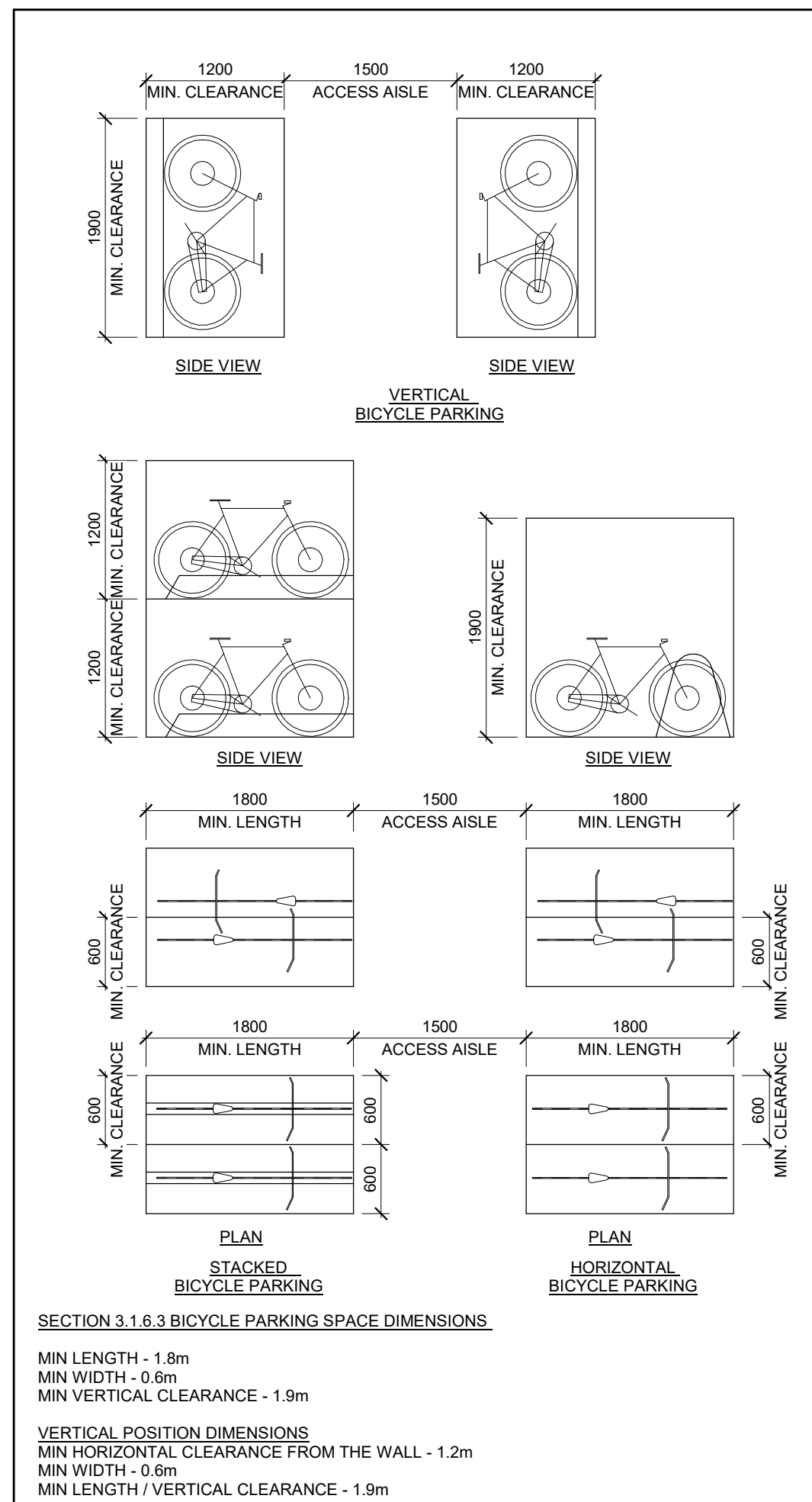
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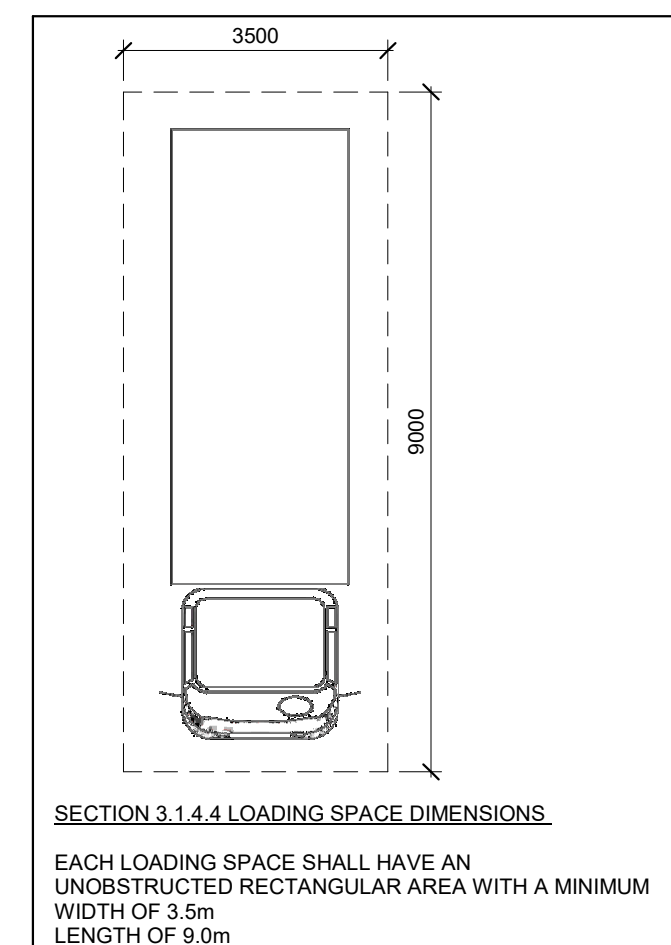
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Appendix B

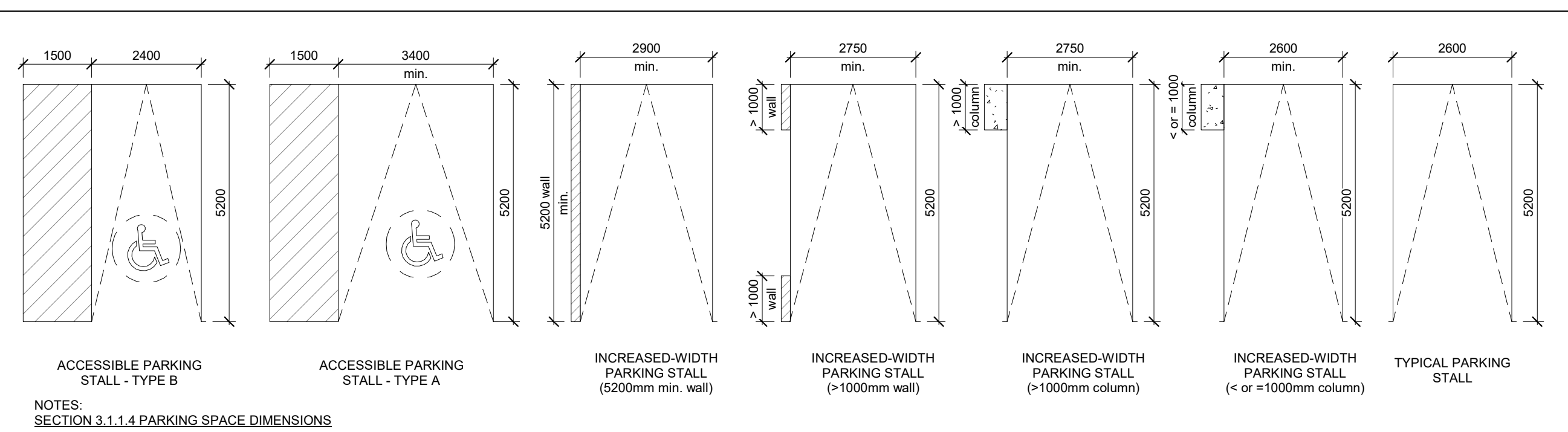
Draft Plans



3 BICYCLE PARKING SPACE DIMENSIONS
1 : 50



1 LOADING DOCK DIMENSIONS
1 : 100



2 PARKING STALL DIMENSIONS
1 : 100

LANDSCAPING DATA	REQUIRED	PROPOSED	PROPOSED (%)
TOTAL LANDSCAPED AREA (m2)	40% OF LOT AREA = 11,110.26 m ²	6,931.08 m ²	25%

LOADING REQUIREMENTS	REQUIRED	PROPOSED	PROPOSED (%)
RESIDENTIAL	1	3	300%

AUTOMOBILE INFRASTRUCTURE	MINIMUM RATE	REQUIRED	PROPOSED	PROPOSED (%)
NUMBER OF RESIDENTIAL PARKING SPACES	0.80 X UNIT	835 (FOR 1043 UNITS)	835	100%
NUMBER OF BARRIER FREE PARKING SPACES (INCLUDES TOTAL PARKING SPACES)	2.0 SPACES + 2% OF THE TOTAL = 19	TYPE A 10 TYPE B 9	TYPE A XX TYPE B XX	XX%
NUMBER OF VISITOR PARKING SPACES	0.15 X UNIT	157	131	83.4%
TOTAL PARKING SPACES		992	966	97.4%

CYCLING INFRASTRUCTURE	MINIMUM RATE	REQUIRED	PROPOSED	PROPOSED (%)
NUMBER OF CLASS A - LONG-TERM BICYCLE PARKING SPACES (RESIDENTIAL)	CLASS A 0.6 SPACES PER UNIT	626	626	100%
NUMBER OF CLASS B - SHORT-TERM BICYCLE PARKING SPACES	CLASS B: THE GREATER OF 0.05 SPACES PER UNIT OR 6 SPACES	53	55	103.8%
TOTAL BICYCLE PARKING SPACES	XX	679	681	100.3%

SHORT-TERM BICYCLE PARKING	MINIMUM RATE	REQUIRED	PROPOSED	PROPOSED (%)
PHASE 1 (TOWER A)	CLASS B: THE GREATER OF 0.05 SPACES PER UNIT OR 6 SPACES	11	12	109%
PHASE 2A (NORTH BUILDING PODIUM)		9	9	100%
PHASE 2B (NORTH BUILDING PODIUM)		9	9	100%
PHASE 3 (SOUTH BUILDING)		11	12	109%
PHASE 4 (TOWER B)		13	13	100%
TOTAL COUNT		53	55	103.8%

UNITS DATA - ENTIRE DEVELOPMENT					
TYPE	# OF UNITS	AREA		AVERAGE UNIT SIZE(±ft)	PERCENTAGE
		sqm.	sqft.		
STUDIO	30	982.93	10580.17	353	3%
1 BED	565	26002.27	279886.1	493	54%
1 BED + D	116	6262.25	67406.30	581	11%
2 BED	214	14662.83	157829.39	738	21%
2 BED + D	66	5309.99	57156.26	866	6%
3 BED	52	4029.79	43376.30	834	5%
	1043	57250.06	616234.52		

SITE AND ZONING STATISTICS
1 : 2

GENERAL SITE DESCRIPTION	
NAME OF PROJECT	JOYMAR DRIVE & TANNERY ST, MISSISSAUGA
MUNICIPAL ADDRESS	95 JOYMAR DR
ZONING BY LAW	RA5
ZONING DESIGNATION	D
OBC BUILDING CLASSIFICATION	C (3.2.2.42)

BUILDING DATA	REQUIRED	PROPOSED	PROPOSED (%)
BUILDING COVERAGE AREA	---	7,230 m ² (1.78 a)	---
LOT AREA A (Environmental)	---	12,527.541 m ² (3.10 a)	---
LOT AREA B (Development)	---	14,832.251 m ² (1.48 ha)(3.7 a)	---
LOT AREA C (Road widening, etc)	---	415.851 m ² (0.10 a)	---
TOTAL LOT AREA (A+B+C)	---	27,775.64 m ² (2.78 ha)(6.86 a)	---
DEVELOPABLE LOT FRONTAGE	---	275.37 m	---
DEVELOPABLE LOT DEPTH	---	70.25m (max) 45.32m (min)	---
DENSITY	---	1043 UNITS	---
GROSS FLOOR AREA(EXCLUDING UG PARKING) (m ²)	---	72,588.01 m ²	---
UNDERGROUND PARKING AREA (m ²)	---	42,284.62 m ²	---

SETBACKS	REQUIRED	PROPOSED	PROPOSED (%)
FRONT YARD (m)	30	4.5	---
INTERIOR SIDE YARD (m)	9	4.5	---
EXTERIOR SIDE YARD (m)	9	4.5	---
REAR YARD (m)	15	6	---

UNITS COUNT AS PER PHASING	REQUIRED	PROPOSED	PROPOSED (%)
PHASE 1 (TOWER A)	---	209	---
PHASE 2A (NORTH BUILDING PODIUM)	---	180	---
PHASE 2B (NORTH BUILDING PODIUM)	---	188	---
PHASE 3 (SOUTH BUILDING)	---	214	---
PHASE 4 (TOWER B)	---	252	---
TOTAL UNITS COUNT	---	1043	---

PHASE 1 (TOWER A)	REQUIRED	PROPOSED	PROPOSED (%)
NUMBER OF STOREYS	---	18 STOREYS	---
BUILDING HEIGHT (RESIDENTIAL STOREYS) (m)	---	59.40 m	---
RESIDENTIAL AREA (m ²)	---	11,566.78 m ²	---
AMENITY AREA (INDOOR) (m ²)	---	88.01 m ²	---

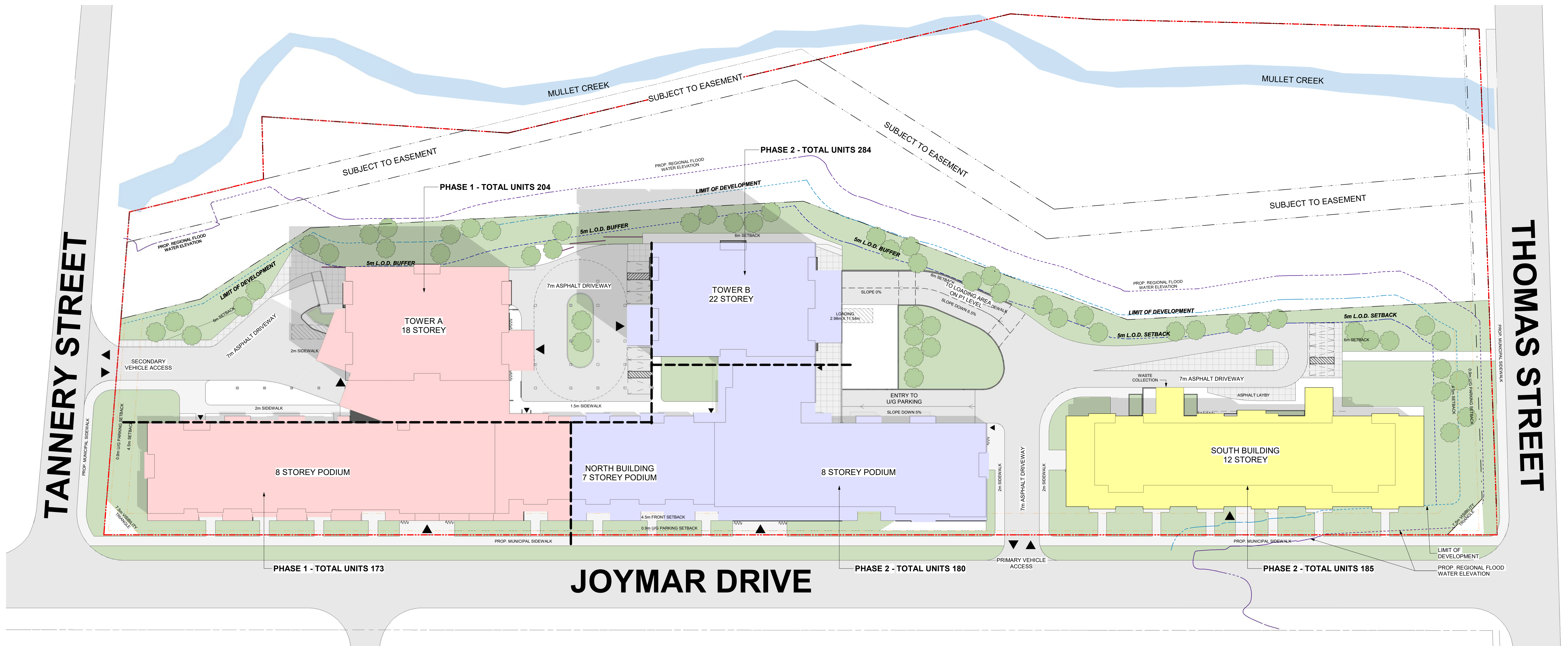
PHASE 1 (NORTH BUILDING PODIUM)	REQUIRED	PROPOSED	PROPOSED (%)
NUMBER OF STOREYS	---	8 STOREYS	---
BUILDING HEIGHT (RESIDENTIAL STOREYS) (m)	---	27.40 m	---
RESIDENTIAL AREA (m ²)	---	9,813.80 m ²	---
AMENITY AREA (INDOOR) (m ²)	---	266.84 m ²	---

PHASE 2 (NORTH BUILDING PODIUM)	REQUIRED	PROPOSED	PROPOSED (%)
NUMBER OF STOREYS	---	8 STOREYS	---
BUILDING HEIGHT (RESIDENTIAL STOREYS) (m)	---	27.40 m	---
RESIDENTIAL AREA (m ²)	---	10,694.61 m ²	---
AMENITY AREA (INDOOR) (m ²)	---	491.97 m ²	---

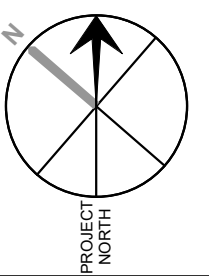
SOUTH BUILDING	REQUIRED	PROPOSED	PROPOSED (%)
NUMBER OF STOREYS	---	12 STOREYS	---
BUILDING HEIGHT (RESIDENTIAL STOREYS) (m)	---	46.70 m	---
RESIDENTIAL AREA (m ²)	---	11,350.35 m ²	---
AMENITY AREA (INDOOR) (m ²)	---	77.37 m ²	---

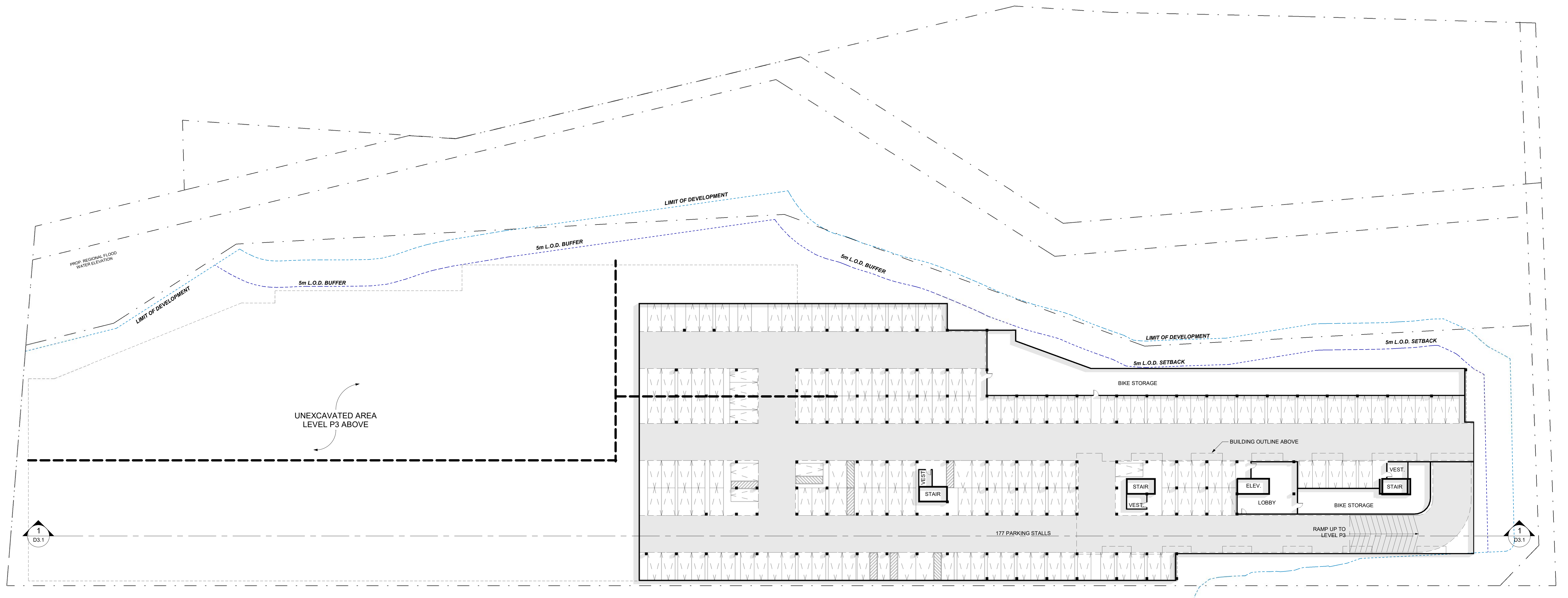
PHASE 2 (TOWER B)	REQUIRED	PROPOSED	PROPOSED (%)
NUMBER OF STOREYS	---	22 STOREYS	---
BUILDING HEIGHT (RESIDENTIAL STOREYS) (m)	---	72.20 m	---
RESIDENTIAL AREA (m ²)	---	13,824.53 m ²	---
AMENITY AREA (INDOOR) (m ²)	---	190.82 m ²	---

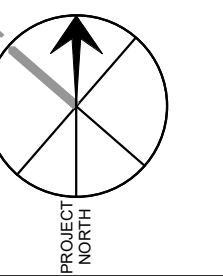
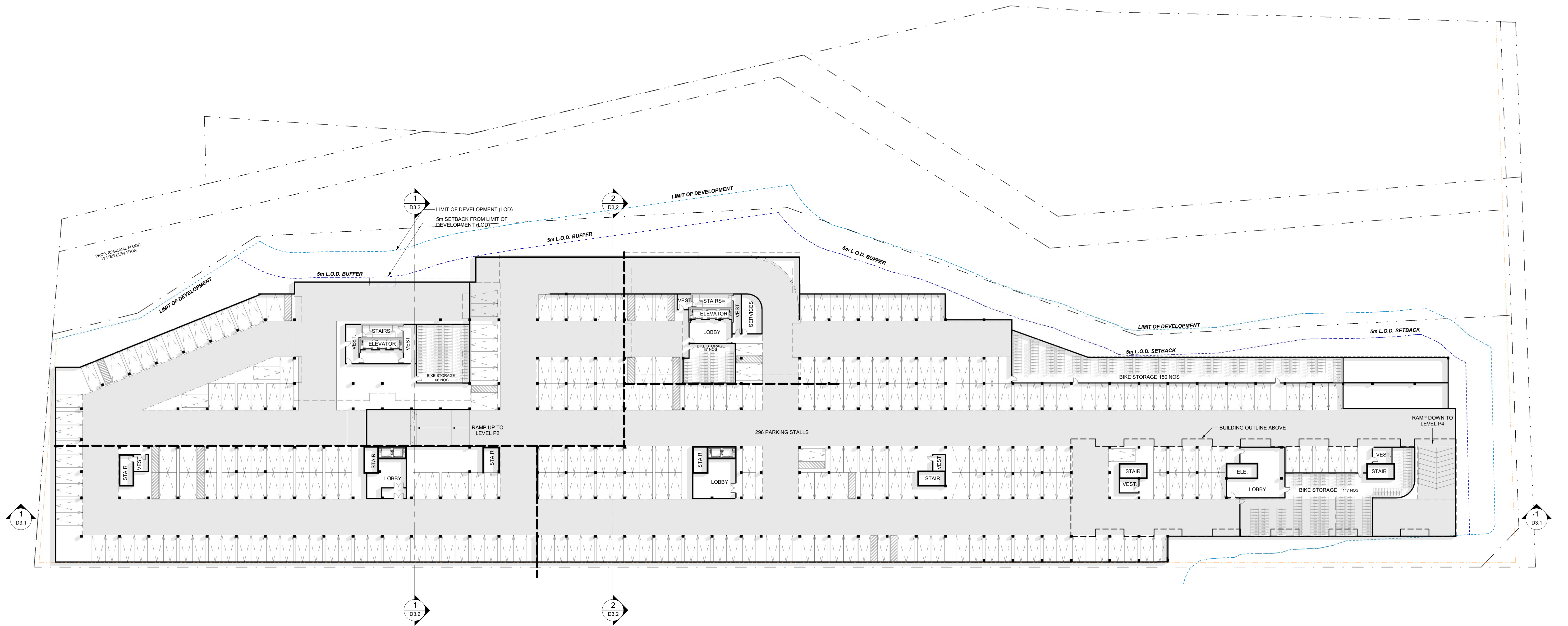
AMENITY AREA REQUIREMENTS	REQUIRED	PROPOSED	PROPOSED (%)
INDOOR AMENITY AREA (m ²)	---	1116 m ²	1.07
OUTDOOR AMENITY AREA (m ²)	---	4082.67 m ²	3.91
TOTAL AMENITY AREA (5.6 m ² / UNIT) (m ²)	5.6*1043 = 5840.8 m ²	5198.67 m ²	4.98

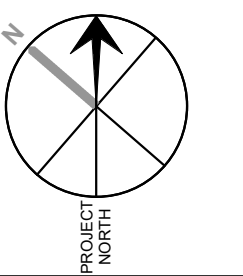
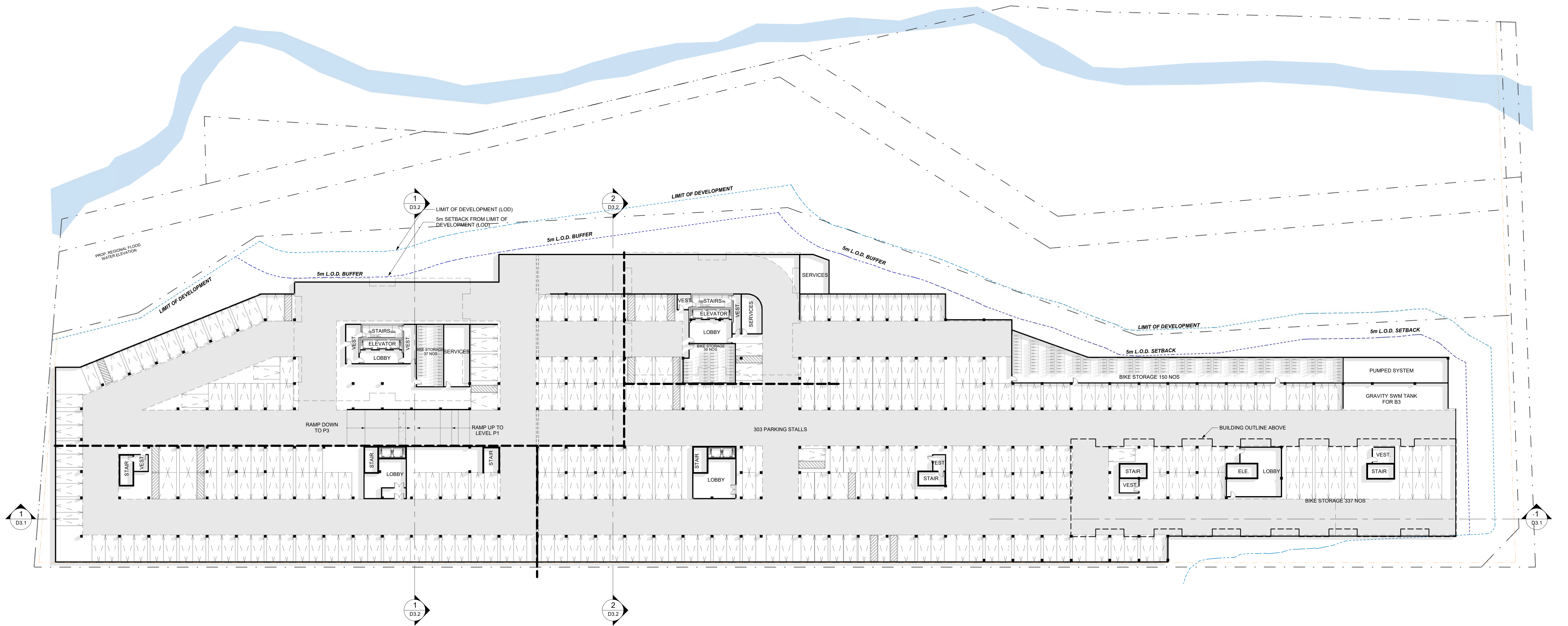


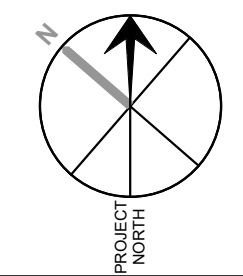
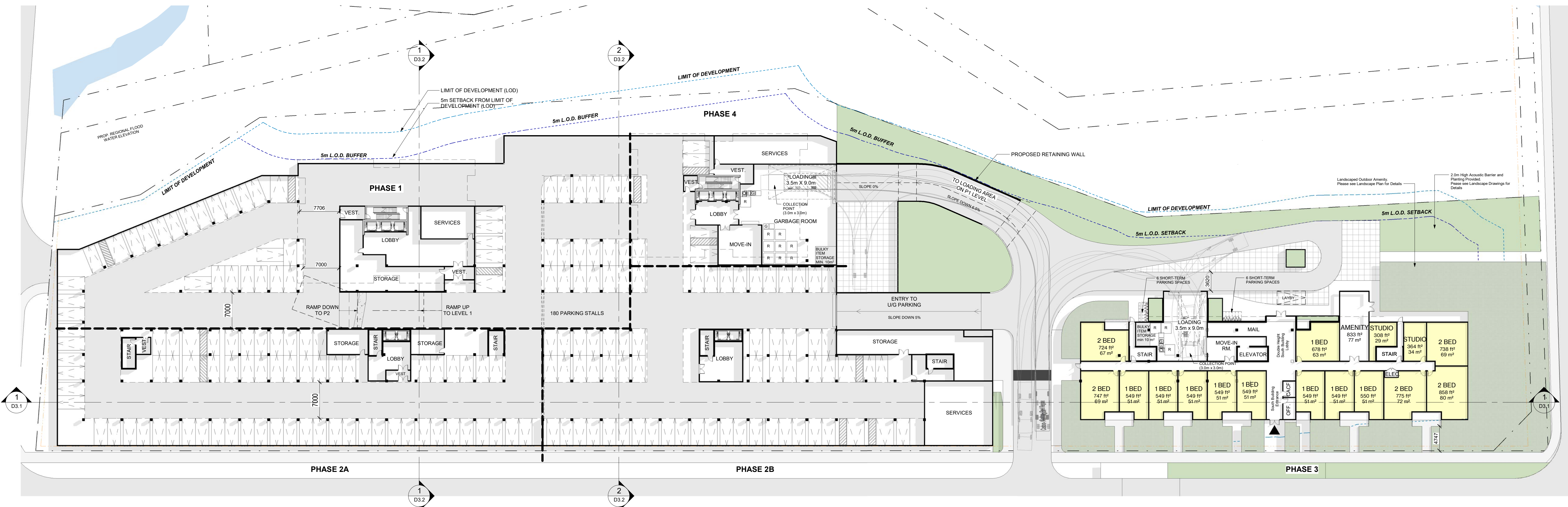
- PHASE 1
- PHASE 2
- SOUTH BUILDING

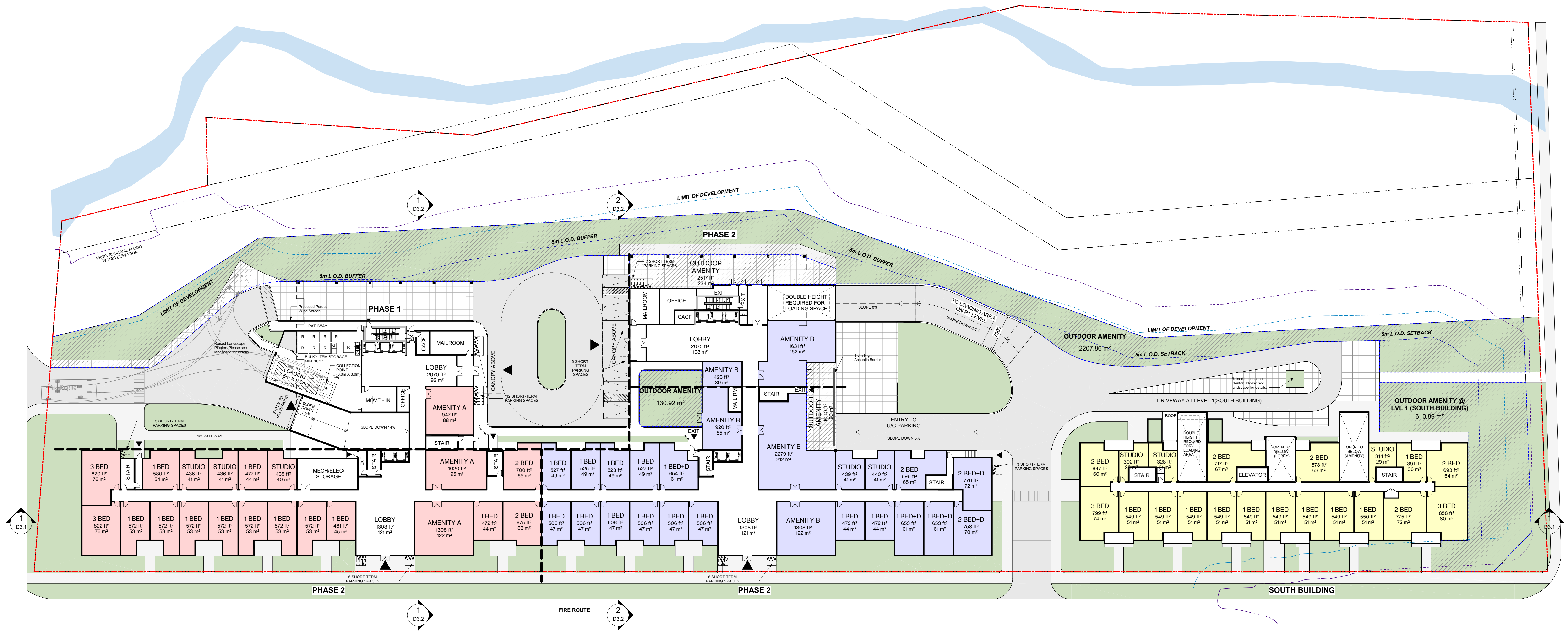








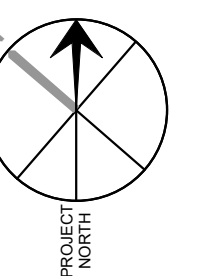




- PHASE 1
- PHASE 2
- SOUTH BUILDING

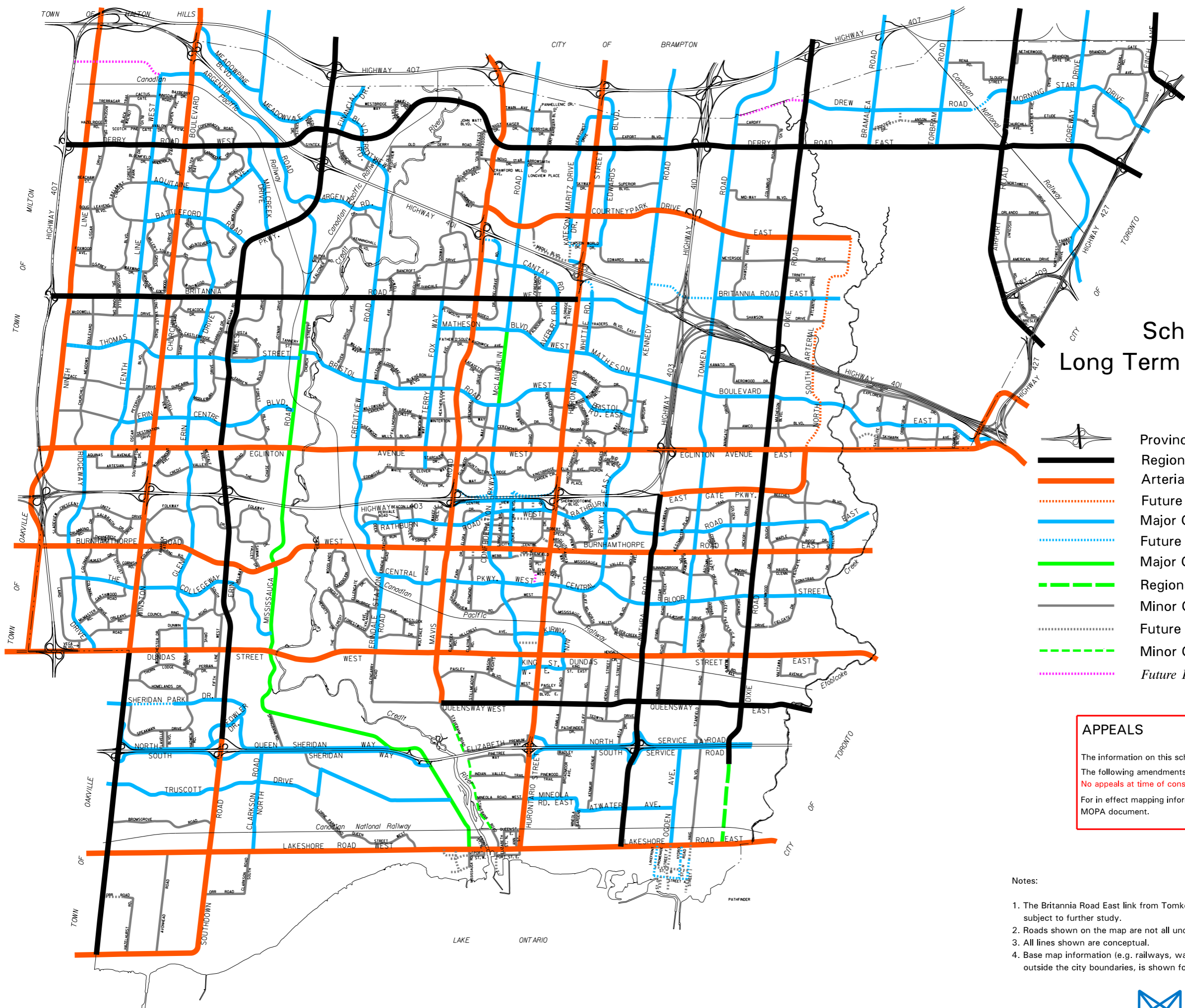
NORTH BUILDING - LEVEL 1

SOUTH BUILDING - LEVEL 2















Appendix C

Official Plan Excerpts



Schedule 5 Long Term Road Network

-  Provincial Highway and Interchange
-  Regional Arterial
-  Arterial
-  Future Arterial (conceptual)
-  Major Collector
-  Future Major Collector (conceptual)
-  Major Collector (Scenic Route)
-  Regional Major Collector (Scenic Route)
-  Minor Collector
-  Future Minor Collector
-  Minor Collector (Scenic Route)
-  Future Road Link to be added.

APPEALS

The information on this schedule reflects Council adopted amendments. The following amendments are under appeal and affect this schedule:
No appeals at time of consolidation.

For in effect mapping information refer to the Consolidation Tables and MOPA document.

- Notes:
1. The Britannia Road East link from Tomken Road to Kennedy Road is conceptual and is subject to further study.
 2. Roads shown on the map are not all under Mississauga jurisdiction.
 3. All lines shown are conceptual.
 4. Base map information (e.g. railways, watercourses), including any lands or bodies of water outside the city boundaries, is shown for information purposes only.

Appendix D

Cycling Master Plan Excerpts



MISSISSAUGA

Cycling Master Plan



Does Cycling
Move You?



2018

Figure 6: Collisions involving bicycles 2010–2013

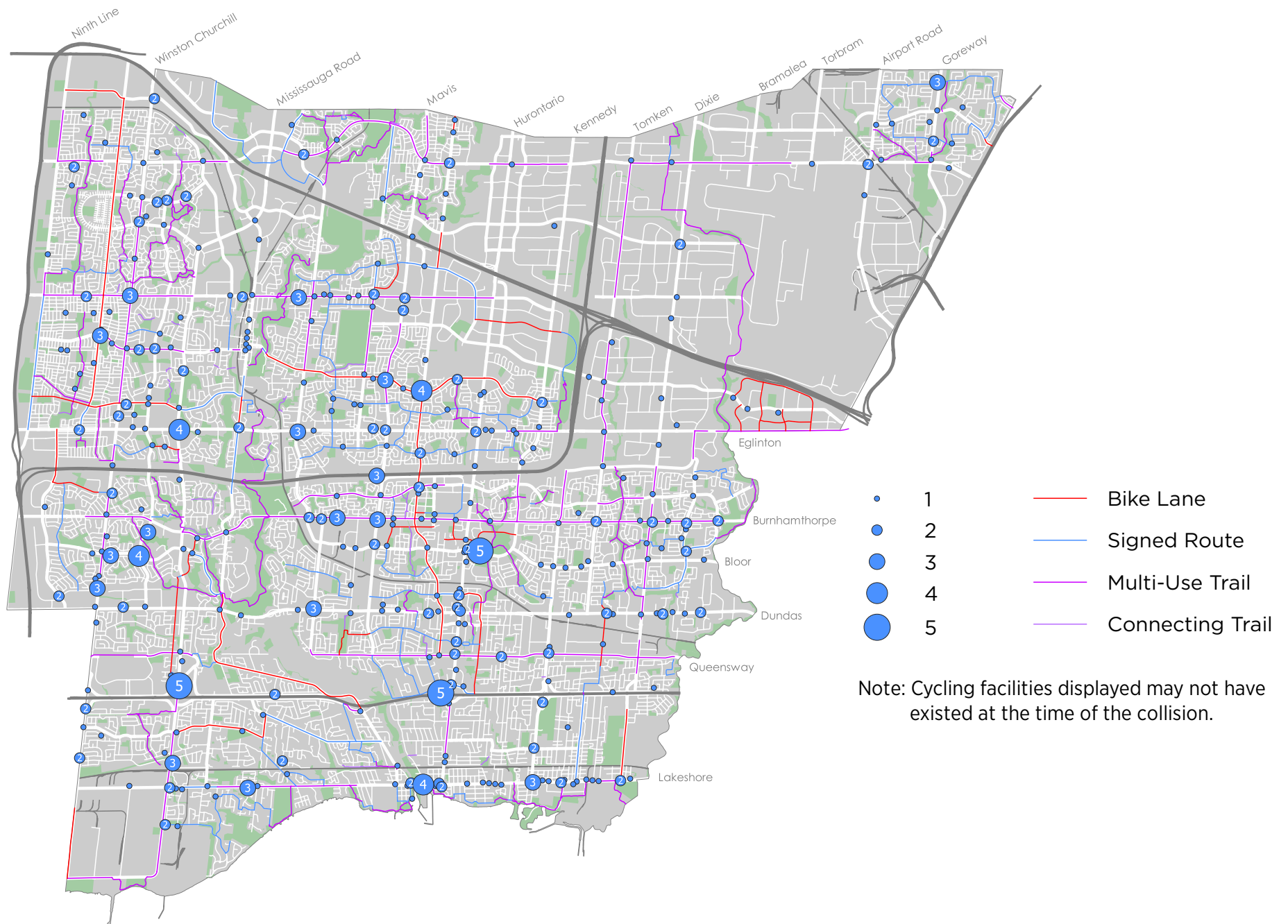


Figure 11: Level of traffic stress of the existing cycling network

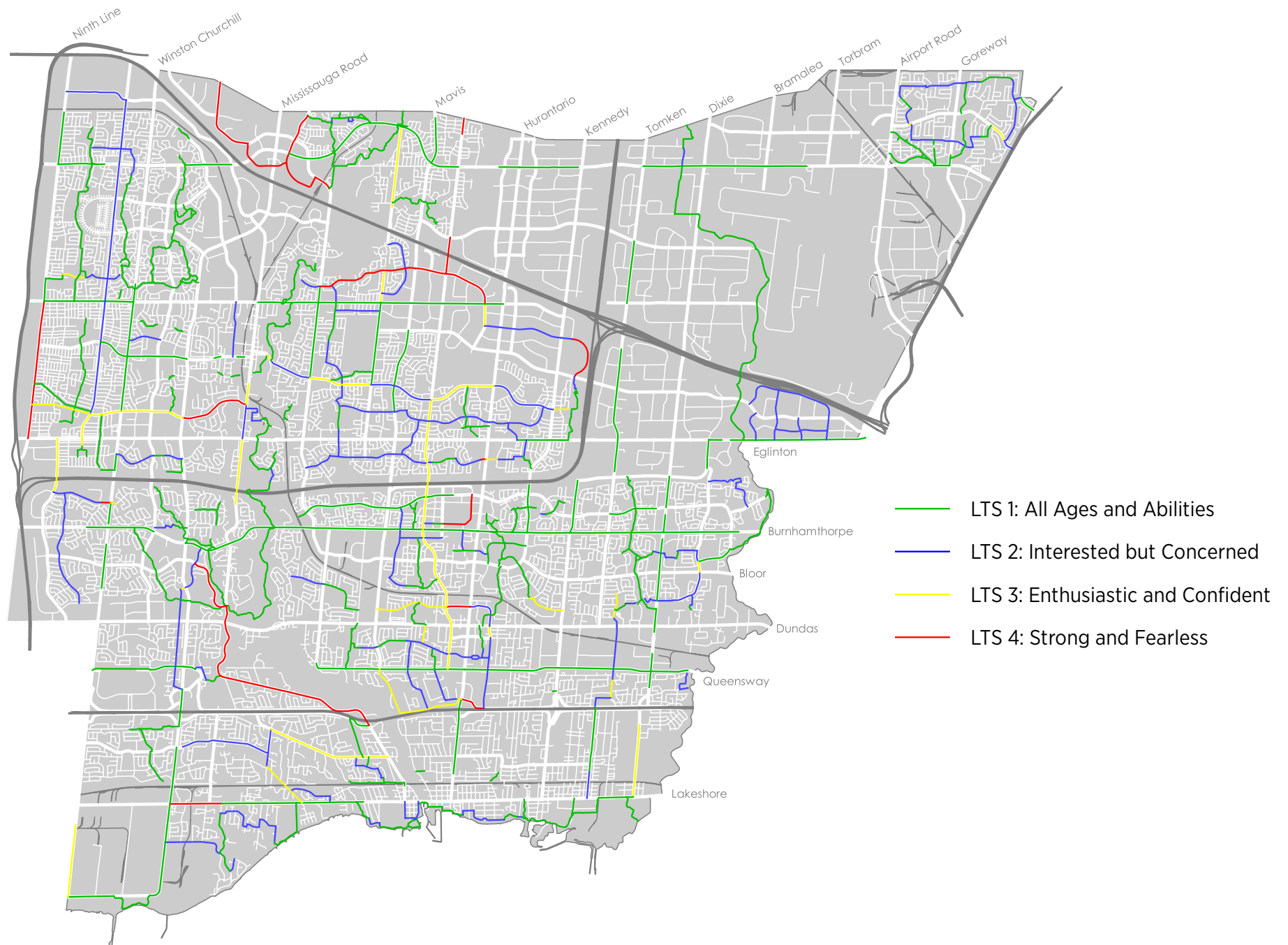


Figure 15: Proposed cycling network

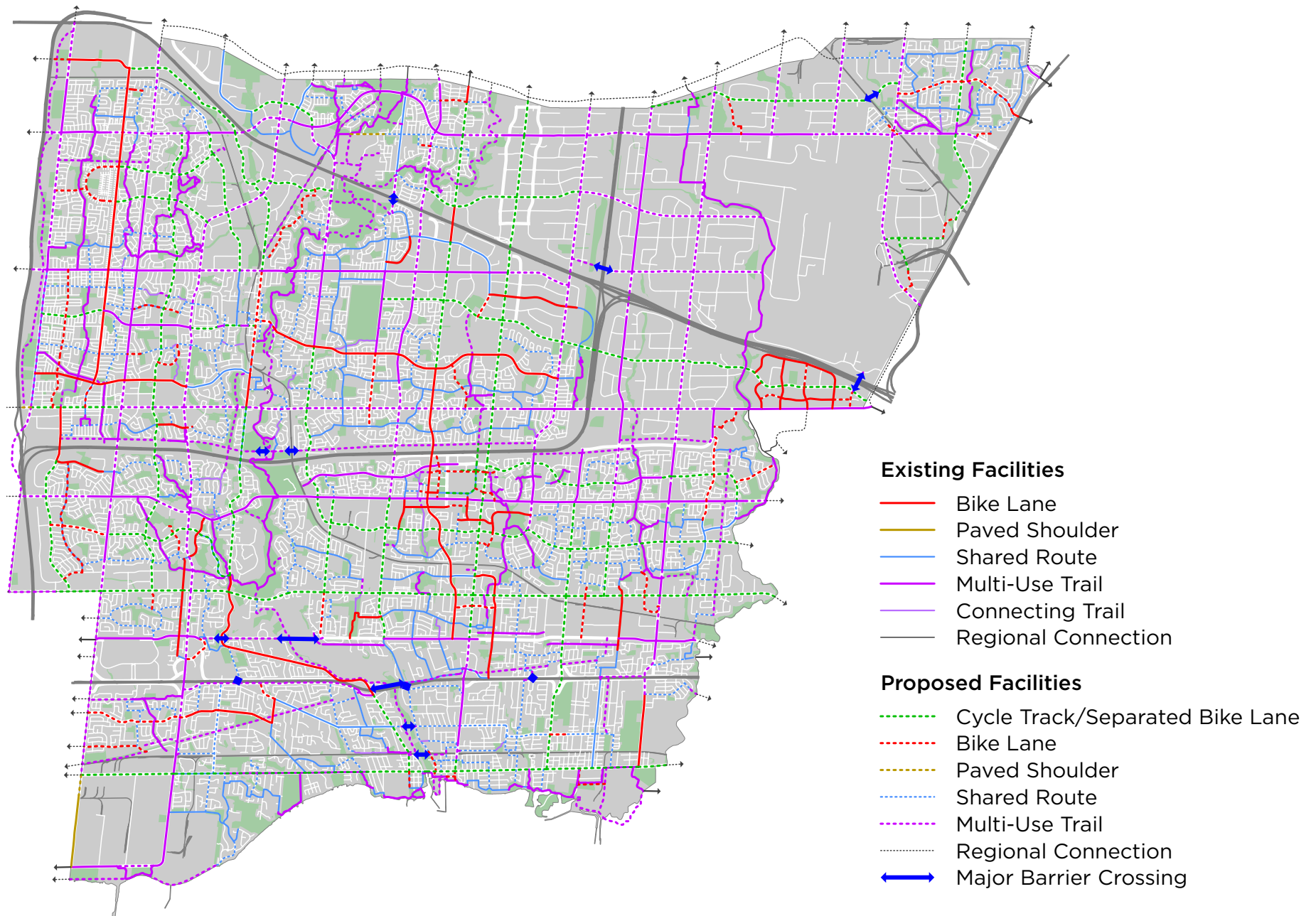


Figure 16: Level of traffic stress of the proposed cycling network

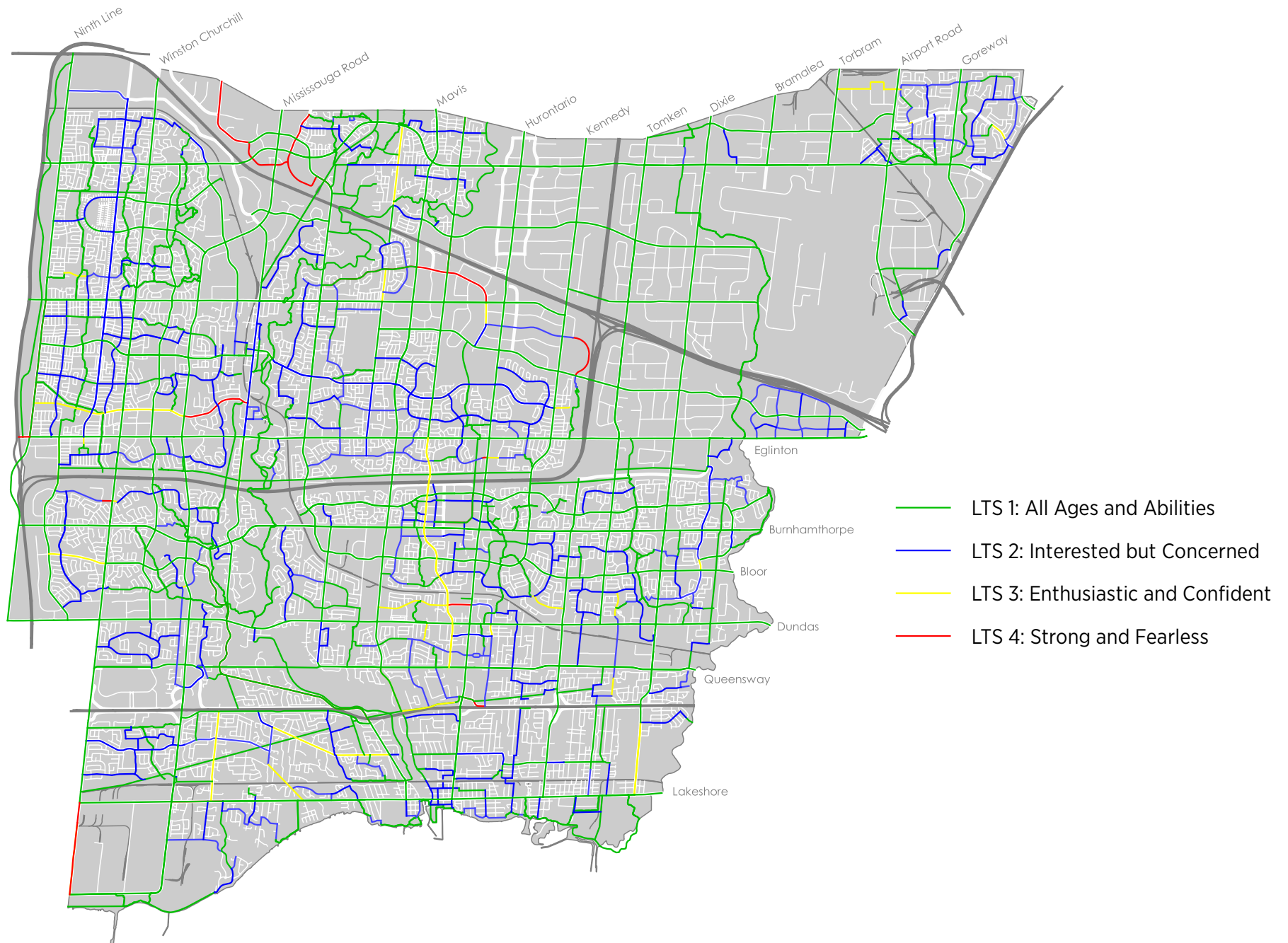


Figure 17: Primary cycling routes

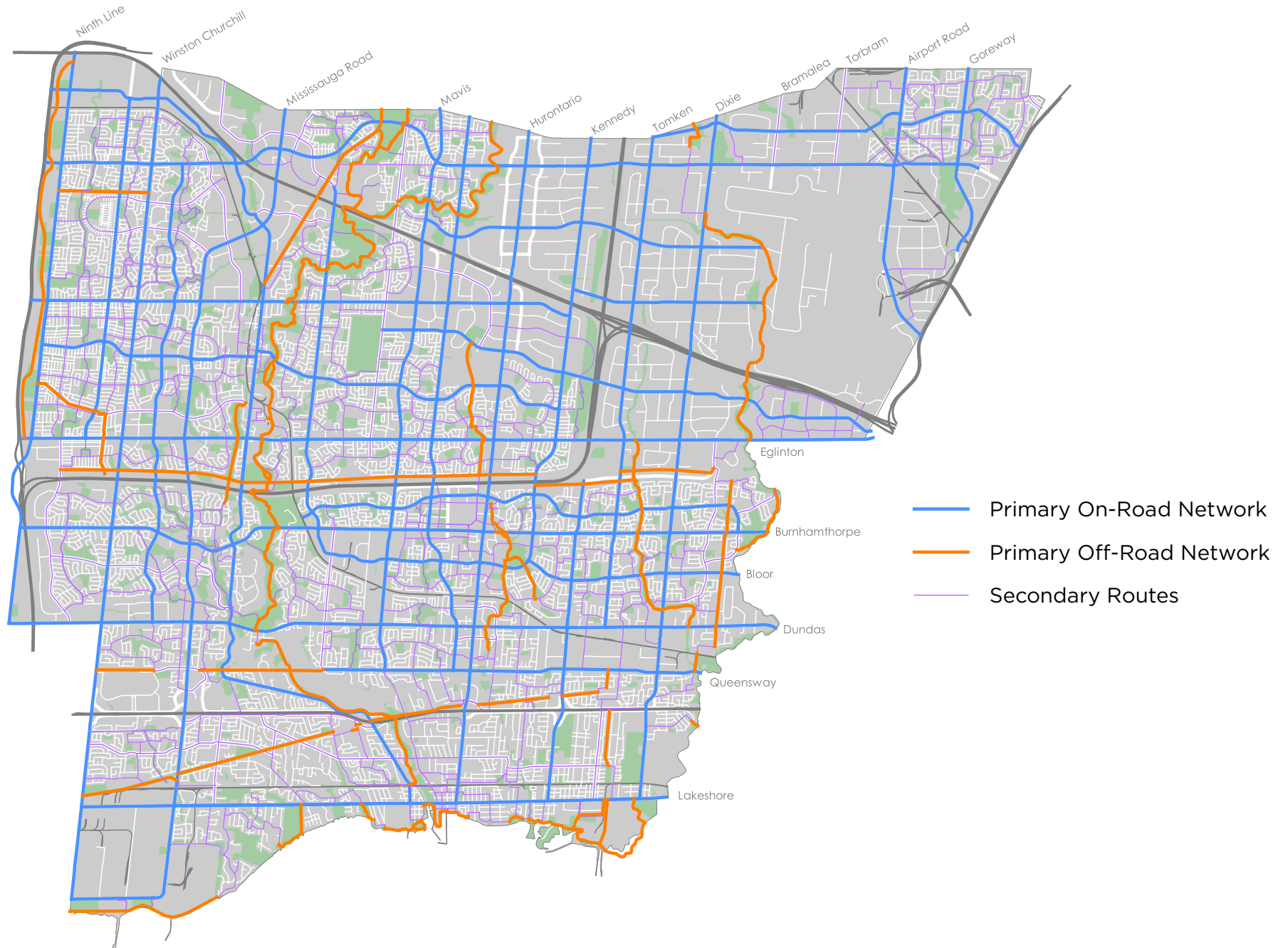


Figure 18: Secondary cycling routes

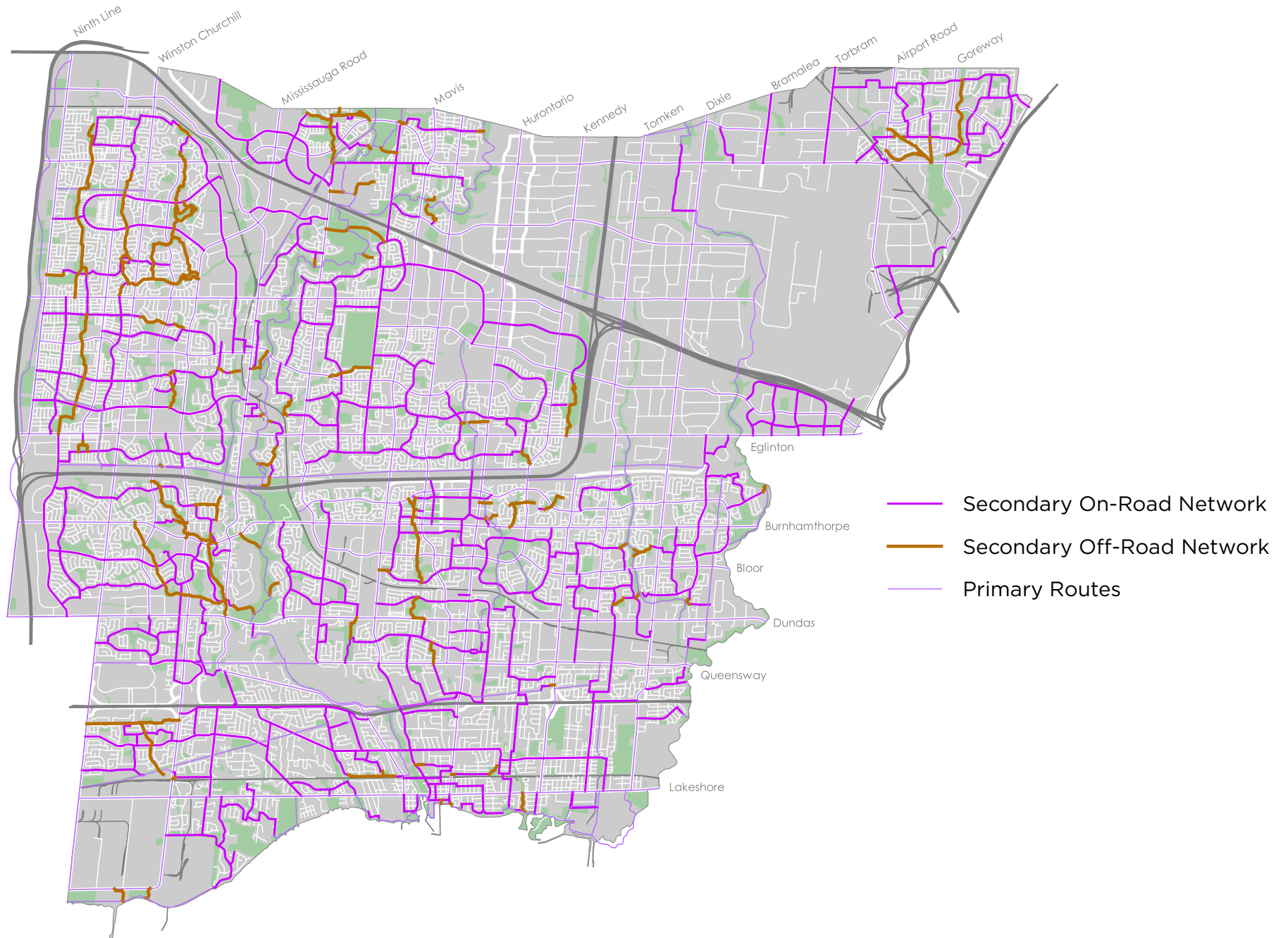


Figure 19: Recommended upgrades to existing cycling network (on-road routes and trails)

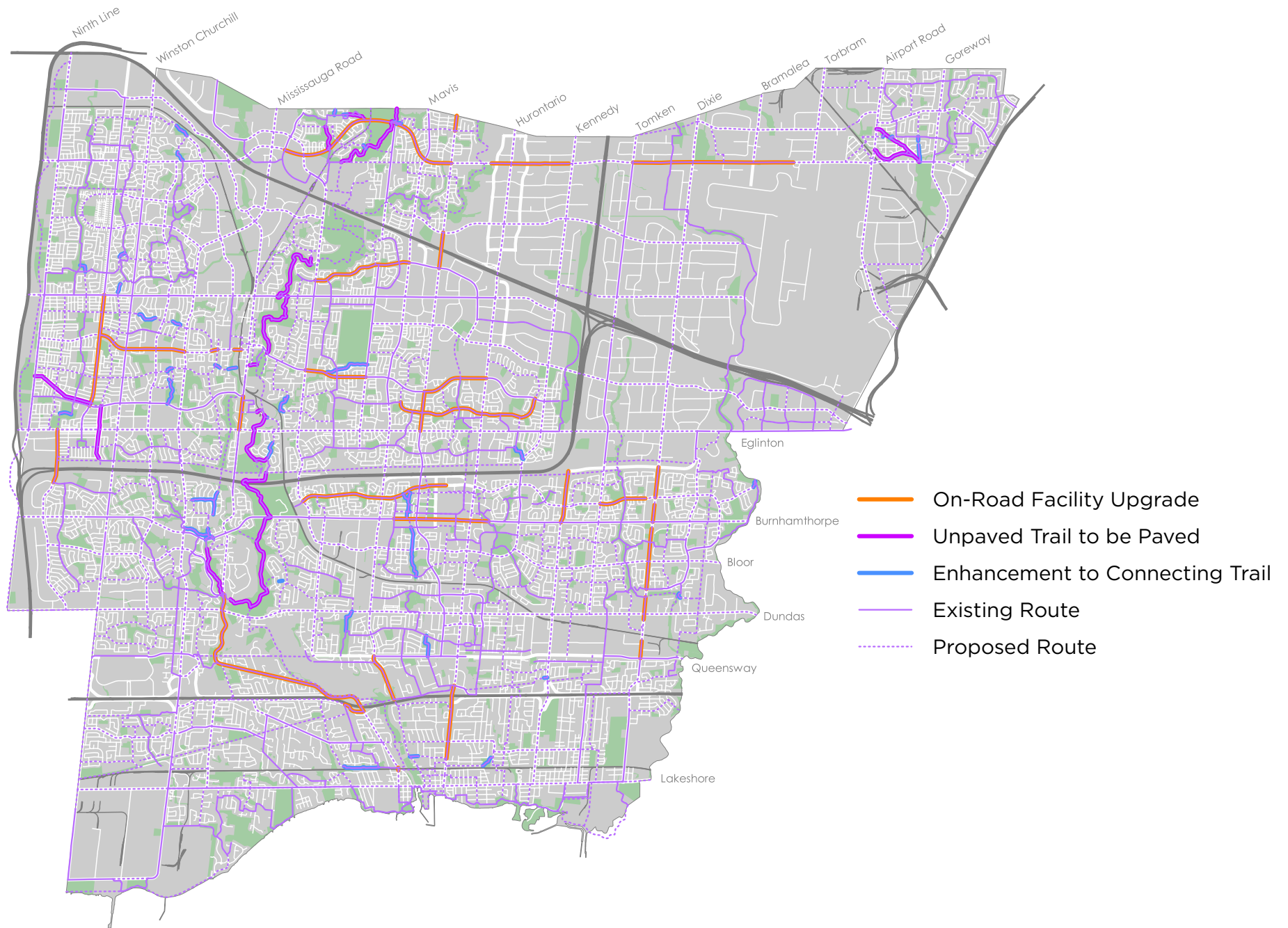


Figure 27: Conceptual bike share service areas in Mississauga

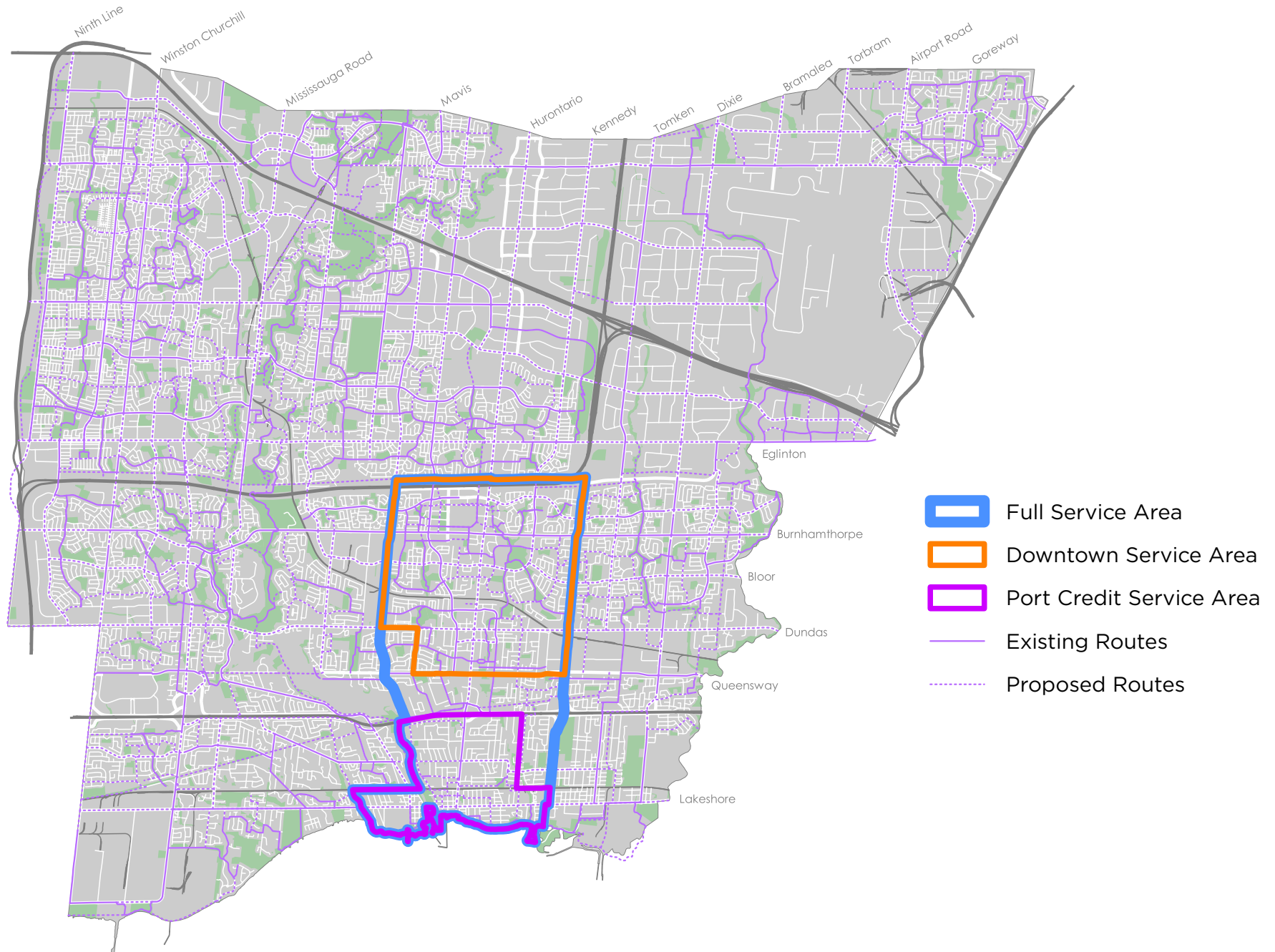
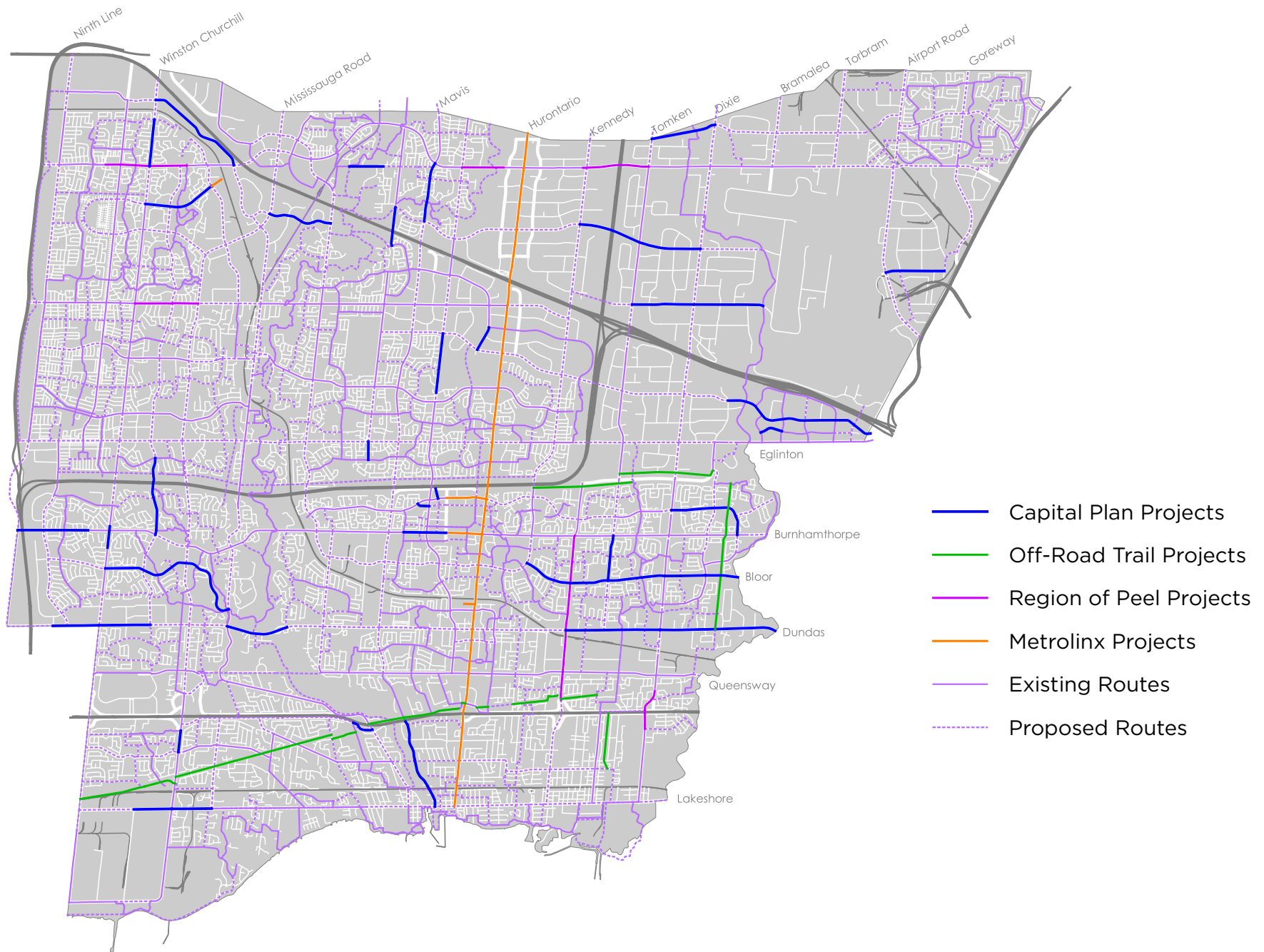


Figure 28: Five-year implementation plan map



Appendix E

Transit Data

21

Route number
Nombre d'itinéraire

Milton



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Milton



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les routes 21 d'autobus GO

Effective / À partir de:

24 JUNE
JUN 2023



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Step 1

Find the station or terminal you are departing from. Stops are listed across the top in the order they are served.

Step 2

The upper left corner tells you what day the schedule is for and the direction of travel.

Step 3

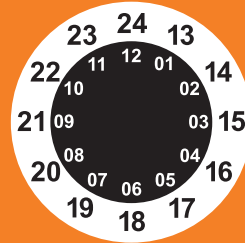
Look across the rows for available departure times.

Step 4

Not all trains or buses stop at every station. If you see → the train or bus will not stop at that station.

Schedule times shown in 24-hour clock

Midnight to noon
00 01 - 12 00
Noon to midnight
12 01 - 24 00



Legend

 Train trips

 Bus trips

→ Trip does not serve this location.



GO Bus service is accessible to passengers using mobility devices at this location.



GO Train & GO Bus service is accessible to passengers using mobility devices at this location.



GO Train service is accessible to passengers using mobility devices at this location.



Parking available.

For the latest schedule information and updates, please visit gotransit.com/schedules.

2

Notes

Bicycles

1. Bicycles are not allowed in Union Station or on-board trains during morning rush hour (6:30-9:30) and evening rush hour (15:30-18:30), Monday to Friday.
2. Foldable bicycles are allowed on-board trains at all times.

Comment lire nos horaires

Étape 1

Trouvez votre gare ou terminus de départ. La liste des arrêts est donnée en haut dans l'ordre dans lequel ils sont desservis.

Étape 2

Le coin supérieur gauche vous indique le jour pour lequel l'horaire est donné et la direction de circulation.

Étape 3

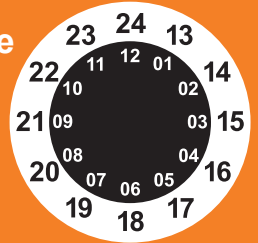
Regardez dans les rangées pour obtenir les heures de départ offertes.

Étape 4


Les trains ou les autobus ne s'arrêtent pas tous à chaque gare. Si vous voyez le symbole → le train ou l'autobus ne s'arrêtera pas à cette gare.

Indications selon un système horaire de 24 heures

De minuit à midi:
00 01 - 12 00
De midi à minuit:
12 01 - 24 00



Légende

 Horaire des trains

 Horaire des autobus

→ Trajet ne sert pas cette station.



Service d'autobus GO accessible aux personnes utilisant des aides à la mobilité à cet endroit.



Les services de trains et d'autobus GO sont accessibles aux utilisateurs d'un appareil d'aide à la mobilité à cet endroit.



Service de trains GO accessible aux personnes utilisant des aides à la mobilité à cet endroit.



Stationnement disponible.

Pour consulter les horaires les plus récents et les mises à jour, veuillez visiter gotransit.com/schedules.

3

Notes

Vélos

1. Les vélos ne sont pas autorisés dans la gare Union ou à bord des trains du lundi au vendredi, pendant l'heure de pointe (6:30-9:30) et pendant l'heure de pointe du soir (15:30-18:30).
2. Les vélos pliables sont permis à bord des trains en tout temps.

Saturday and Sunday
Samedi et dimanche

WESTBOUND / EN DIRECTION OUEST

Route Number Numéro du trajet	Zone→	Toronto 2	Toronto 2	Etobicoke 3	Etobicoke 79	Etobicoke 59	Mississauga 10	Mississauga 11	Mississauga 20	Mississauga 12	Mississauga 40	Mississauga 40	Oakville 13	Oakville 12	Oakville 13	Mississauga 21	Mississauga 22	Aquiline Ave @ Formanera Ave. Meadowdale Town Centre	Mississauga 23	Mississauga 22	Milton 24	Ar
Trip Number Numéro du parcours		Union Station	Exhibition GO	Kipling GO	Mimico GO	Long Branch GO	Port Credit GO	Cooksville GO	Square One	Clarkson GO	Erindale GO	Erin Mills Transitway	Oakville GO	Sheridan College	Trafalgar Rd. @ Hwy. 407	Streetsville GO	Meadowdale GO		Lisgar GO	Derry Rd. W. @ Ninth Line	Milton GO	
21	21151	07 30	→	→	→	→	→	07 52	08 04	→	08 12	→	→	→	→	08 25	08 35	08 37	08 45	08 53	09 15	
	1709	08 44	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
21A	21261												09 31h	09 39	09 49							10 11
21B	21263												09 38	→	→	→	→	→	→	→	→	→
21C	21265						09 17h	09 29	09 39		09 24h	→	09 49			09 48	10 00	10 03	10 14			
	1011	09 14	09 22	→	09 30	09 36	09 41	→	→	09 48	→	→	09 55									
21B	21283												09 54h	→	10 08	→	→	→	10 18	10 30	10 33	10 44
21C	21285						09 47h	10 00	10 12	→	10 22											
	1711	09 44	09 52	→	10 00	10 06	10 12	→	→	10 19	→	→	10 26									
21A	21301												10 31h	10 39	10 49	→	→	→	→	→	→	11 11
21B	21303												10 24h	→	10 38	→	→	→	→	→	→	
21C	21305						10 17h	10 30	10 42	→	10 52					10 49	→	→	10 56			
	1013	10 14	10 22	→	10 30	10 36	10 42	→	→	10 49	→	→	10 56									
21B	21323												10 54h	→	11 08	→	→	→	11 18	11 30	11 33	11 44
21C	21325						10 47h	11 00	11 12	→	11 22											
	1713	10 44	10 52	→	11 00	11 06	11 12	→	→	11 19	→	→	11 26									
21A	21341												11 31h	11 39	11 49	→	→	→	→	→	→	12 11
21B	21343												11 24h	→	11 38	→	→	→	11 48	12 00	12 03	12 14
21C	21345						11 17h	11 30	11 42	→	11 52											
	1015	11 14	11 22	→	11 30	11 36	11 42	→	→	11 49	→	→	11 56									
21B	21363												11 54h	→	12 08	→	→	→	12 18	12 30	12 33	12 44
21C	21365						11 47h	12 00	12 12	→	12 22											
	1715	11 44	11 52	→	12 00	12 06	12 12	→	→	12 19	→	→	12 26									
21A	21381												12 31h	12 39	12 51	→	→	→	→	→	→	13 14
21B	21383												12 24h	→	12 40	→	→	→	12 50	13 04	13 07	13 19
21C	21385						12 17h	12 30	12 43	→	12 55											
	1017	12 14	12 22	→	12 30	12 36	12 42	→	→	12 49	→	→	12 56									
21B	21403												12 54h	→	13 10	→	→	→	13 20	13 34	13 37	13 49
21C	21405						12 47h	13 00	13 13	→	13 25											
	1717	12 44	12 52	→	13 00	13 06	13 12	→	→	13 19	→	→	13 26									
21A	21421												13 31h	13 39	13 51	→	→	→	→	→	→	14 14
21B	21423												13 24h	→	13 40	→	→	→	13 50	14 04	14 07	14 19
21C	21425						13 17h	13 30	13 43	→	13 55											
	1019	13 14	13 22	→	13 30	13 36	13 42	→	→	13 49	→	→	13 56									
21B	21443												13 54h	→	14 10	→	→	→	14 20	14 34	14 37	14 49
21C	21445						13 47h	14 00	14 13	→	14 25											
	1719	13 44	13 52	→	14 00	14 06	14 12	→	→	14 19	→	→	14 26									
21A	21461												14 31h	14 39	14 51	→	→	→	→	→	→	15 14
21B	21463												14 24h	→	14 40	→	→	→	14 50	15 04	15 07	15 19
21C	21465						14 17h	14 30	14 43	→	14 55											
	1021	14 14	14 22	→	14 30	14 36	14 42	→	→	14 49	→	→	14 56									
21B	21483												14 54h	→	15 10	→	→	→	15 20	15 34	15 37	15 49
21C	21485						14 47h	15 00	15 13	→	15 25											
	1721	14 44	14 52	→	15 00	15 06	15 12	→	→	15 19	→	→	15 26									
21A	21511												15 31h	15 39	15 51	→	→	→	→	→	→	16 14
21B	21513												15 24h	→	15 40	→	→	→	15 50	16 04	16 07	16 19
21C	21515												15 17h	15 30	15 43	→	15 55					
	1023	15 14	15 22	→	15 30	15 36	15 42	→	→	15 49	→	→	15 56									
21B	21543												15 54h	→	16 10	→	→	→	16 20	16 34	16 37	16 49
21C	21545						15 47h	16 00	16 13	→	16 25											
	1723	15 44	15 52	→	16 00	16 06	16 12	→	→	16 19	→	→	16 26									
21A	21571												16 31h	16 39	16 51	→	→	→	→	→	→	17 14
21B	21573												16 24h	→	16 40	→	→	→	16 50	17 04	17 07	17 19
21C	21575						16 17h	16 30	16 43	→	16 55											

Saturday and Sunday
Samedi et dimanche

WESTBOUND / EN DIRECTION OUEST

Route Number Numéro du trajet	Zone→	Toronto 2	Dp	Toronto 2	Etobicoke 3	Etobicoke 79	Etobicoke 59	Mississauga 10	Mississauga 11	Mississauga 20	Mississauga 12	Mississauga 40	Mississauga 40	Oakville 13	Oakville 12	Oakville 13	Trafalgar Rd. @ Hwy. 407	Streetsville GO	Meadowdale GO	Aquiline Ave @ Formanera Ave. Meadowdale Town Centre	Mississauga 23	Mississauga 22	Milton 24	Ar
Trip Number Numéro du parcours		Union Station	Exhibition GO	Kipling GO	Mimico GO	Long Branch GO	Port Credit GO	Cooksville GO	Square One	Clarkson GO	Erindale GO	Erin Mills Transitway	Oakville GO	Sheridan College	Trafalgar Rd. @ Hwy. 407	Streetsville GO	Meadowdale GO		Lisgar GO	Derry Rd. W. @ Ninth Line	Milton GO			
	1025	16 14	16 22	→	16 30	16 36	16 42	→	16 49	→	16 56													
21B	21603												16 54h	→	17 10	→	→	→	17 20	17 34	17 37	17 49		
21C	21605												17 25	→	17 41	→	→	→	17 50	18 04	18 07	18 19		
	1725	16 44	16 52	→	17 00	17 06	17 12	→	→	17 19	→	→	17 26											
21A	21631												17 31h	17 39	17 51	→	→	→	→	→	→	→	18 14	
21B	21633												17 24h	→	17 40	→	→	→	17 50	18 04	18 07	18 19		
21C	21635												17 55	→	18 11	→	→	→	18 20	18 34	18 37	18 49		
	1027	17 14	17 22	→	17 30	17 36	17 42	→	→	17 49	→	→	17 56											
21B	21663												17 54h	→	18 08	→	→	→	18 18	18 30	18 33	18 44		
21C	21665												18 25	→	18 41	→	→	→	18 50	19 04	19 07	19 19		
	1727	17 44	17 52	→	18 00	18 06	18 12	→	→	18 19	→	→	18 26											
21A	21681												18 31h	18 39	18 49	→	→	→	→	→	→	→	19 11	
21B	21683												18 24h	→	18 38	→	→	→	18 48	19 00	19 03	19 14		
21C	21685												18 55	→	19 11	→	→	→	19 20	19 34	19 37	19 49		
	1029	18 14	18 22	→	18 30	18 36	18 42	→	→	18 49	→	→	18 56											
21B	21703												18 54h	→	19 08	→	→	→	19 18	19 30	19 33	19 44		
21C	21705												19 25	→	19 41	→	→	→	19 50	20 04	20 07	20 19		
	1729	18 44	18 52	→	19 00	19 06	19 12	→	→	19 19	→	→	19 26											
21A	21721												19 31h	19 39	19 49	→	→	→	→	→	→	→	20 11	
21B	21723												19 24h	→	19 38	→	→	→	19 48	20 00	20 03	20 14		


 Scheduled Departure Times from this Stop

Route 9

Churchill Meadows Community Centre

Morning

4am	5am	6am	7am	8am	9am	10am	11am	12pm
	5:57 am	6:17 am 6:42 am	7:09 am 7:34 am 7:59 am	8:25 am 8:50 am	9:19 am 9:54 am	10:24 am 10:54 am	11:29 am 11:59 am	12:35 pm

Afternoon/Evening

1pm	2pm	3pm	4pm	5pm	6pm	7pm	8pm	9pm	10pm	11pm
1:05 pm 1:37 pm	2:12 pm 2:47 pm	3:22 pm 3:52 pm	4:25 pm 4:50 pm	5:10 pm 5:40 pm	6:10 pm 6:40 pm	7:10 pm 7:34 pm	8:04 pm 8:30 pm 8:55 pm	9:19 pm 9:54 pm	10:24 pm 10:48 pm	11:18 pm 11:47 pm

Evening

12am	1am
12:11 am 12:41 am	1:06 am


Scheduled Departure Times from this Stop

Route 9

City Centre Transit Terminal Drop Off

Morning

4am	5am	6am	7am	8am	9am	10am	11am	12pm
	5:16 am	6:16 am	7:07 am	8:23 am	9:11 am	10:05 am	11:09 am	12:14 pm
	5:36 am	6:41 am	7:32 am	8:48 am	9:35 am	10:39 am	11:39 am	12:44 pm
	5:56 am		7:58 am					

Afternoon/Evening

1pm	2pm	3pm	4pm	5pm	6pm	7pm	8pm	9pm	10pm	11pm
1:19 pm	2:25 pm	3:00 pm	4:11 pm	5:20 pm	6:10 pm	7:10 pm	8:09 pm	9:09 pm	10:03 pm	11:07 pm
1:55 pm		3:36 pm	4:45 pm	5:45 pm	6:40 pm	7:40 pm	8:29 pm	9:38 pm	10:32 pm	11:32 pm
							8:49 pm			

Evening

12am
12:01 am
12:26 am

STOP SCHEDULES

Powered by


Triplinx


Scheduled Departure Times from this Stop

Route 44

Meadowvale Town Centre Drop Off

Morning

4am	5am	6am	7am	8am	9am	10am	11am	12pm
	5:07 am	6:11 am	7:14 am	8:17 am	9:20 am	10:01 am	11:04 am	12:07 pm
	5:27 am	6:32 am	7:35 am	8:38 am	9:40 am	10:22 am	11:25 am	12:28 pm
	5:50 am	6:53 am	7:56 am	8:59 am		10:43 am	11:46 am	12:49 pm

Afternoon/Evening

1pm	2pm	3pm	4pm	5pm	6pm	7pm	8pm	9pm	10pm	11pm
1:10 pm	2:13 pm	3:17 pm	4:01 pm	5:07 pm	6:13 pm	7:18 pm	8:04 pm	9:23 pm	10:11 pm	11:23 pm
1:31 pm	2:34 pm	3:39 pm	4:23 pm	5:29 pm	6:34 pm	7:42 pm	8:33 pm	9:47 pm	10:35 pm	11:47 pm
1:52 pm	2:55 pm		4:45 pm	5:51 pm	6:56 pm		8:59 pm		10:59 pm	

Evening

12am
12:09 am

Scheduled Departure Times from this Stop

University Of Toronto At Mississauga Campus

Route 44

Morning

4am	5am	6am	7am	8am	9am	10am	11am	12pm
4:57 am	5:18 am	6:20 am	7:01 am	8:03 am	9:06 am	10:10 am	11:12 am	12:15 pm
	5:38 am	6:41 am	7:22 am	8:24 am	9:27 am	10:30 am	11:33 am	12:36 pm
	5:59 am		7:43 am	8:45 am	9:49 am	10:51 am	11:54 am	12:57 pm

Afternoon/Evening

1pm	2pm	3pm	4pm	5pm	6pm	7pm	8pm	9pm	10pm	11pm
1:20 pm	2:02 pm	3:04 pm	4:11 pm	5:18 pm	6:01 pm	7:07 pm	8:06 pm	9:19 pm	10:07 pm	11:19 pm
1:41 pm	2:23 pm	3:27 pm	4:34 pm	5:39 pm	6:23 pm	7:28 pm	8:28 pm	9:43 pm	10:31 pm	11:42 pm
	2:42 pm	3:49 pm	4:56 pm		6:45 pm	7:44 pm	8:51 pm		10:55 pm	

Evening

12am
12:06 am
12:30 am

Appendix F

Traffic Data

Turning Movement Counts



Turning Movement Count (5 . TANNERY ST & CRUMBIE ST / BROADWAY ST)

Start Time	N Approach CRUMBIE ST						E Approach TANNERY ST						S Approach BROADWAY ST						W Approach TANNERY ST						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
06:00:00	1	0	1	0	0	2	0	1	0	0	0	1	3	1	0	0	0	4	0	1	2	0	0	3	10	
06:15:00	2	2	3	0	0	7	0	1	0	0	0	1	2	2	0	0	0	4	0	1	1	0	0	2	14	
06:30:00	1	0	0	0	1	1	1	6	1	0	0	8	1	0	1	0	0	2	0	3	0	0	0	3	14	
06:45:00	2	0	1	0	0	3	0	12	3	0	1	15	1	0	0	0	0	1	0	10	2	0	2	12	31	69
07:00:00	1	3	4	0	1	8	1	9	0	0	2	10	2	1	0	0	0	3	1	6	1	0	0	8	29	88
07:15:00	2	0	1	0	2	3	0	5	5	0	0	10	2	4	0	0	0	6	4	7	3	0	0	14	33	107
07:30:00	4	0	1	0	11	5	0	19	3	0	2	22	7	5	1	0	1	13	1	7	1	0	0	9	49	142
07:45:00	3	4	3	0	5	10	2	32	5	0	1	39	3	5	7	0	2	15	11	26	5	0	0	42	106	217
08:00:00	1	1	1	0	21	3	1	71	5	0	1	77	8	4	2	0	6	14	31	59	6	0	4	96	190	378
08:15:00	5	14	2	0	13	21	2	29	5	0	0	36	6	9	12	0	0	27	18	28	9	0	0	55	139	484
08:30:00	3	6	3	0	4	12	1	9	4	0	0	14	8	8	3	0	0	19	4	16	4	0	0	24	69	504
08:45:00	3	5	0	0	1	8	0	11	5	0	1	16	11	4	3	0	2	18	2	20	11	0	1	33	75	473
09:00:00	3	5	1	0	3	9	1	15	3	0	2	19	8	8	4	0	1	20	6	13	4	0	1	23	71	354
09:15:00	9	7	2	0	7	18	1	8	7	0	2	16	1	6	2	0	0	9	1	10	9	0	0	20	63	278
09:30:00	9	1	2	0	2	12	1	12	3	0	2	16	5	7	4	0	0	16	4	8	7	0	1	19	63	272
09:45:00	5	4	1	0	0	10	2	12	2	0	1	16	5	6	2	0	1	13	6	13	4	0	0	23	62	259
BREAK																										
15:00:00	9	9	3	0	2	21	5	29	7	0	2	41	8	11	0	0	2	19	1	17	4	0	1	22	103	
15:15:00	9	7	3	0	4	19	2	17	6	0	2	25	3	7	4	0	0	14	2	13	1	0	1	16	74	
15:30:00	13	7	4	0	2	24	0	16	2	0	0	18	3	8	3	0	1	14	3	15	4	0	3	22	78	
15:45:00	12	9	2	0	9	23	4	22	12	0	4	38	9	8	8	0	1	25	6	25	9	1	0	41	127	382
16:00:00	5	4	1	0	9	10	2	21	12	0	1	35	8	5	8	0	4	21	3	23	5	0	0	31	97	376
16:15:00	4	8	3	0	2	15	5	15	6	0	3	26	12	15	6	0	2	33	3	18	4	0	2	25	99	401
16:30:00	12	12	4	0	3	28	2	15	12	0	0	29	10	6	6	0	1	22	3	8	2	0	1	13	92	415
16:45:00	8	5	3	0	1	16	3	18	6	0	0	27	11	10	6	0	2	27	6	21	8	0	1	35	105	393
17:00:00	11	9	3	0	1	23	6	23	10	0	3	39	16	8	5	0	2	29	7	12	9	0	1	28	119	415
17:15:00	10	16	2	0	7	28	3	22	4	0	7	29	8	12	7	0	4	27	4	12	9	0	0	25	109	425
17:30:00	11	8	2	0	1	21	3	14	8	0	1	25	10	10	7	0	7	27	1	15	6	0	3	22	95	428
17:45:00	14	7	3	0	6	24	1	16	7	0	1	24	12	6	5	0	6	23	3	19	6	0	0	28	99	422
18:00:00	10	11	1	0	3	22	2	8	12	0	2	22	8	11	4	0	1	23	1	7	7	0	0	15	82	385
18:15:00	12	13	2	0	1	27	6	16	5	0	5	27	10	9	5	0	4	24	3	6	6	0	0	15	93	369
18:30:00	5	7	0	0	1	12	1	18	8	0	2	27	10	3	4	0	1	17	4	7	7	0	0	18	74	348
18:45:00	12	5	0	0	2	17	2	10	3	0	1	15	8	9	2	0	2	19	1	12	6	0	0	19	70	319
Grand Total	211	189	62	0	125	462	60	532	171	0	49	763	219	208	121	0	53	548	140	458	162	1	22	761	2534	-
Approach%	45.7%	40.9%	13.4%	0%	-	-	7.9%	69.7%	22.4%	0%	-	-	40%	38%	22.1%	0%	-	-	18.4%	60.2%	21.3%	0.1%	-	-	-	-
Totals %	8.3%	7.5%	2.4%	0%	-	18.2%	2.4%	21%	6.7%	0%	-	30.1%	8.6%	8.2%	4.8%	0%	-	21.6%	5.5%	18.1%	6.4%	0%	30%	-	-	-
Heavy	1	1	2	0	-	-	1	10	2	0	-	-	5	2	1	0	-	-	4	8	0	0	-	-	-	-
Heavy %	0.5%	0.5%	3.2%	0%	-	-	1.7%	1.9%	1.2%	0%	-	-	2.3%	1%	0.8%	0%	-	-	2.9%	1.7%	0%	0%	-	-	-	-
Bicycles	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycle %	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Peak Hour: 07:45 AM - 08:45 AM Weather: Few Clouds (-5.39 °C)

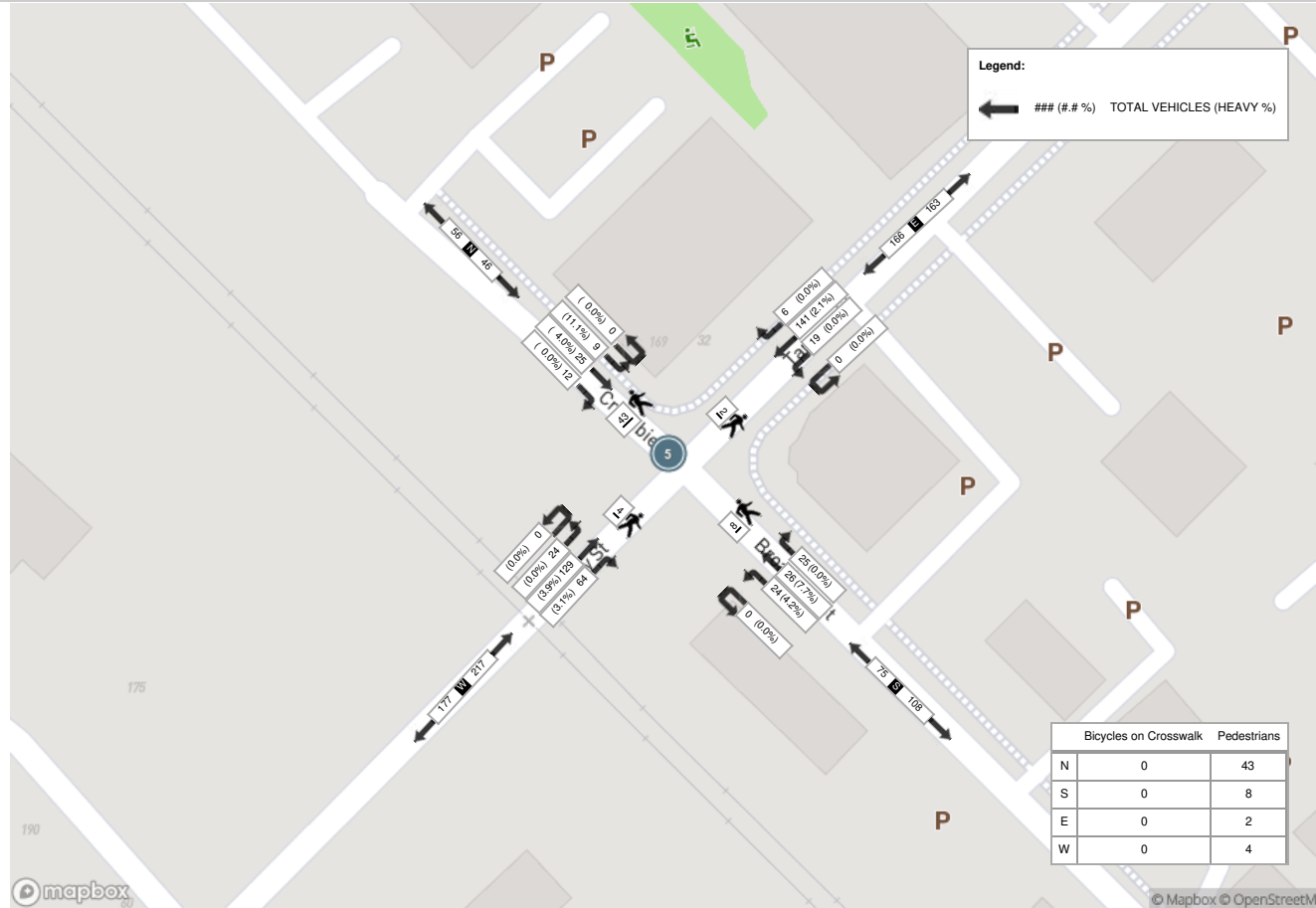
Start Time	N Approach CRUMBIE ST						E Approach TANNERY ST						S Approach BROADWAY ST						W Approach TANNERY ST						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
07:45:00	3	4	3	0	5	10	2	32	5	0	1	39	3	5	7	0	2	15	11	26	5	0	0	42	106
08:00:00	1	1	1	0	21	3	1	71	5	0	1	77	8	4	2	0	6	14	31	59	6	0	4	96	190
08:15:00	5	14	2	0	13	21	2	29	5	0	0	36	6	9	12	0	0	27	18	28	9	0	0	55	139
08:30:00	3	6	3	0	4	12	1	9	4	0	0	14	8	8	3	0	0	19	4	16	4	0	0	24	69
Grand Total	12	25	9	0	43	46	6	141	19	0	2	166	25	26	24	0	8	75	64	129	24	0	4	217	504
Approach%	26.1%	54.3%	19.6%	0%	-	-	3.6%	84.9%	11.4%	0%	-	-	33.3%	34.7%	32%	0%	-	-	29.5%	59.4%	11.1%	0%	-	-	-
Totals %	2.4%	5%	1.8%	0%	9.1%	9.1%	1.2%	28%	3.8%	0%	32.9%	32.9%	5%	5.2%	4.8%	0%	14.9%	14.9%	12.7%	25.6%	4.8%	0%	43.1%	43.1%	-
PHF	0.6	0.45	0.75	0	0.55	0.55	0.75	0.5	0.95	0	0.54	0.54	0.78	0.72	0.5	0	0.69	0.69	0.52	0.55	0.67	0	0.57	0.57	-
Heavy	0	1	1	0	2	2	0	3	0	0	3	3	0	2	1	0	3	3	2	5	0	0	7	7	-
Heavy %	0%	4%	11.1%	0%	4.3%	4.3%	0%	2.1%	0%	0%	1.8%	1.8%	0%	7.7%	4.2%	0%	4%	4%	3.1%	3.9%	0%	0%	3.2%	3.2%	-
Lights	12	24	8	0	44	44	6	138	19	0	163	163	25	24	22	0	71	71	62	124	24	0	210	210	-
Lights %	100%	96%	88.9%	0%	95.7%	95.7%	100%	97.9%	100%	0%	98.2%	98.2%	100%	92.3%	91.7%	0%	94.7%	94.7%	96.9%	96.1%	100%	0%	96.8%	96.8%	-
Single-Unit Trucks	0	1	1	0	2	2	0	0	0	0	0	0	0	2	0	0	2	2	1	0	0	0	1	1	-
Single-Unit Trucks %	0%	4%	11.1%	0%	4.3%	4.3%	0%	0%	0%	0%	0%	0%	0%	7.7%	0%	0%	2.7%	2.7%	1.6%	0%	0%	0%	0.5%	0.5%	-
Buses	0	0	0	0	0	0	0	3	0	0	3	3	0	0	1	0	1	1	1	5	0	0	6	6	-
Buses %	0%	0%	0%	0%	0%	0%	0%	2.1%	0%	0%	1.8%	1.8%	0%	0%	4.2%	0%	1.3%	1.3%	1.6%	3.9%	0%	0%	2.8%	2.8%	-
Articulated Trucks	0	0	0	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%	0%	0%	0%	-
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	0	0	0	-
Bicycles on Road %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4.2%	0%	1.3%	1.3%	0%	0%	0%	0%	0%	0%	-
Pedestrians	-	-	-	-	43	-	-	-	-	-	2	-	-	-	-	-	8	-	-	-	-	-	4	-	-
Pedestrians%	-	-	-	-	75.4%	-	-	-	-	-	3.5%	-	-	-	-	-	14%	-	-	-	-	-	7%	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-



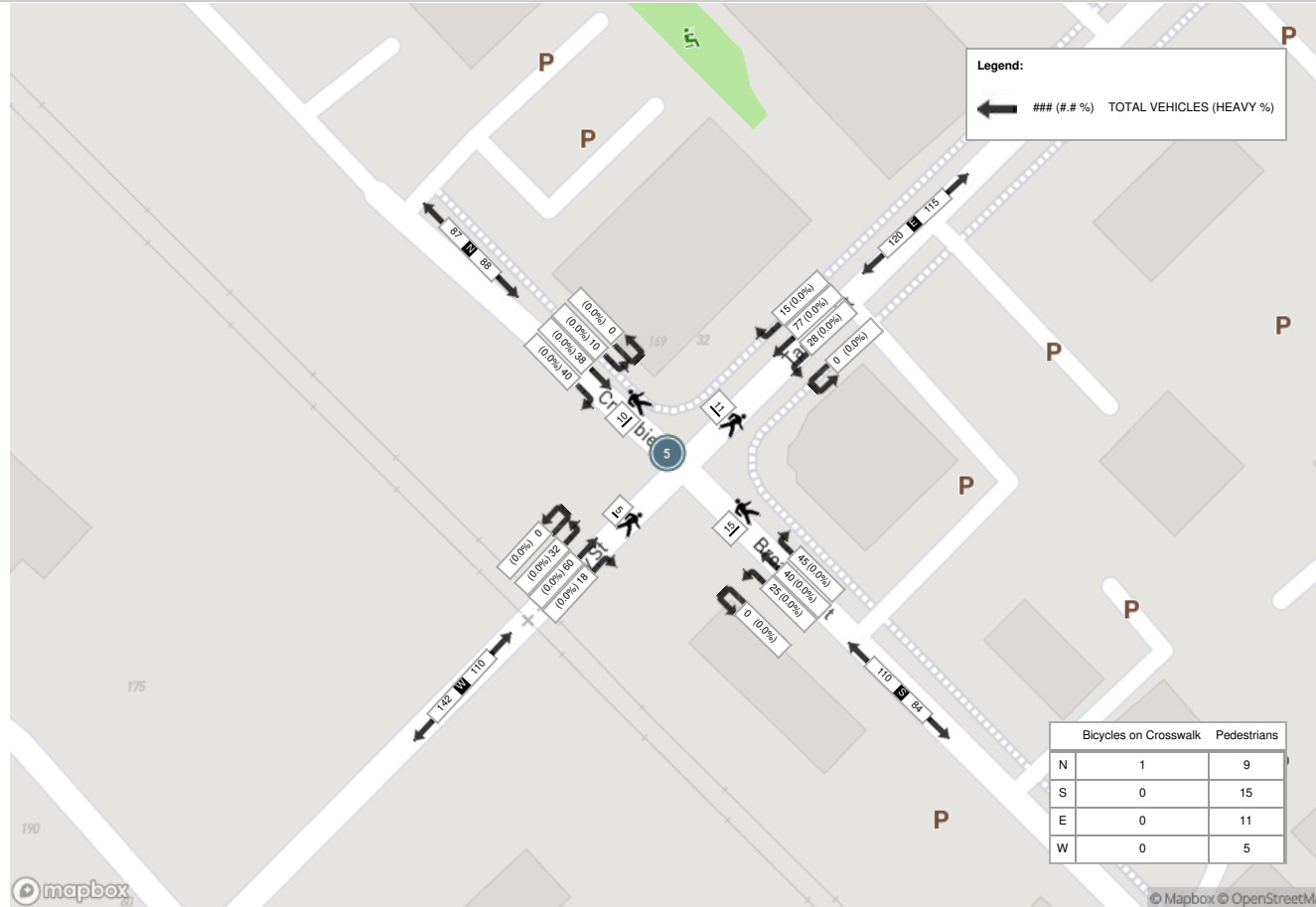
Peak Hour: 04:45 PM - 05:45 PM Weather: Scattered Clouds (3.74 °C)

Start Time	N Approach CRUMBIE ST						E Approach TANNERY ST						S Approach BROADWAY ST						W Approach TANNERY ST						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
16:45:00	8	5	3	0	1	16	3	18	6	0	0	27	11	10	6	0	2	27	6	21	8	0	1	35	105
17:00:00	11	9	3	0	1	23	6	23	10	0	3	39	16	8	5	0	2	29	7	12	9	0	1	28	119
17:15:00	10	16	2	0	7	28	3	22	4	0	7	29	8	12	7	0	4	27	4	12	9	0	0	25	109
17:30:00	11	8	2	0	1	21	3	14	8	0	1	25	10	10	7	0	7	27	1	15	6	0	3	22	95
Grand Total	40	38	10	0	10	88	15	77	28	0	11	120	45	40	25	0	15	110	18	60	32	0	5	110	428
Approach%	45.5%	43.2%	11.4%	0%	-	-	12.5%	64.2%	23.3%	0%	-	-	40.9%	36.4%	22.7%	0%	-	-	16.4%	54.5%	29.1%	0%	-	-	-
Totals %	9.3%	8.9%	2.3%	0%	20.6%	20.6%	3.5%	18%	6.5%	0%	28%	28%	10.5%	9.3%	5.8%	0%	25.7%	25.7%	4.2%	14%	7.5%	0%	25.7%	25.7%	-
PHF	0.91	0.59	0.83	0	0.79	0.79	0.63	0.84	0.7	0	0.77	0.77	0.7	0.83	0.89	0	0.95	0.95	0.64	0.71	0.89	0	0.79	0.79	-
Heavy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Heavy %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Lights	39	38	10	0	87	87	15	77	28	0	120	120	45	40	25	0	110	110	18	60	30	0	108	108	-
Lights %	97.5%	100%	100%	0%	98.9%	98.9%	100%	100%	100%	0%	100%	100%	100%	100%	100%	0%	100%	100%	100%	100%	93.8%	0%	98.2%	98.2%	-
Single-Unit Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Single-Unit Trucks %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Buses %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Articulated Trucks	0	0	0	0	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%	0%	0%	0%	0%
Bicycles on Road	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2
Bicycles on Road %	2.5%	0%	0%	0%	1.1%	1.1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	6.3%	0%	1.8%	1.8%
Pedestrians	-	-	-	-	9	9	-	-	-	-	11	11	-	-	-	-	15	15	-	-	-	-	5	5	5
Pedestrians %	-	-	-	-	22%	22%	-	-	-	-	26.8%	26.8%	-	-	-	-	36.6%	36.6%	-	-	-	-	12.2%	12.2%	12.2%
Bicycles on Crosswalk	-	-	-	-	1	1	-	-	-	-	0	0	-	-	-	-	0	0	-	-	-	-	0	0	0
Bicycles on Crosswalk %	-	-	-	-	2.4%	2.4%	-	-	-	-	0%	0%	-	-	-	-	0%	0%	-	-	-	-	0%	0%	0%

Peak Hour: 07:45 AM - 08:45 AM Weather: Few Clouds (-5.39 °C)



Peak Hour: 04:45 PM - 05:45 PM Weather: Scattered Clouds (3.74 °C)





Turning Movement Count (1 . THOMAS ST & QUEEN ST S)

Start Time	N Approach QUEEN ST					S Approach QUEEN ST					W Approach THOMAS RD					Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	UTurn N:N	Peds N:	Approach Total	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Left W:N	UTurn W:W	Peds W:	Approach Total		
07:00:00	29	35	0	0	64	26	4	0	1	30	11	25	0	1	36	130	
07:15:00	31	55	0	0	86	44	5	0	2	49	19	33	0	3	52	187	
07:30:00	36	48	0	0	84	60	12	0	0	72	17	46	0	3	63	219	
07:45:00	37	53	0	1	90	62	15	0	1	77	29	56	0	3	85	252	788
08:00:00	46	75	0	1	121	75	14	0	3	89	18	66	0	2	84	294	952
08:15:00	35	85	0	2	120	78	13	0	0	91	31	56	0	3	87	298	1063
08:30:00	50	80	0	2	130	100	24	0	1	124	44	66	0	2	110	364	1208
08:45:00	37	91	0	0	128	83	24	0	0	107	27	59	0	2	86	321	1277
09:00:00	62	73	0	1	135	63	16	0	1	79	20	56	0	0	76	290	1273
09:15:00	23	42	0	2	65	53	18	0	0	71	25	51	0	7	76	212	1187
09:30:00	30	54	0	2	84	58	15	0	2	73	27	31	0	4	58	215	1038
09:45:00	30	42	0	2	72	62	15	0	1	77	19	57	0	4	76	225	942
BREAK																	
16:00:00	63	101	0	1	164	91	22	0	5	113	20	51	0	9	71	348	
16:15:00	54	83	0	0	137	106	26	0	3	132	29	33	0	7	62	331	
16:30:00	62	87	0	5	149	102	24	0	5	126	25	49	0	6	74	349	
16:45:00	61	90	0	4	151	82	24	0	6	106	24	45	0	9	69	326	1354
17:00:00	75	95	0	6	170	98	27	0	7	125	32	42	0	10	74	369	1375
17:15:00	64	94	0	11	158	111	35	0	13	146	44	39	0	17	83	387	1431
17:30:00	60	112	0	12	172	99	28	0	9	127	42	47	0	8	89	388	1470
17:45:00	63	86	0	9	149	83	32	0	6	115	50	46	0	12	96	360	1504
18:00:00	49	81	0	11	130	84	20	0	3	104	35	51	0	5	86	320	1455
18:15:00	66	82	0	8	148	84	25	0	7	109	28	48	0	15	76	333	1401
18:30:00	59	70	0	10	129	73	27	0	9	100	38	66	0	7	104	333	1346
18:45:00	37	76	0	11	113	87	28	0	9	115	40	52	0	12	92	320	1306
Grand Total	1159	1790	0	101	2949	1864	493	0	94	2357	694	1171	0	151	1865	7171	-
Approach%	39.3%	60.7%	0%	-	-	79.1%	20.9%	0%	-	-	37.2%	62.8%	0%	-	-	-	-
Totals %	16.2%	25%	0%	-	41.1%	26%	6.9%	0%	-	32.9%	9.7%	16.3%	0%	-	26%	-	-
Heavy	20	40	0	-	-	40	18	0	-	-	28	19	0	-	-	-	-
Heavy %	1.7%	2.2%	0%	-	-	2.1%	3.7%	0%	-	-	4%	1.6%	0%	-	-	-	-
Bicycles	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycle %	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Peak Hour: 08:00 AM - 09:00 AM Weather: Scattered Clouds (6.79 °C)

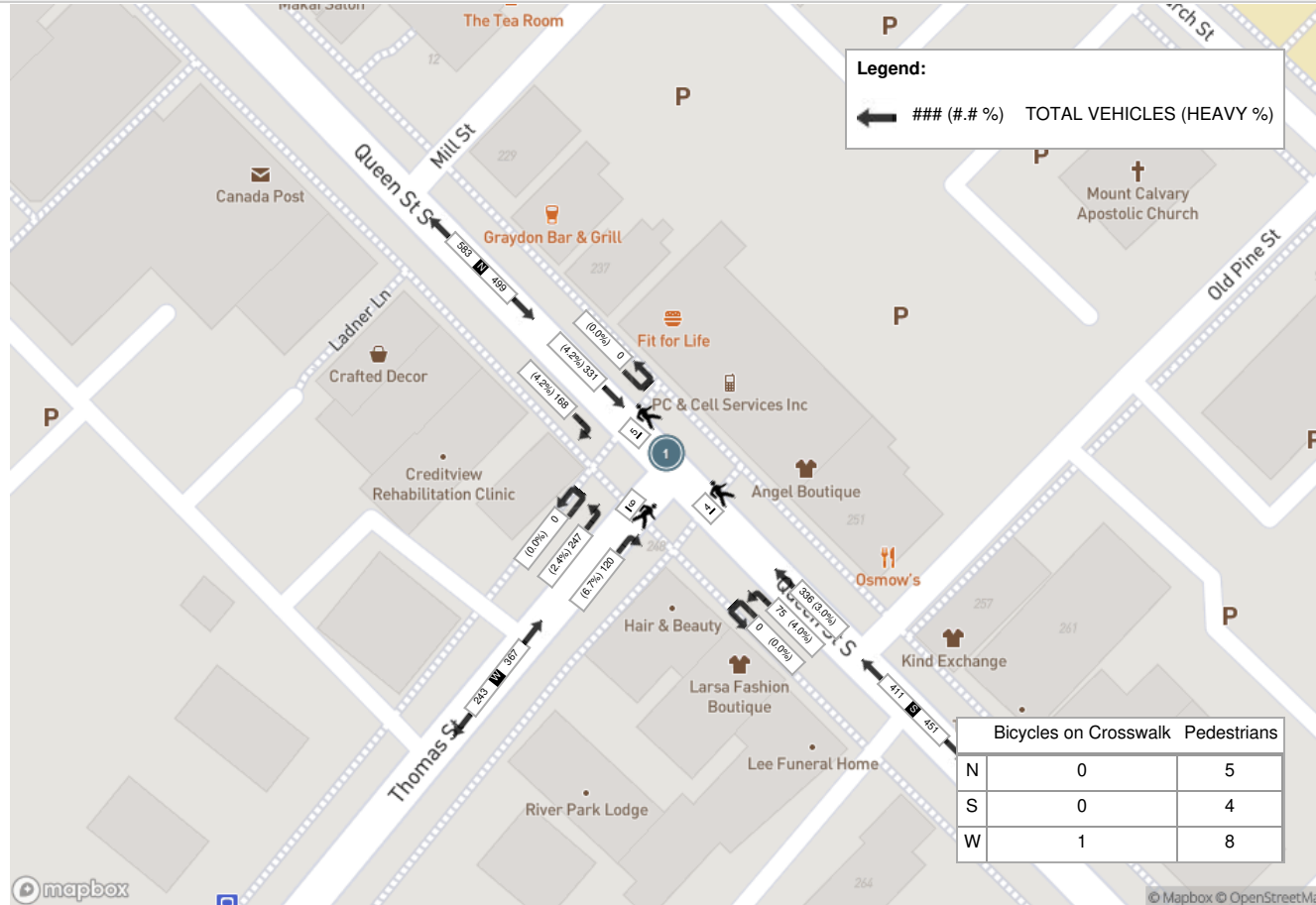
Start Time	N Approach QUEEN ST					S Approach QUEEN ST					W Approach THOMAS RD					Int. Total (15 min)
	Right	Thru	UTurn	Peds	Approach Total	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	
08:00:00	46	75	0	1	121	75	14	0	3	89	18	66	0	2	84	294
08:15:00	35	85	0	2	120	78	13	0	0	91	31	56	0	3	87	298
08:30:00	50	80	0	2	130	100	24	0	1	124	44	66	0	2	110	364
08:45:00	37	91	0	0	128	83	24	0	0	107	27	59	0	2	86	321
Grand Total	168	331	0	5	499	336	75	0	4	411	120	247	0	9	367	1277
Approach%	33.7%	66.3%	0%	-	-	81.8%	18.2%	0%	-	-	32.7%	67.3%	0%	-	-	-
Totals %	13.2%	25.9%	0%	-	39.1%	26.3%	5.9%	0%	-	32.2%	9.4%	19.3%	0%	-	28.7%	-
PHF	0.84	0.91	0	-	0.96	0.84	0.78	0	-	0.83	0.68	0.94	0	-	0.83	-
Heavy	7	14	0	-	21	10	3	0	-	13	8	6	0	-	14	-
Heavy %	4.2%	4.2%	0%	-	4.2%	3%	4%	0%	-	3.2%	6.7%	2.4%	0%	-	3.8%	-
Lights	160	316	0	-	476	325	72	0	-	397	112	241	0	-	353	-
Lights %	95.2%	95.5%	0%	-	95.4%	96.7%	96%	0%	-	96.6%	93.3%	97.6%	0%	-	96.2%	-
Single-Unit Trucks	2	3	0	-	5	1	0	0	-	1	2	2	0	-	4	-
Single-Unit Trucks %	1.2%	0.9%	0%	-	1%	0.3%	0%	0%	-	0.2%	1.7%	0.8%	0%	-	1.1%	-
Buses	5	8	0	-	13	9	3	0	-	12	6	4	0	-	10	-
Buses %	3%	2.4%	0%	-	2.6%	2.7%	4%	0%	-	2.9%	5%	1.6%	0%	-	2.7%	-
Articulated Trucks	0	3	0	-	3	0	0	0	-	0	0	0	0	-	0	-
Articulated Trucks %	0%	0.9%	0%	-	0.6%	0%	0%	0%	-	0%	0%	0%	0%	-	0%	-
Bicycles on Road	1	1	0	-	2	1	0	0	-	1	0	0	0	-	0	-
Bicycles on Road %	0.6%	0.3%	0%	-	0.4%	0.3%	0%	0%	-	0.2%	0%	0%	0%	-	0%	-
Pedestrians	-	-	-	5	-	-	-	-	4	-	-	-	-	8	-	-
Pedestrians%	-	-	-	27.8%	-	-	-	-	22.2%	-	-	-	-	44.4%	-	-
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	1	-	-
Bicycles on Crosswalk%	-	-	-	0%	-	-	-	-	0%	-	-	-	-	5.6%	-	-



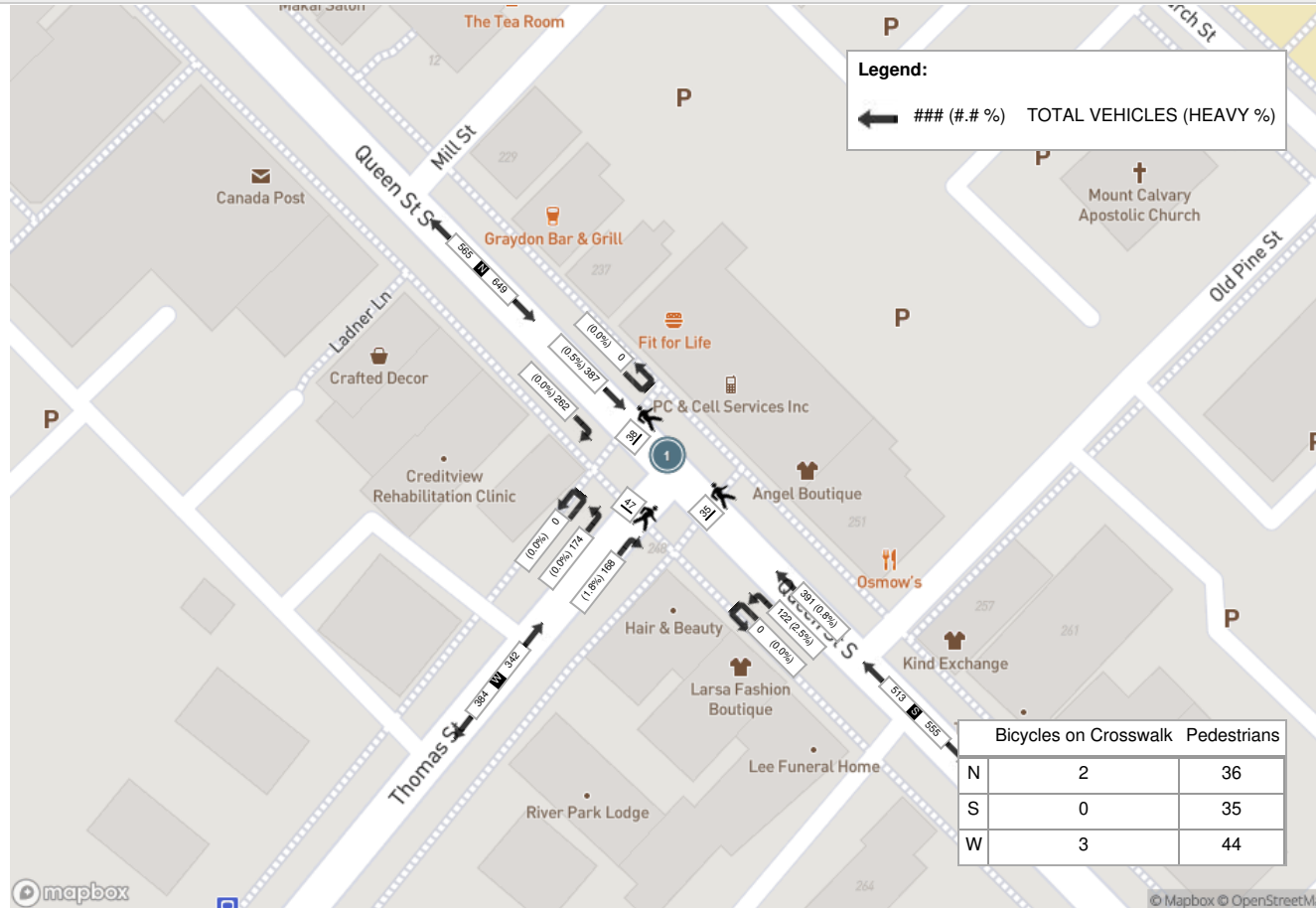
Peak Hour: 05:00 PM - 06:00 PM Weather: Broken Clouds (20.49 °C)

Start Time	N Approach QUEEN ST					S Approach QUEEN ST					W Approach THOMAS RD					Int. Total (15 min)
	Right	Thru	UTurn	Peds	Approach Total	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	
17:00:00	75	95	0	6	170	98	27	0	7	125	32	42	0	10	74	369
17:15:00	64	94	0	11	158	111	35	0	13	146	44	39	0	17	83	387
17:30:00	60	112	0	12	172	99	28	0	9	127	42	47	0	8	89	388
17:45:00	63	86	0	9	149	83	32	0	6	115	50	46	0	12	96	360
Grand Total	262	387	0	38	649	391	122	0	35	513	168	174	0	47	342	1504
Approach%	40.4%	59.6%	0%	-	-	76.2%	23.8%	0%	-	-	49.1%	50.9%	0%	-	-	-
Totals %	17.4%	25.7%	0%	43.2%	26%	8.1%	0%	34.1%	11.2%	11.6%	0%	22.7%	-	-	-	-
PHF	0.87	0.86	0	0.94	0.88	0.87	0	0.88	0.84	0.93	0	0.89	-	-	-	-
Heavy	0	2	0	2	3	3	0	6	3	0	0	3	-	-	-	-
Heavy %	0%	0.5%	0%	0.3%	0.8%	2.5%	0%	1.2%	1.8%	0%	0%	0.9%	-	-	-	-
Lights	262	384	0	646	386	119	0	505	165	173	0	338	-	-	-	-
Lights %	100%	99.2%	0%	99.5%	98.7%	97.5%	0%	98.4%	98.2%	99.4%	0%	98.8%	-	-	-	-
Single-Unit Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Single-Unit Trucks %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Buses	0	2	0	2	3	3	0	6	3	0	0	3	-	-	-	-
Buses %	0%	0.5%	0%	0.3%	0.8%	2.5%	0%	1.2%	1.8%	0%	0%	0.9%	-	-	-	-
Articulated Trucks	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%
Bicycles on Road	0	1	0	1	2	0	0	2	0	1	0	1	-	-	-	-
Bicycles on Road %	0%	0.3%	0%	0.2%	0.5%	0%	0%	0.4%	0%	0.6%	0%	0.3%	-	-	-	-
Pedestrians	-	-	-	36	-	-	-	35	-	-	-	44	-	-	-	-
Pedestrians%	-	-	-	30%	-	-	-	29.2%	-	-	-	36.7%	-	-	-	-
Bicycles on Crosswalk	-	-	-	2	-	-	-	0	-	-	-	3	-	-	-	-
Bicycles on Crosswalk%	-	-	-	1.7%	-	-	-	0%	-	-	-	2.5%	-	-	-	-

Peak Hour: 08:00 AM - 09:00 AM Weather: Scattered Clouds (6.79 °C)



Peak Hour: 05:00 PM - 06:00 PM Weather: Broken Clouds (20.49 °C)





Turning Movement Count (2 . THOMAS ST & BROADWAY ST)

Start Time	N Approach BROADWAY ST						E Approach THOMAS ST						S Approach SOUTH DRIVEWAY						W Approach THOMAS ST						Int. Total (15 min)	Int. Total (1 hr)	
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total			
07:00:00	4	0	0	0	2	4	0	33	0	0	0	33	0	0	0	0	2	0	0	39	3	0	0	42	79		
07:15:00	12	0	0	0	3	12	1	38	0	0	0	39	0	0	0	0	3	0	0	58	14	0	0	72	123		
07:30:00	13	0	0	0	1	13	0	49	0	0	0	49	0	0	0	0	2	0	1	63	18	0	0	82	144		
07:45:00	25	0	3	0	6	28	1	50	0	0	0	51	0	0	1	0	1	1	1	89	15	0	0	105	185	531	
08:00:00	9	0	2	0	2	11	1	62	0	0	0	63	0	0	0	0	1	0	2	85	23	0	0	110	184	636	
08:15:00	16	0	2	0	2	18	1	46	0	0	0	47	0	0	1	0	1	1	3	89	20	0	0	112	178	691	
08:30:00	15	0	3	0	7	18	3	80	0	0	0	83	0	0	1	0	9	1	0	115	25	0	0	140	242	789	
08:45:00	23	1	2	0	0	26	7	58	2	0	0	67	2	0	0	0	2	2	1	100	31	0	1	132	227	831	
09:00:00	23	0	1	0	2	24	4	82	0	0	1	86	0	0	0	0	3	0	0	72	28	0	0	100	210	857	
09:15:00	14	0	2	0	1	16	4	36	1	0	0	41	2	0	0	0	3	2	0	65	23	0	0	88	147	826	
09:30:00	18	0	3	0	2	21	5	38	0	0	1	43	0	0	0	0	3	0	1	57	14	0	1	72	136	720	
09:45:00	14	0	3	0	3	17	3	36	1	0	0	40	0	0	0	0	2	0	2	85	16	0	0	103	160	653	
BREAK																											
16:00:00	37	0	6	0	4	43	2	90	0	0	0	92	2	0	1	0	5	3	1	80	14	0	1	95	233		
16:15:00	21	1	4	0	7	26	1	84	1	0	0	86	0	0	1	0	4	1	1	72	31	0	0	104	217		
16:30:00	23	0	0	0	5	23	6	90	0	0	0	96	0	0	1	0	3	1	1	65	17	0	0	83	203		
16:45:00	24	1	1	0	3	26	3	89	0	0	0	92	1	0	1	0	2	2	0	70	16	1	0	87	207	860	
17:00:00	48	0	5	0	3	53	7	107	0	0	0	114	1	0	2	0	6	3	2	82	26	0	0	110	280	907	
17:15:00	27	0	3	0	1	30	5	104	0	0	0	109	1	0	1	0	12	2	0	78	43	0	0	121	262	952	
17:30:00	29	0	6	0	4	35	1	90	0	0	0	91	0	0	0	0	7	0	1	87	26	0	0	114	240	989	
17:45:00	25	0	2	0	10	27	8	98	0	0	0	106	0	1	1	0	5	2	2	98	22	0	0	122	257	1039	
18:00:00	40	0	3	0	1	43	4	78	1	1	2	84	0	0	4	0	8	4	0	87	31	0	1	118	249	1008	
18:15:00	39	0	1	0	3	40	6	91	3	0	0	100	0	0	0	0	5	0	0	83	20	0	0	103	243	989	
18:30:00	23	0	6	0	0	29	3	76	0	0	0	79	1	0	0	0	7	1	3	108	24	0	0	135	244	993	
18:45:00	31	0	1	0	2	32	0	67	0	0	0	67	0	0	0	0	7	0	1	83	20	0	0	104	203	939	
Grand Total	553	3	59	0	74	615	76	1672	9	1	4	1758	10	1	15	0	103	26	23	1910	520	1	4	2454	4853	-	
Approach%	89.9%	0.5%	9.6%	0%	-	-	4.3%	95.1%	0.5%	0.1%	-	-	38.5%	3.8%	57.7%	0%	-	0.5%	0.9%	77.8%	21.2%	0%	-	-	-	-	
Totals %	11.4%	0.1%	1.2%	0%	12.7%	1.6%	34.5%	0.2%	0%	36.2%	0.2%	0%	0.3%	0%	0%	0%	0.5%	0.5%	39.4%	10.7%	0%	-	-	50.6%	-	-	
Heavy	2	0	2	0	-	-	1	37	0	0	-	-	0	0	0	0	-	0	47	2	0	-	-	-	-	-	
Heavy %	0.4%	0%	3.4%	0%	-	-	1.3%	2.2%	0%	0%	-	-	0%	0%	0%	0%	-	0%	2.5%	0.4%	0%	-	-	-	-	-	
Bicycles	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycle %	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Peak Hour: 08:15 AM - 09:15 AM Weather: Scattered Clouds (6.79 °C)

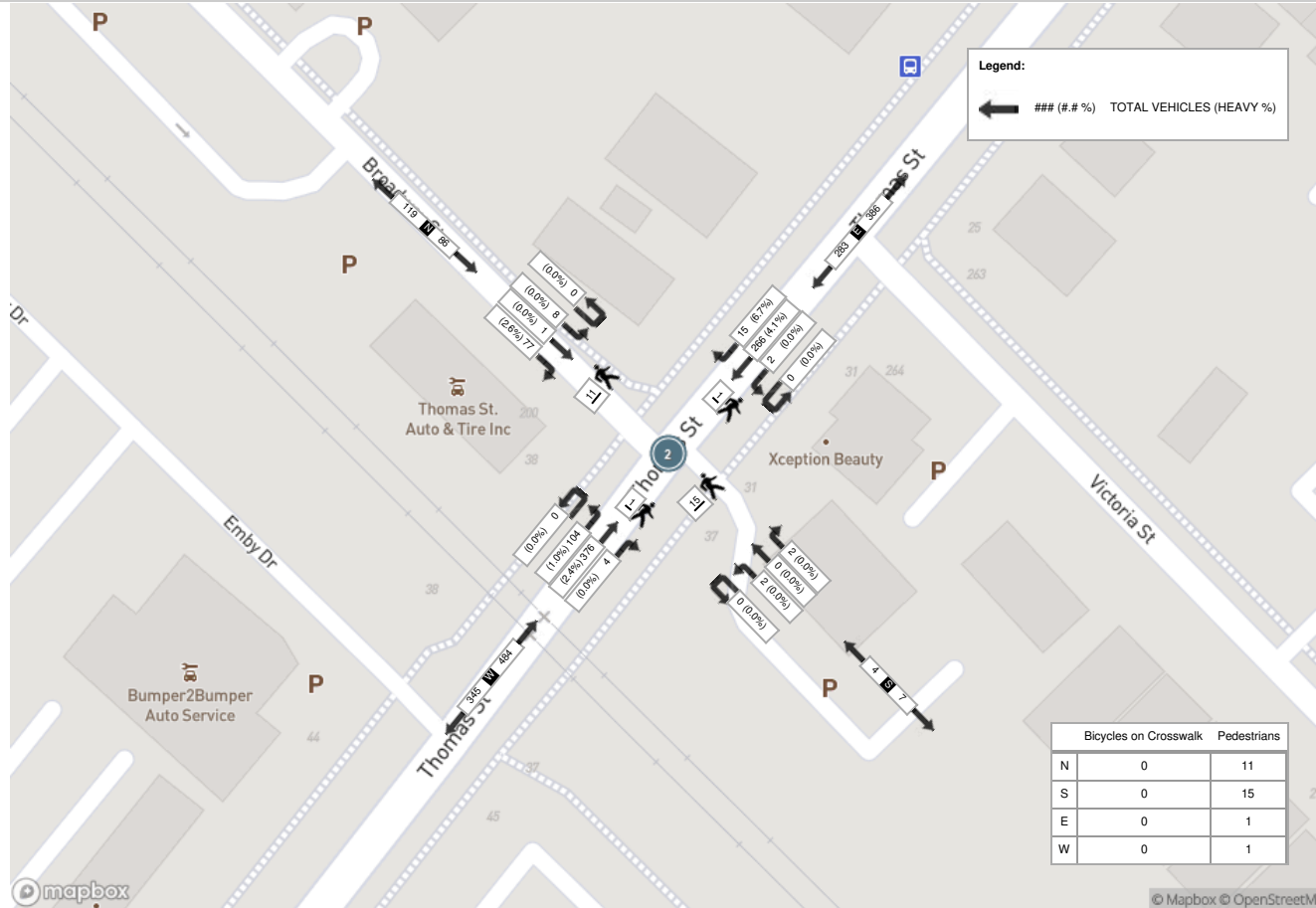
Start Time	N Approach BROADWAY ST						E Approach THOMAS ST						S Approach SOUTH DRIVEWAY						W Approach THOMAS ST						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
08:15:00	16	0	2	0	2	18	1	46	0	0	0	47	0	0	1	0	1	1	3	89	20	0	0	112	178
08:30:00	15	0	3	0	7	18	3	80	0	0	0	83	0	0	1	0	9	1	0	115	25	0	0	140	242
08:45:00	23	1	2	0	0	26	7	58	2	0	0	67	2	0	0	0	2	2	1	100	31	0	1	132	227
09:00:00	23	0	1	0	2	24	4	82	0	0	1	86	0	0	0	0	3	0	0	72	28	0	0	100	210
Grand Total	77	1	8	0	11	86	15	266	2	0	1	283	2	0	2	0	15	4	4	376	104	0	1	484	857
Approach%	89.5%	1.2%	9.3%	0%	-	-	5.3%	94%	0.7%	0%	-	-	50%	0%	50%	0%	-	0.8%	77.7%	21.5%	0%	-	-	-	
Totals %	9%	0.1%	0.9%	0%	10%	10%	1.8%	31%	0.2%	0%	33%	33%	0.2%	0%	0.2%	0%	0.5%	0.5%	43.9%	12.1%	0%	56.5%	-	-	
PHF	0.84	0.25	0.67	0	0.83	0.83	0.54	0.81	0.25	0	0.82	0.82	0.25	0	0.5	0	0.5	0.33	0.82	0.84	0	0.86	-	-	
Heavy	2	0	0	0	2	2	1	11	0	0	12	12	0	0	0	0	0	0	9	1	0	10	-	-	
Heavy %	2.6%	0%	0%	0%	2.3%	2.3%	6.7%	4.1%	0%	0%	4.2%	4.2%	0%	0%	0%	0%	0%	0%	2.4%	1%	0%	2.1%	-	-	
Lights	75	1	8	0	84	84	14	254	2	0	270	270	2	0	2	0	4	4	367	103	0	474	-	-	
Lights %	97.4%	100%	100%	0%	97.7%	97.7%	93.3%	95.5%	100%	0%	95.4%	95.4%	100%	0%	100%	0%	100%	100%	97.6%	99%	0%	97.9%	-	-	
Single-Unit Trucks	1	0	0	0	1	1	0	2	0	0	2	2	0	0	0	0	0	0	1	0	0	1	-	-	
Single-Unit Trucks %	1.3%	0%	0%	0%	1.2%	1.2%	0%	0.8%	0%	0%	0.7%	0.7%	0%	0%	0%	0%	0%	0%	0.3%	0%	0%	0.2%	-	-	
Buses	1	0	0	0	1	1	1	9	0	0	10	10	0	0	0	0	0	0	8	1	0	9	-	-	
Buses %	1.3%	0%	0%	0%	1.2%	1.2%	6.7%	3.4%	0%	0%	3.5%	3.5%	0%	0%	0%	0%	0%	0%	2.1%	1%	0%	1.9%	-	-	
Bicycles on Road	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	-	-	
Bicycles on Road %	0%	0%	0%	0%	0%	0%	0%	0.4%	0%	0%	0.4%	0.4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-	-	
Pedestrians	-	-	-	-	11	-	-	-	-	1	-	-	-	-	-	15	-	-	-	-	-	1	-	-	
Pedestrians%	-	-	-	-	39.3%	-	-	-	-	3.6%	-	-	-	-	53.6%	-	-	-	-	-	-	3.6%	-	-	
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-	-	0	-	-	
Bicycles on Crosswalk%	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	-	-	0%	-	-	



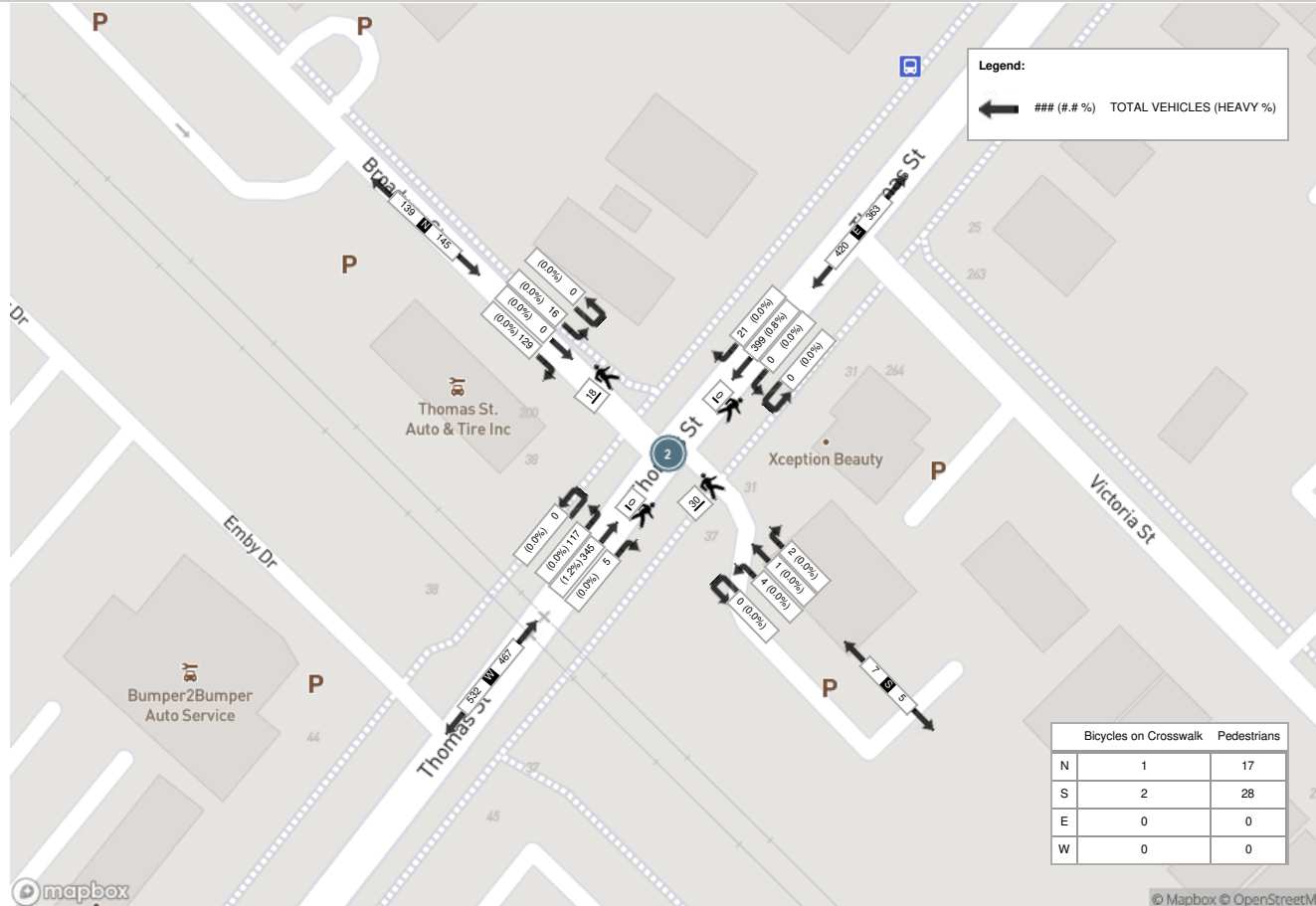
Peak Hour: 05:00 PM - 06:00 PM Weather: Broken Clouds (20.49 °C)

Start Time	N Approach BROADWAY ST						E Approach THOMAS ST						S Approach SOUTH DRIVEWAY						W Approach THOMAS ST						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
17:00:00	48	0	5	0	3	53	7	107	0	0	0	114	1	0	2	0	6	3	2	82	26	0	0	110	280
17:15:00	27	0	3	0	1	30	5	104	0	0	0	109	1	0	1	0	12	2	0	78	43	0	0	121	262
17:30:00	29	0	6	0	4	35	1	90	0	0	0	91	0	0	0	0	7	0	1	87	26	0	0	114	240
17:45:00	25	0	2	0	10	27	8	98	0	0	0	106	0	1	1	0	5	2	2	98	22	0	0	122	257
Grand Total	129	0	16	0	18	145	21	399	0	0	0	420	2	1	4	0	30	7	5	345	117	0	0	467	1039
Approach%	89%	0%	11%	0%		-	5%	95%	0%	0%		-	28.6%	14.3%	57.1%	0%		-	1.1%	73.9%	25.1%	0%		-	-
Totals %	12.4%	0%	1.5%	0%		14%	2%	38.4%	0%	0%		40.4%	0.2%	0.1%	0.4%	0%		0.7%	0.5%	33.2%	11.3%	0%		44.9%	-
PHF	0.67	0	0.67	0		0.68	0.66	0.93	0	0		0.92	0.5	0.25	0.5	0		0.58	0.63	0.88	0.68	0		0.96	-
Heavy	0	0	0	0		0	0	3	0	0		3	0	0	0	0		0	0	4	0	0		4	-
Heavy %	0%	0%	0%	0%		0%	0%	0.8%	0%	0%		0.7%	0%	0%	0%	0%		0%	0%	1.2%	0%	0%		0.9%	-
Lights	129	0	16	0		145	21	396	0	0		417	2	1	4	0		7	5	340	117	0		462	-
Lights %	100%	0%	100%	0%		100%	100%	99.2%	0%	0%		99.3%	100%	100%	100%	0%		100%	100%	98.6%	100%	0%		98.9%	-
Single-Unit Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	-
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	-
Buses	0	0	0	0		0	0	3	0	0		3	0	0	0	0		0	0	4	0	0		4	-
Buses %	0%	0%	0%	0%		0%	0%	0.8%	0%	0%		0.7%	0%	0%	0%	0%		0%	0%	1.2%	0%	0%		0.9%	-
Bicycles on Road	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	1	0	0		1	-
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0.3%	0%	0%		0.2%	-
Pedestrians	-	-	-	-	17		-	-	-	0		-	-	-	-	28		-	-	-	-	0		-	-
Pedestrians%	-	-	-	-	35.4%		-	-	-	0%		-	-	-	-	58.3%		-	-	-	-	0%		-	-
Bicycles on Crosswalk	-	-	-	-	1		-	-	-	0		-	-	-	-	2		-	-	-	-	0		-	-
Bicycles on Crosswalk%	-	-	-	-	2.1%		-	-	-	0%		-	-	-	-	4.2%		-	-	-	-	0%		-	-

Peak Hour: 08:15 AM - 09:15 AM Weather: Scattered Clouds (6.79 °C)



Peak Hour: 05:00 PM - 06:00 PM Weather: Broken Clouds (20.49 °C)





Turning Movement Count (3 - THOMAS ST & STREETSVILLE GO STATION PARKING LOT ENTRANCE)

Start Time	N Approach NORTH DRIVEWAY						Approach Total	E Approach THOMAS ST					Approach Total	S Approach STREETSVILLE GO STATION PARKING LOT ENTRANCE						Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total	Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Right E:N		Thru E:W	Left E:S	UTurn E:E	Peds E:	Right S:E		Thru S:N	Left S:W	UTurn S:S	Peds S:	Right W:S	Thru W:E									
07:00:00	0	0	1	0	1	1	0	18	18	0	0	36	5	0	19	0	1	24	72	38	0	0	0	110	171			
07:15:00	1	0	0	0	5	1	0	30	20	0	3	50	18	1	36	0	1	55	134	56	0	0	0	190	296			
07:30:00	0	0	0	0	4	0	0	34	29	0	0	63	17	0	66	0	3	83	148	67	0	0	1	215	361			
07:45:00	0	0	0	0	10	0	0	41	31	0	7	72	23	0	62	0	1	85	170	81	0	0	1	251	408	1236		
08:00:00	1	0	0	0	1	1	0	63	5	0	0	68	6	0	24	0	2	30	21	101	0	0	0	122	221	1286		
08:15:00	0	0	0	0	2	0	0	66	0	0	3	66	1	0	2	0	3	3	10	115	0	0	2	125	194	1184		
08:30:00	0	0	0	0	4	0	0	79	12	0	3	91	7	0	20	0	7	27	73	132	1	0	3	206	324	1147		
08:45:00	0	0	0	0	1	0	1	75	2	0	0	78	4	0	23	0	4	27	22	130	1	0	0	153	258	997		
09:00:00	1	0	0	0	4	1	0	105	2	0	0	107	0	0	0	0	2	0	2	102	0	0	0	104	212	988		
09:15:00	0	0	0	0	1	0	0	47	2	0	0	49	2	0	5	0	1	7	1	87	0	0	0	88	144	938		
09:30:00	1	0	2	0	2	3	2	50	1	0	0	53	1	0	0	0	2	1	2	72	0	0	0	74	131	745		
09:45:00	0	0	2	0	1	2	1	44	3	0	0	48	2	0	4	0	0	6	2	105	2	0	0	109	165	652		
BREAK																												
16:00:00	0	0	0	0	3	0	0	121	3	0	0	124	3	0	1	0	3	4	9	85	1	0	0	95	223			
16:15:00	4	0	1	0	8	5	2	100	7	0	1	109	22	0	66	0	5	88	13	82	2	0	3	97	299			
16:30:00	0	0	1	0	4	1	3	119	3	0	0	125	3	0	8	0	2	11	7	78	0	0	1	85	222			
16:45:00	0	0	2	0	4	2	2	106	2	0	0	110	0	0	5	0	1	5	18	86	2	0	0	106	223	967		
17:00:00	4	0	1	0	4	5	3	134	13	1	1	151	29	0	79	0	4	108	31	85	4	0	0	120	384	1128		
17:15:00	0	0	1	0	4	1	1	139	8	0	1	148	21	0	61	0	4	82	19	88	0	0	0	107	338	1167		
17:30:00	5	0	1	0	5	6	1	113	12	0	2	126	37	1	114	0	11	152	33	91	0	0	4	124	408	1353		
17:45:00	1	0	0	0	9	1	1	117	11	0	3	129	5	0	29	0	3	34	21	110	2	0	0	133	297	1427		
18:00:00	0	0	0	0	4	0	3	107	15	0	1	125	39	0	104	0	7	143	35	76	0	0	2	111	379	1422		
18:15:00	4	0	2	0	2	6	0	126	7	0	0	133	7	0	51	0	4	58	19	95	2	0	0	116	313	1397		
18:30:00	1	0	1	0	5	2	0	91	7	0	1	98	24	0	86	0	7	110	21	109	2	0	0	132	342	1331		
18:45:00	1	0	0	0	2	1	2	97	4	0	0	103	1	0	13	0	5	14	6	102	0	0	1	108	226	1260		
Grand Total	24	0	15	0	90	39	22	2022	217	1	26	2262	277	2	878	0	83	1157	889	2173	19	0	18	3081	6539	-		
Approach%	61.5%	0%	38.5%	0%	-	-	1%	89.4%	9.6%	0%	-	-	23.9%	0.2%	75.9%	0%	-	-	28.9%	70.5%	0.6%	0%	-	-	-	-		
Totals %	0.4%	0%	0.2%	0%	0.6%	0.3%	0.3%	30.9%	3.3%	0%	34.6%	4.2%	0%	13.4%	0%	17.7%	13.6%	33.2%	0.3%	13.4%	0%	47.1%	-	-	-	-		
Heavy	0	0	0	0	-	-	1	35	6	0	-	-	5	0	20	0	-	-	18	40	0	0	-	-	-	-		
Heavy %	0%	0%	0%	0%	-	-	4.5%	1.7%	2.8%	0%	-	-	1.8%	0%	2.3%	0%	-	-	2%	1.8%	0%	0%	-	-	-	-		
Bicycles	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Bicycle %	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		



Peak Hour: 07:15 AM - 08:15 AM Weather: Scattered Clouds (6.79 °C)

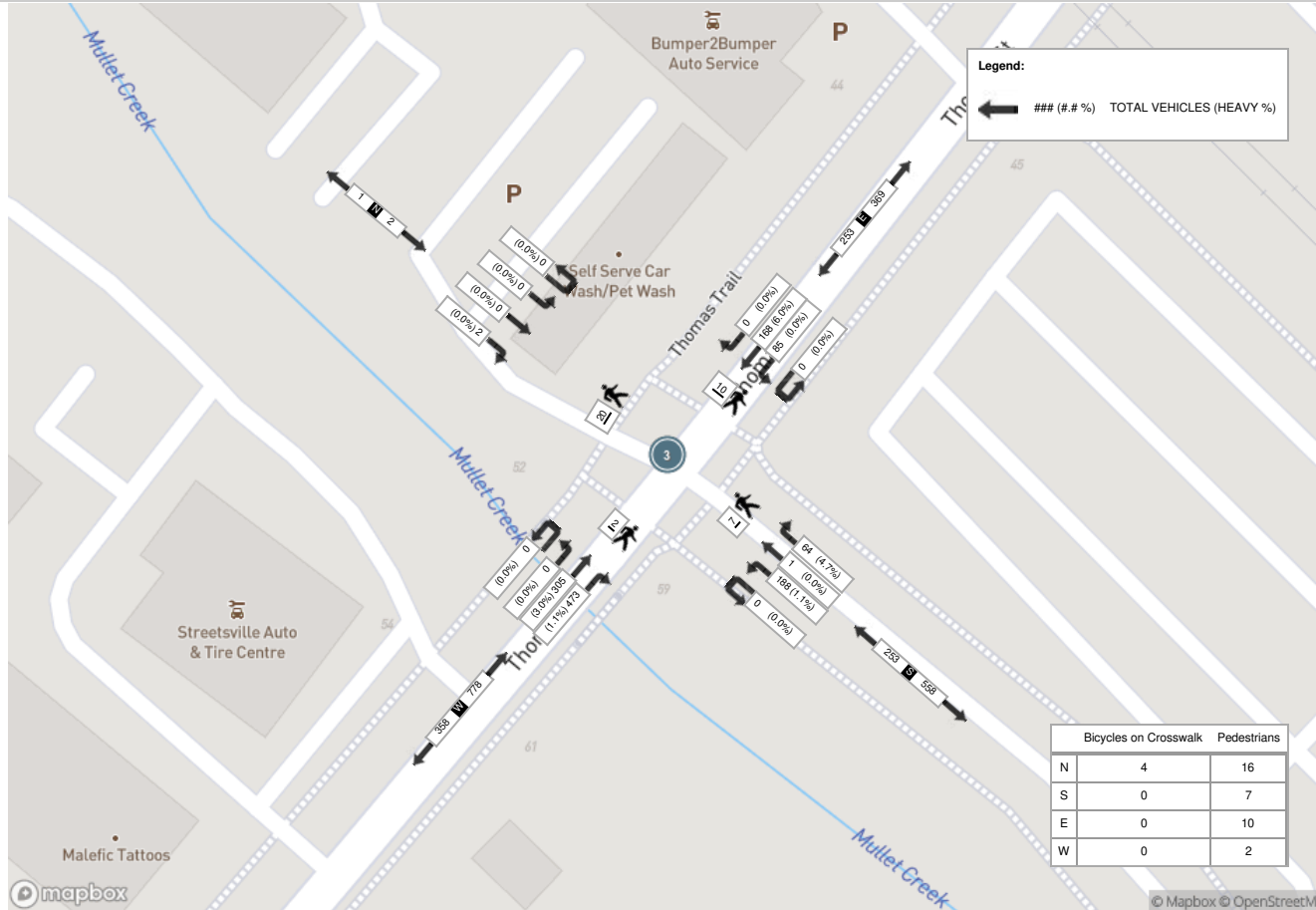
Start Time	N Approach NORTH DRIVEWAY						E Approach THOMAS ST						S Approach STREETSVILLE GO STATION PARKING LOT ENTRANCE						W Approach THOMAS ST						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
07:15:00	1	0	0	0	5	1	0	30	20	0	3	50	18	1	36	0	1	55	134	56	0	0	0	190	296
07:30:00	0	0	0	0	4	0	0	34	29	0	0	63	17	0	66	0	3	83	148	67	0	0	1	215	361
07:45:00	0	0	0	0	10	0	0	41	31	0	7	72	23	0	62	0	1	85	170	81	0	0	1	251	408
08:00:00	1	0	0	0	1	1	0	63	5	0	0	68	6	0	24	0	2	30	21	101	0	0	0	122	221
Grand Total	2	0	0	0	20	2	0	168	85	0	10	253	64	1	188	0	7	253	473	305	0	0	2	778	1286
Approach%	100%	0%	0%	0%	-	-	0%	66.4%	33.6%	0%	-	-	25.3%	0.4%	74.3%	0%	-	-	60.8%	39.2%	0%	0%	-	-	-
Totals %	0.2%	0%	0%	0%	0.2%	0.2%	0%	13.1%	6.6%	0%	19.7%	19.7%	5%	0.1%	14.6%	0%	19.7%	19.7%	36.8%	23.7%	0%	0%	60.5%	60.5%	-
PHF	0.5	0	0	0	0.5	0.5	0	0.67	0.69	0	0.88	0.88	0.7	0.25	0.71	0	0.74	0.74	0.7	0.75	0	0	0.77	0.77	-
Heavy	0	0	0	0	0	0	0	10	0	0	10	10	3	0	2	0	5	5	5	9	0	0	14	14	-
Heavy %	0%	0%	0%	0%	0%	0%	0%	6%	0%	0%	4%	4%	4.7%	0%	1.1%	0%	2%	2%	1.1%	3%	0%	0%	1.8%	1.8%	-
Lights	2	0	0	0	2	2	0	157	85	0	242	242	61	1	186	0	248	248	468	295	0	0	763	763	-
Lights %	100%	0%	0%	0%	100%	100%	0%	93.5%	100%	0%	95.7%	95.7%	95.3%	100%	98.9%	0%	98%	98%	98.9%	96.7%	0%	0%	98.1%	98.1%	-
Single-Unit Trucks	0	0	0	0	0	0	0	4	0	0	4	4	0	0	0	0	0	0	0	2	0	0	2	2	-
Single-Unit Trucks %	0%	0%	0%	0%	0%	0%	0%	2.4%	0%	0%	1.6%	1.6%	0%	0%	0%	0%	0%	0%	0%	0.7%	0%	0%	0.3%	0.3%	-
Buses	0	0	0	0	0	0	0	6	0	0	6	6	3	0	2	0	5	5	5	7	0	0	12	12	-
Buses %	0%	0%	0%	0%	0%	0%	0%	3.6%	0%	0%	2.4%	2.4%	4.7%	0%	1.1%	0%	2%	2%	1.1%	2.3%	0%	0%	1.5%	1.5%	-
Bicycles on Road	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	1	0	0	1	1	-
Bicycles on Road %	0%	0%	0%	0%	0%	0%	0%	0.6%	0%	0%	0.4%	0.4%	0%	0%	0%	0%	0%	0%	0%	0.3%	0%	0%	0.1%	0.1%	-
Pedestrians	-	-	-	-	16	-	-	-	-	-	10	-	-	-	-	-	7	-	-	-	-	-	2	-	-
Pedestrians%	-	-	-	-	41%	-	-	-	-	-	25.6%	-	-	-	-	-	17.9%	-	-	-	-	-	5.1%	-	-
Bicycles on Crosswalk	-	-	-	-	4	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	-	10.3%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-	-	0%	-	-



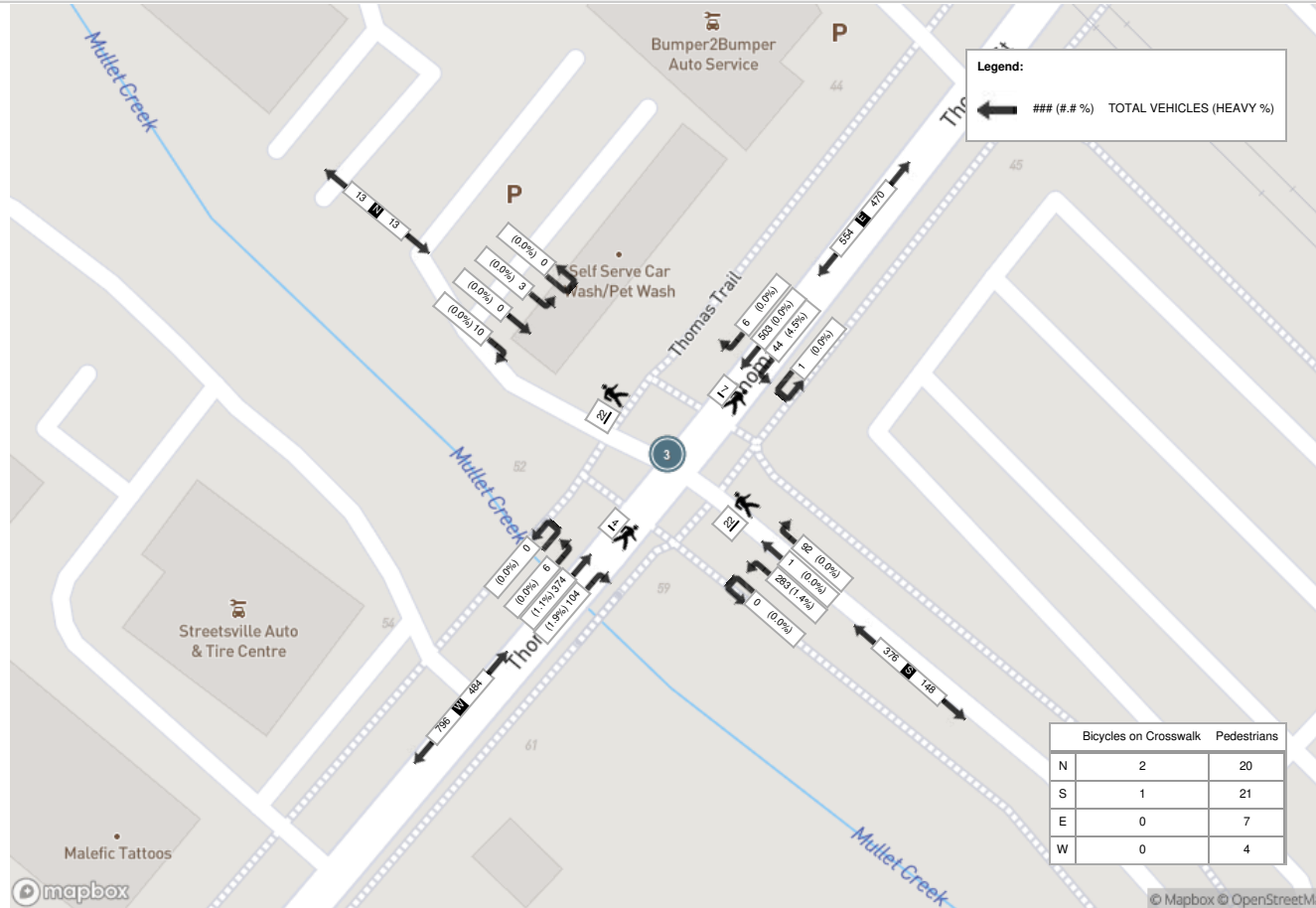
Peak Hour: 05:00 PM - 06:00 PM Weather: Broken Clouds (20.49 °C)

Start Time	N Approach NORTH DRIVEWAY						E Approach THOMAS ST						S Approach STREETSVILLE GO STATION PARKING LOT ENTRANCE						W Approach THOMAS ST						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
17:00:00	4	0	1	0	4	5	3	134	13	1	1	151	29	0	79	0	4	108	31	85	4	0	0	120	384
17:15:00	0	0	1	0	4	1	1	139	8	0	1	148	21	0	61	0	4	82	19	88	0	0	0	107	338
17:30:00	5	0	1	0	5	6	1	113	12	0	2	126	37	1	114	0	11	152	33	91	0	0	4	124	408
17:45:00	1	0	0	0	9	1	1	117	11	0	3	129	5	0	29	0	3	34	21	110	2	0	0	133	297
Grand Total	10	0	3	0	22	13	6	503	44	1	7	554	92	1	283	0	22	376	104	374	6	0	4	484	1427
Approach%	76.9%	0%	23.1%	0%	-	-	1.1%	90.8%	7.9%	0.2%	-	-	24.5%	0.3%	75.3%	0%	-	-	21.5%	77.3%	1.2%	0%	-	-	-
Totals %	0.7%	0%	0.2%	0%	0.9%	0.9%	0.4%	35.2%	3.1%	0.1%	38.8%	38.8%	6.4%	0.1%	19.8%	0%	26.3%	26.3%	7.3%	26.2%	0.4%	0%	33.9%	33.9%	-
PHF	0.5	0	0.75	0	0.54	0.54	0.5	0.9	0.85	0.25	0.92	0.92	0.62	0.25	0.62	0	0.62	0.62	0.79	0.85	0.38	0	0.91	0.91	-
Heavy	0	0	0	0	0	0	0	0	2	0	2	2	0	0	4	0	4	4	2	4	0	0	6	6	-
Heavy %	0%	0%	0%	0%	0%	0%	0%	0%	4.5%	0%	0.4%	0.4%	0%	0%	1.4%	0%	1.1%	1.1%	1.9%	1.1%	0%	0%	1.2%	1.2%	-
Lights	10	0	3	0	13	13	6	503	42	1	552	552	92	1	279	0	372	372	102	370	6	0	478	478	-
Lights %	100%	0%	100%	0%	100%	100%	100%	100%	95.5%	100%	99.6%	99.6%	100%	100%	98.6%	0%	98.9%	98.9%	98.1%	98.9%	100%	0%	98.8%	98.8%	-
Single-Unit Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	-
Single-Unit Trucks %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0.3%	0%	0%	0.2%	0.2%	-
Buses	0	0	0	0	0	0	0	0	2	0	2	2	0	0	4	0	4	4	2	3	0	0	5	5	-
Buses %	0%	0%	0%	0%	0%	0%	0%	0%	4.5%	0%	0.4%	0.4%	0%	0%	1.4%	0%	1.1%	1.1%	1.9%	0.8%	0%	0%	1%	1%	-
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-
Bicycles on Road %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-
Pedestrians	-	-	-	-	20	-	-	-	-	-	7	-	-	-	-	-	21	-	-	-	-	-	4	-	-
Pedestrians%	-	-	-	-	36.4%	-	-	-	-	-	12.7%	-	-	-	-	-	38.2%	-	-	-	-	-	7.3%	-	-
Bicycles on Crosswalk	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	-	3.6%	-	-	-	-	-	0%	-	-	-	-	-	1.8%	-	-	-	-	-	0%	-	-

Peak Hour: 07:15 AM - 08:15 AM Weather: Scattered Clouds (6.79 °C)



Peak Hour: 05:00 PM - 06:00 PM Weather: Broken Clouds (20.49 °C)





Turning Movement Count (4 . THOMAS ST & JOYMAR DR)

Start Time	N Approach JOYMAR DR					E Approach THOMAS ST					W Approach THOMAS ST					Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	UTurn E:E	Peds E:	Approach Total	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
07:00:00	8	3	0	2	11	2	31	0	0	33	104	13	0	0	117	161	
07:15:00	10	3	0	3	13	5	57	0	0	62	193	19	0	0	212	287	
07:30:00	7	4	0	1	11	7	95	0	1	102	206	24	0	0	230	343	
07:45:00	18	8	0	4	26	8	91	0	0	99	246	41	0	0	287	412	1203
08:00:00	54	7	0	2	61	15	79	0	1	94	113	68	0	0	181	336	1378
08:15:00	39	8	0	0	47	7	62	0	0	69	117	26	0	0	143	259	1350
08:30:00	15	7	0	3	22	8	89	0	1	97	200	25	0	0	225	344	1351
08:45:00	16	2	0	2	18	7	97	0	0	104	154	23	0	0	177	299	1238
09:00:00	33	2	0	4	35	2	104	0	0	106	100	28	0	0	128	269	1171
09:15:00	13	6	0	0	19	4	44	0	0	48	88	19	0	0	107	174	1086
09:30:00	17	0	0	3	17	2	53	0	1	55	68	12	0	0	80	152	894
09:45:00	13	5	0	0	18	5	39	0	0	44	102	14	0	0	116	178	773
BREAK																	
16:00:00	30	4	0	2	34	6	117	0	1	123	92	19	0	0	111	268	
16:15:00	31	8	0	7	39	10	158	0	0	168	91	23	0	0	114	321	
16:30:00	26	4	0	2	30	5	119	0	0	124	76	20	0	0	96	250	
16:45:00	33	7	0	3	40	7	102	0	1	109	99	18	0	0	117	266	1105
17:00:00	35	5	0	2	40	10	199	0	0	209	122	26	0	0	148	397	1234
17:15:00	37	5	0	3	42	9	197	0	0	206	102	21	0	0	123	371	1284
17:30:00	37	13	0	2	50	7	216	0	0	223	120	17	0	0	137	410	1444
17:45:00	27	8	0	6	35	9	146	0	0	155	123	14	0	0	137	327	1505
18:00:00	26	1	0	3	27	8	191	0	0	199	113	18	0	0	131	357	1465
18:15:00	24	3	0	1	27	6	174	0	1	180	109	17	0	1	126	333	1427
18:30:00	26	5	0	3	31	7	182	0	1	189	125	20	0	0	145	365	1382
18:45:00	20	3	0	3	23	7	112	0	0	119	105	15	0	0	120	262	1317
Grand Total	595	121	0	61	716	163	2754	0	8	2917	2968	540	0	1	3508	7141	-
Approach%	83.1%	16.9%	0%	-	-	5.6%	94.4%	0%	-	-	84.6%	15.4%	0%	-	-	-	-
Totals %	8.3%	1.7%	0%	-	10%	2.3%	38.6%	0%	-	40.8%	41.6%	7.6%	0%	-	49.1%	-	-
Heavy	18	1	0	-	-	2	53	0	-	-	56	11	0	-	-	-	-
Heavy %	3%	0.8%	0%	-	-	1.2%	1.9%	0%	-	-	1.9%	2%	0%	-	-	-	-
Bicycles	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycle %	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Peak Hour: 07:15 AM - 08:15 AM Weather: Scattered Clouds (6.79 °C)

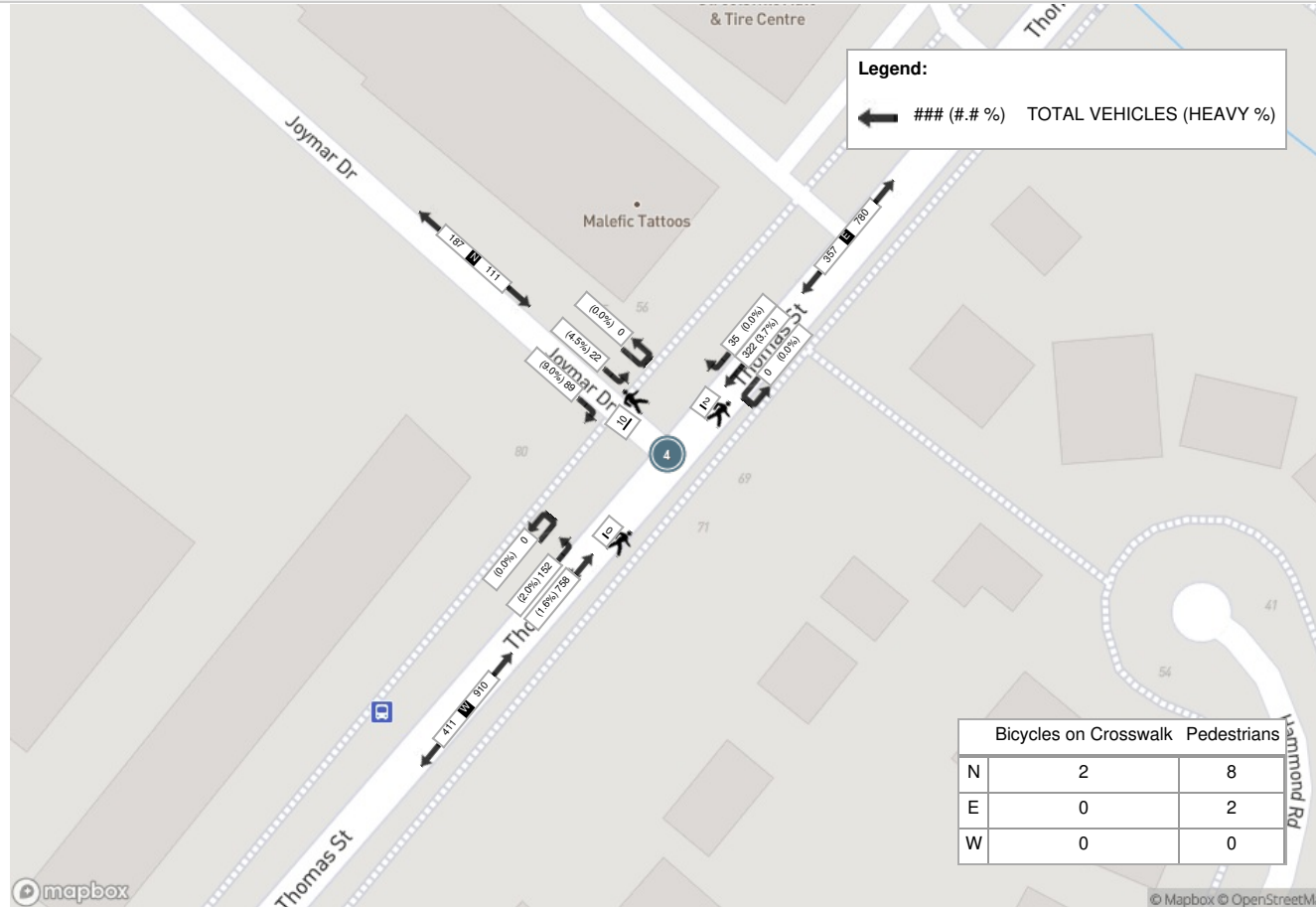
Start Time	N Approach JOYMAR DR					E Approach THOMAS ST					W Approach THOMAS ST					Int. Total (15 min)
	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	Thru	Left	UTurn	Peds	Approach Total	
07:15:00	10	3	0	3	13	5	57	0	0	62	193	19	0	0	212	287
07:30:00	7	4	0	1	11	7	95	0	1	102	206	24	0	0	230	343
07:45:00	18	8	0	4	26	8	91	0	0	99	246	41	0	0	287	412
08:00:00	54	7	0	2	61	15	79	0	1	94	113	68	0	0	181	336
Grand Total	89	22	0	10	111	35	322	0	2	357	758	152	0	0	910	1378
Approach%	80.2%	19.8%	0%	-	-	9.8%	90.2%	0%	-	-	83.3%	16.7%	0%	-	-	-
Totals %	6.5%	1.6%	0%	8.1%	2.5%	23.4%	0%	25.9%	55%	11%	0%	66%	-	-	-	-
PHF	0.41	0.69	0	0.45	0.58	0.85	0	0.88	0.77	0.56	0	0.79	-	-	-	-
Heavy	8	1	0	9	0	12	0	12	12	3	0	15	-	-	-	-
Heavy %	9%	4.5%	0%	8.1%	0%	3.7%	0%	3.4%	1.6%	2%	0%	1.6%	-	-	-	-
Lights	81	21	0	102	35	309	0	344	745	149	0	894	-	-	-	-
Lights %	91%	95.5%	0%	91.9%	100%	96%	0%	96.4%	98.3%	98%	0%	98.2%	-	-	-	-
Single-Unit Trucks	2	0	0	2	0	4	0	4	2	0	0	2	-	-	-	-
Single-Unit Trucks %	2.2%	0%	0%	1.8%	0%	1.2%	0%	1.1%	0.3%	0%	0%	0.2%	-	-	-	-
Buses	6	1	0	7	0	8	0	8	10	3	0	13	-	-	-	-
Buses %	6.7%	4.5%	0%	6.3%	0%	2.5%	0%	2.2%	1.3%	2%	0%	1.4%	-	-	-	-
Bicycles on Road	0	0	0	0	0	1	0	1	1	0	0	1	-	-	-	-
Bicycles on Road %	0%	0%	0%	0%	0%	0.3%	0%	0.3%	0.1%	0%	0%	0.1%	-	-	-	-
Pedestrians	-	-	-	8	-	-	-	2	-	-	-	0	-	-	-	-
Pedestrians%	-	-	-	66.7%	-	-	-	16.7%	-	-	-	0%	-	-	-	-
Bicycles on Crosswalk	-	-	-	2	-	-	-	0	-	-	-	0	-	-	-	-
Bicycles on Crosswalk%	-	-	-	16.7%	-	-	-	0%	-	-	-	0%	-	-	-	-



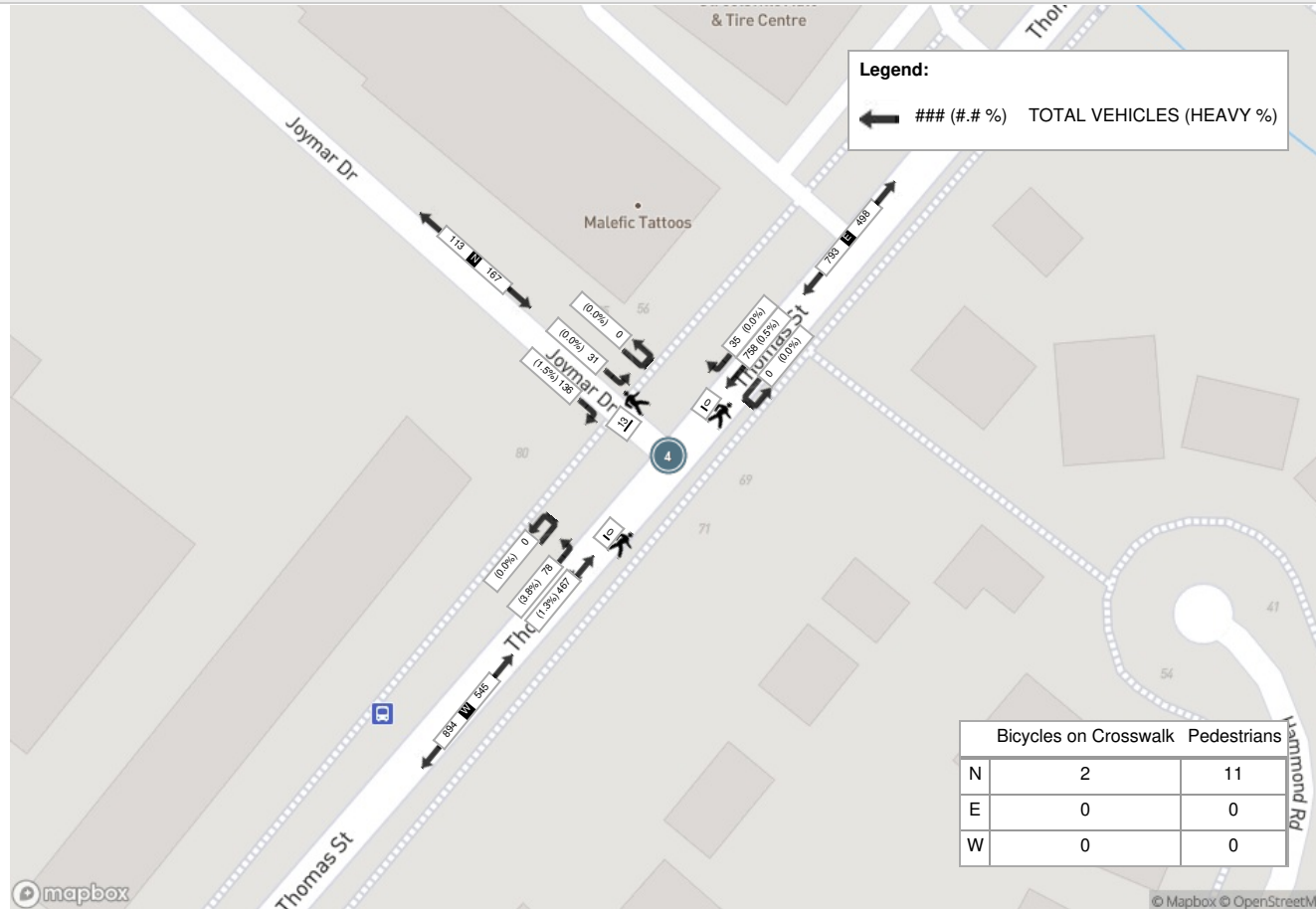
Peak Hour: 05:00 PM - 06:00 PM Weather: Broken Clouds (20.49 °C)

Start Time	N Approach JOYMAR DR					E Approach THOMAS ST					W Approach THOMAS ST					Int. Total (15 min)
	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	Thru	Left	UTurn	Peds	Approach Total	
17:00:00	35	5	0	2	40	10	199	0	0	209	122	26	0	0	148	397
17:15:00	37	5	0	3	42	9	197	0	0	206	102	21	0	0	123	371
17:30:00	37	13	0	2	50	7	216	0	0	223	120	17	0	0	137	410
17:45:00	27	8	0	6	35	9	146	0	0	155	123	14	0	0	137	327
Grand Total	136	31	0	13	167	35	758	0	0	793	467	78	0	0	545	1505
Approach%	81.4%	18.6%	0%	-	-	4.4%	95.6%	0%	-	-	85.7%	14.3%	0%	-	-	-
Totals %	9%	2.1%	0%	11.1%	11.1%	2.3%	50.4%	0%	52.7%	52.7%	31%	5.2%	0%	36.2%	36.2%	-
PHF	0.92	0.6	0	0.84	0.84	0.88	0.88	0	0.89	0.89	0.95	0.75	0	0.92	0.92	-
Heavy	2	0	0	2	2	0	4	0	4	4	6	3	0	9	9	-
Heavy %	1.5%	0%	0%	1.2%	1.2%	0%	0.5%	0%	0.5%	0.5%	1.3%	3.8%	0%	1.7%	1.7%	-
Lights	134	30	0	164	164	35	754	0	789	789	460	75	0	535	535	-
Lights %	98.5%	96.8%	0%	98.2%	98.2%	100%	99.5%	0%	99.5%	99.5%	98.5%	96.2%	0%	98.2%	98.2%	-
Single-Unit Trucks	2	0	0	2	2	0	0	0	0	0	1	3	0	4	4	-
Single-Unit Trucks %	1.5%	0%	0%	1.2%	1.2%	0%	0%	0%	0%	0%	0.2%	3.8%	0%	0.7%	0.7%	-
Buses	0	0	0	0	0	0	4	0	4	4	5	0	0	5	5	-
Buses %	0%	0%	0%	0%	0%	0%	0.5%	0%	0.5%	0.5%	1.1%	0%	0%	0.9%	0.9%	-
Bicycles on Road	0	1	0	1	1	0	0	0	0	0	1	0	0	1	1	-
Bicycles on Road %	0%	3.2%	0%	0.6%	0.6%	0%	0%	0%	0%	0%	0.2%	0%	0%	0.2%	0.2%	-
Pedestrians	-	-	-	11	-	-	-	0	-	-	-	-	-	0	-	-
Pedestrians%	-	-	-	84.6%	-	-	-	0%	-	-	-	-	-	0%	-	-
Bicycles on Crosswalk	-	-	-	2	-	-	-	0	-	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	15.4%	-	-	-	0%	-	-	-	-	-	0%	-	-

Peak Hour: 07:15 AM - 08:15 AM Weather: Scattered Clouds (6.79 °C)



Peak Hour: 05:00 PM - 06:00 PM Weather: Broken Clouds (20.49 °C)





Turning Movement Count (5 . THOMAS ST & HILLSIDE DR)

Start Time	E Approach THOMAS ST					S Approach HILLSIDE DR					W Approach THOMAS ST					Int. Total (15 min)	Int. Total (1 hr)
	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	UTurn W:W	Peds W:	Approach Total		
07:00:00	34	0	0	0	34	7	5	0	1	12	2	110	0	0	112	158	
07:15:00	66	1	0	0	67	0	3	0	0	3	4	223	0	0	227	297	
07:30:00	94	4	0	0	98	16	9	0	0	25	4	206	0	0	210	333	
07:45:00	108	4	0	0	112	14	13	0	3	27	6	277	0	0	283	422	1210
08:00:00	131	6	0	0	137	13	17	0	0	30	6	162	0	0	168	335	1387
08:15:00	94	7	0	1	101	15	8	0	7	23	5	127	0	0	132	256	1346
08:30:00	92	9	0	0	101	14	7	0	2	21	5	211	0	0	216	338	1351
08:45:00	108	6	0	0	114	12	16	0	2	28	8	162	0	0	170	312	1241
09:00:00	133	4	0	0	137	7	14	0	2	21	8	121	0	0	129	287	1193
09:15:00	54	4	0	1	58	6	9	0	2	15	6	102	0	0	108	181	1118
09:30:00	63	3	0	0	66	11	8	0	2	19	10	71	0	0	81	166	946
09:45:00	54	1	0	1	55	13	7	0	0	20	9	100	0	0	109	184	818
BREAK																	
16:00:00	136	15	0	0	151	10	4	0	2	14	14	103	0	0	117	282	
16:15:00	182	8	0	0	190	10	4	0	3	14	14	102	0	0	116	320	
16:30:00	132	15	0	0	147	9	5	0	5	14	9	91	0	0	100	261	
16:45:00	126	9	0	1	135	9	7	0	1	16	12	105	0	0	117	268	1131
17:00:00	221	11	0	0	232	10	7	0	1	17	16	138	0	0	154	403	1252
17:15:00	227	12	0	0	239	13	10	0	4	23	9	109	0	0	118	380	1312
17:30:00	242	13	0	0	255	8	9	0	1	17	15	125	0	0	140	412	1463
17:45:00	163	9	0	0	172	14	6	0	7	20	13	127	0	0	140	332	1527
18:00:00	209	7	0	0	216	8	7	0	0	15	11	120	0	0	131	362	1486
18:15:00	190	9	0	0	199	11	9	0	8	20	12	114	0	0	126	345	1451
18:30:00	203	7	0	0	210	8	7	0	0	15	8	140	0	0	148	373	1412
18:45:00	122	8	0	0	130	10	8	0	4	18	14	107	0	0	121	269	1349
Grand Total	3184	172	0	4	3356	248	199	0	57	447	220	3253	0	0	3473	7276	-
Approach%	94.9%	5.1%	0%		-	55.5%	44.5%	0%		-	6.3%	93.7%	0%		-	-	-
Totals %	43.8%	2.4%	0%		46.1%	3.4%	2.7%	0%		6.1%	3%	44.7%	0%		47.7%	-	-
Heavy	61	8	0		-	4	13	0		-	10	62	0		-	-	-
Heavy %	1.9%	4.7%	0%		-	1.6%	6.5%	0%		-	4.5%	1.9%	0%		-	-	-
Bicycles	-	-	-		-	-	-	-		-	-	-	-		-	-	-
Bicycle %	-	-	-		-	-	-	-		-	-	-	-		-	-	-



Peak Hour: 07:15 AM - 08:15 AM Weather: Scattered Clouds (6.79 °C)

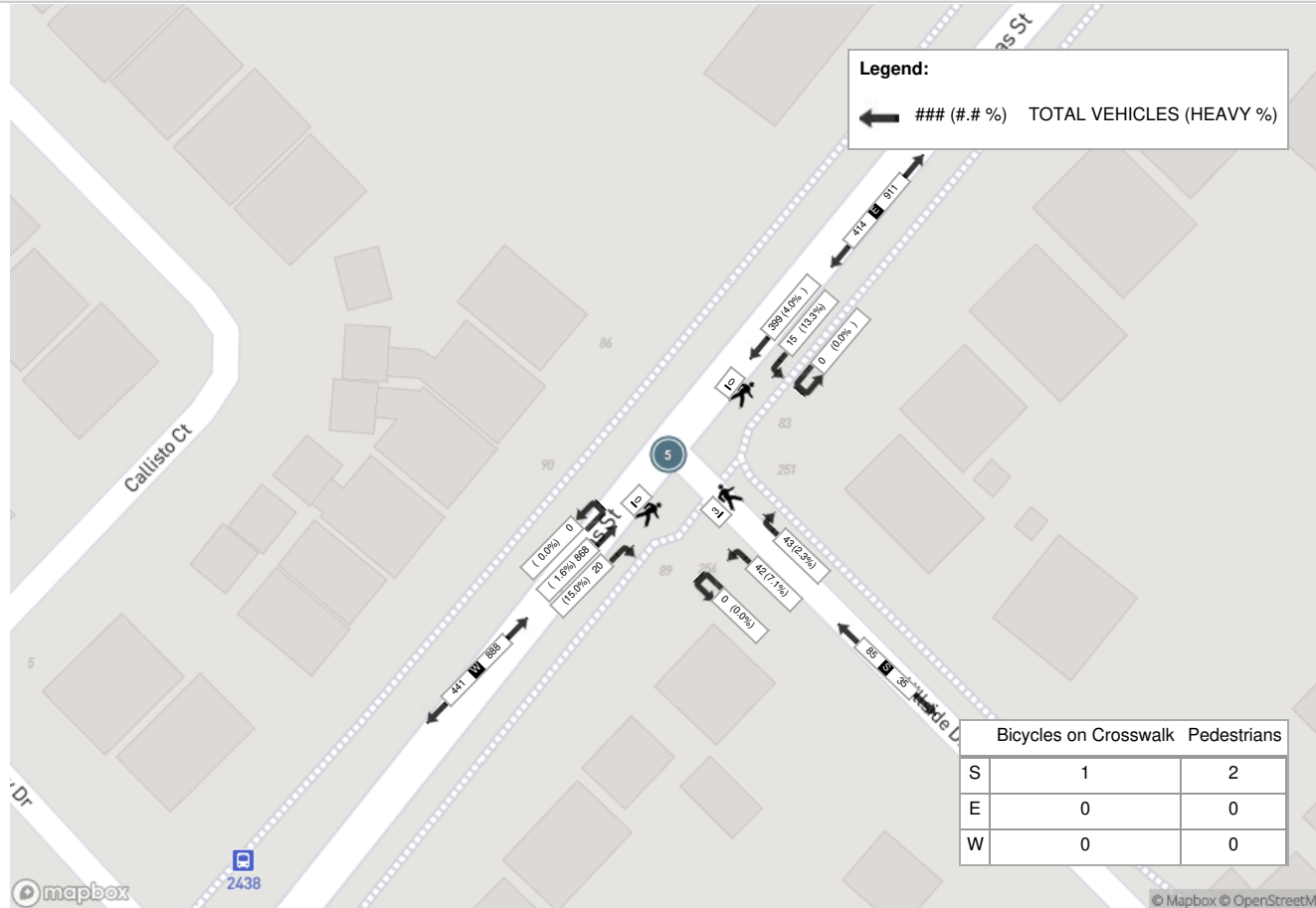
Start Time	E Approach THOMAS ST					S Approach HILLSIDE DR					W Approach THOMAS ST				Int. Total (15 min)	
	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds		Approach Total
07:15:00	66	1	0	0	67	0	3	0	0	3	4	223	0	0	227	297
07:30:00	94	4	0	0	98	16	9	0	0	25	4	206	0	0	210	333
07:45:00	108	4	0	0	112	14	13	0	3	27	6	277	0	0	283	422
08:00:00	131	6	0	0	137	13	17	0	0	30	6	162	0	0	168	335
Grand Total	399	15	0	0	414	43	42	0	3	85	20	868	0	0	888	1387
Approach%	96.4%	3.6%	0%	-	-	50.6%	49.4%	0%	-	-	2.3%	97.7%	0%	-	-	-
Totals %	28.8%	1.1%	0%	29.8%	3.1%	3%	0%	6.1%	1.4%	62.6%	0%	64%	-	-	-	-
PHF	0.76	0.63	0	0.76	0.67	0.62	0	0.71	0.83	0.78	0	0.78	-	-	-	-
Heavy	16	2	0	18	1	3	0	4	3	14	0	17	-	-	-	-
Heavy %	4%	13.3%	0%	4.3%	2.3%	7.1%	0%	4.7%	15%	1.6%	0%	1.9%	-	-	-	-
Lights	382	13	0	395	42	39	0	81	17	853	0	870	-	-	-	-
Lights %	95.7%	86.7%	0%	95.4%	97.7%	92.9%	0%	95.3%	85%	98.3%	0%	98%	-	-	-	-
Single-Unit Trucks	5	0	0	5	0	0	0	0	0	2	0	2	-	-	-	-
Single-Unit Trucks %	1.3%	0%	0%	1.2%	0%	0%	0%	0%	0%	0.2%	0%	0.2%	-	-	-	-
Buses	11	2	0	13	1	3	0	4	3	12	0	15	-	-	-	-
Buses %	2.8%	13.3%	0%	3.1%	2.3%	7.1%	0%	4.7%	15%	1.4%	0%	1.7%	-	-	-	-
Bicycles on Road	1	0	0	1	0	0	0	0	0	1	0	1	-	-	-	-
Bicycles on Road %	0.3%	0%	0%	0.2%	0%	0%	0%	0%	0%	0.1%	0%	0.1%	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	2	-	-	-	0	-	-	-	-
Pedestrians%	-	-	-	0%	-	-	-	66.7%	-	-	-	0%	-	-	-	-
Bicycles on Crosswalk	-	-	-	0	-	-	-	1	-	-	-	0	-	-	-	-
Bicycles on Crosswalk%	-	-	-	0%	-	-	-	33.3%	-	-	-	0%	-	-	-	-



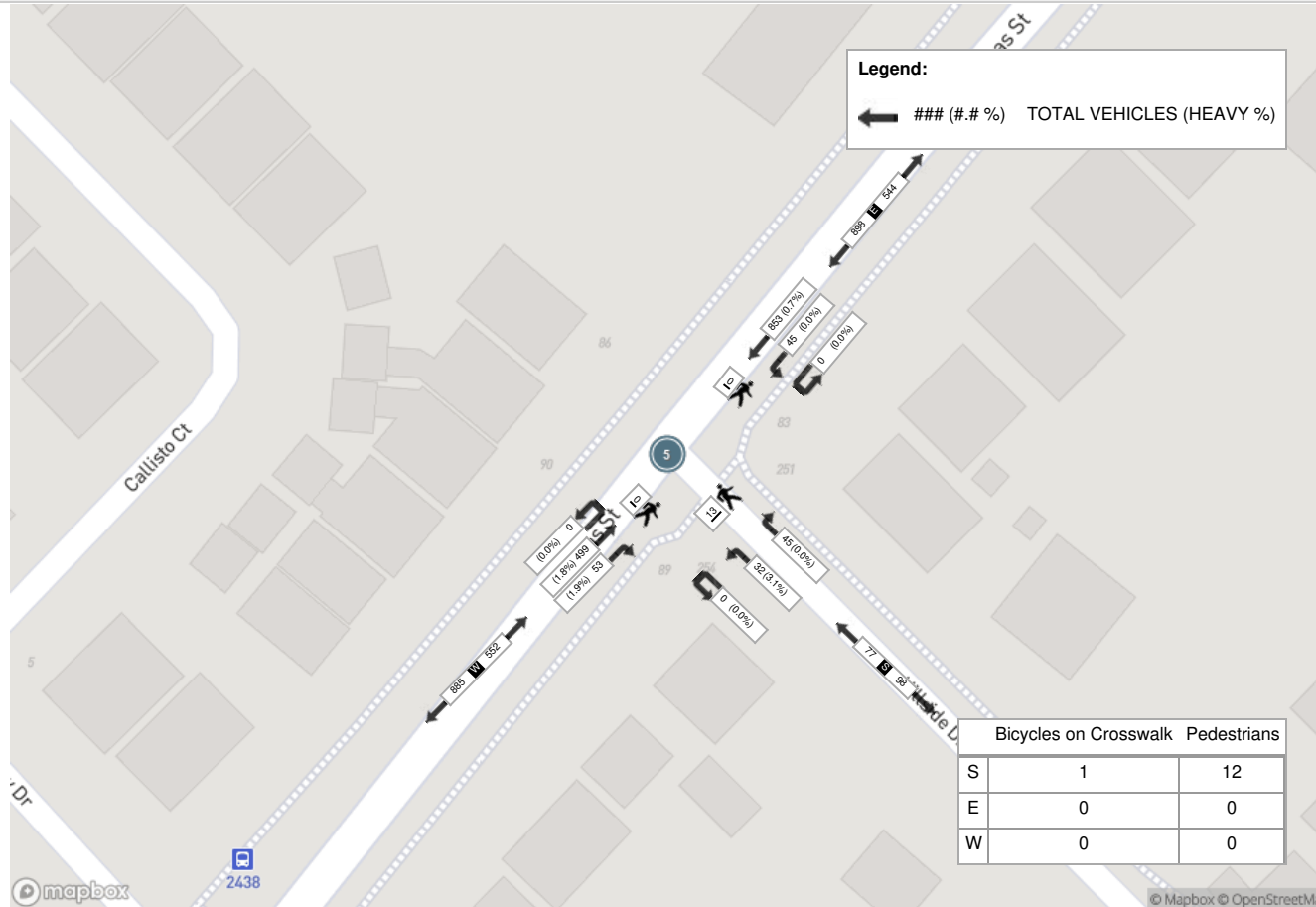
Peak Hour: 05:00 PM - 06:00 PM Weather: Broken Clouds (20.49 °C)

Start Time	E Approach THOMAS ST					S Approach HILLSIDE DR					W Approach THOMAS ST				Int. Total (15 min)	
	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds		Approach Total
17:00:00	221	11	0	0	232	10	7	0	1	17	16	138	0	0	154	403
17:15:00	227	12	0	0	239	13	10	0	4	23	9	109	0	0	118	380
17:30:00	242	13	0	0	255	8	9	0	1	17	15	125	0	0	140	412
17:45:00	163	9	0	0	172	14	6	0	7	20	13	127	0	0	140	332
Grand Total	853	45	0	0	898	45	32	0	13	77	53	499	0	0	552	1527
Approach%	95%	5%	0%		-	58.4%	41.6%	0%		-	9.6%	90.4%	0%		-	-
Totals %	55.9%	2.9%	0%		58.8%	2.9%	2.1%	0%		5%	3.5%	32.7%	0%		36.1%	-
PHF	0.88	0.87	0		0.88	0.8	0.8	0		0.84	0.83	0.9	0		0.9	-
Heavy	6	0	0		6	0	1	0		1	1	9	0		10	-
Heavy %	0.7%	0%	0%		0.7%	0%	3.1%	0%		1.3%	1.9%	1.8%	0%		1.8%	-
Lights	847	45	0		892	45	31	0		76	52	489	0		541	-
Lights %	99.3%	100%	0%		99.3%	100%	96.9%	0%		98.7%	98.1%	98%	0%		98%	-
Single-Unit Trucks	2	0	0		2	0	1	0		1	1	4	0		5	-
Single-Unit Trucks %	0.2%	0%	0%		0.2%	0%	3.1%	0%		1.3%	1.9%	0.8%	0%		0.9%	-
Buses	4	0	0		4	0	0	0		0	0	5	0		5	-
Buses %	0.5%	0%	0%		0.4%	0%	0%	0%		0%	0%	1%	0%		0.9%	-
Bicycles on Road	0	0	0		0	0	0	0		0	0	1	0		1	-
Bicycles on Road %	0%	0%	0%		0%	0%	0%	0%		0%	0%	0.2%	0%		0.2%	-
Pedestrians	-	-	-	0	-	-	-	-	12	-	-	-	-	0	-	-
Pedestrians%	-	-	-	0%	-	-	-	-	92.3%	-	-	-	-	0%	-	-
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	1	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	0%	-	-	-	-	7.7%	-	-	-	-	0%	-	-

Peak Hour: 07:15 AM - 08:15 AM Weather: Scattered Clouds (6.79 °C)



Peak Hour: 05:00 PM - 06:00 PM Weather: Broken Clouds (20.49 °C)





Turning Movement Count (7 . JOYMAR DR & TANNERY ST)

Start Time	N Approach JOYMAR DR						E Approach TANNERY ST						S Approach JOYMAR DR						W Approach WEST DRIVEWAY						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
07:00:00	3	7	3	0	0	13	0	1	7	0	0	8	4	13	1	0	0	18	2	1	0	0	2	3	42	
07:15:00	0	8	5	0	4	13	8	3	5	0	0	16	7	9	3	0	0	19	2	0	0	0	3	2	50	
07:30:00	4	7	8	0	6	19	6	2	2	0	0	10	3	15	8	0	1	26	1	1	0	0	5	2	57	
07:45:00	5	16	17	0	16	38	8	15	11	0	1	34	13	16	19	0	1	48	4	9	6	0	7	19	139	288
08:00:00	7	29	34	0	51	70	16	34	8	0	0	58	7	31	33	0	3	71	17	29	6	0	11	52	251	497
08:15:00	10	26	32	0	14	68	21	14	8	0	2	43	10	25	10	0	0	45	12	17	0	0	9	29	185	632
08:30:00	3	13	16	0	34	32	8	4	10	0	2	22	12	15	3	0	2	30	1	1	0	0	5	2	86	661
08:45:00	1	8	11	0	0	20	8	1	9	0	0	18	18	9	0	0	0	27	0	2	0	0	7	2	67	589
09:00:00	0	16	3	0	4	19	4	1	11	0	0	16	15	11	0	0	2	26	0	0	0	0	4	0	61	399
09:15:00	4	12	7	0	25	23	5	0	12	0	1	17	11	10	0	0	0	21	0	0	2	0	1	2	63	277
09:30:00	0	5	7	0	22	12	3	1	9	0	1	13	6	9	0	0	0	15	1	3	3	0	6	7	47	238
09:45:00	0	10	11	0	5	21	7	1	4	0	1	12	7	4	0	0	0	11	1	1	1	0	1	3	47	218
BREAK																										
16:00:00	1	17	16	0	31	34	21	4	14	0	0	39	11	15	1	0	0	27	3	2	3	0	6	8	108	
16:15:00	0	12	13	0	9	25	16	0	14	0	1	30	15	16	0	0	3	31	0	1	0	0	1	1	87	
16:30:00	0	9	8	0	4	17	21	2	15	0	2	38	9	17	0	0	0	26	0	1	0	0	1	1	82	
16:45:00	0	10	7	0	5	17	9	0	20	0	2	29	14	7	0	0	0	21	0	0	0	0	2	0	67	344
17:00:00	0	7	6	0	4	13	14	1	28	0	3	43	22	21	0	0	1	43	0	1	0	0	8	1	100	336
17:15:00	0	13	9	0	3	22	22	0	27	0	0	49	15	21	0	0	3	36	2	0	1	0	4	3	110	359
17:30:00	0	22	11	0	2	33	23	0	22	0	0	45	11	22	1	0	0	34	1	0	0	0	3	1	113	390
17:45:00	1	8	17	0	4	26	20	0	19	0	0	39	9	19	0	0	0	28	0	0	0	0	4	0	93	416
18:00:00	0	8	9	0	0	17	18	0	16	0	0	34	11	13	0	0	2	24	0	0	0	0	3	0	75	391
18:15:00	0	10	12	0	11	22	20	0	17	0	0	37	6	11	0	0	1	17	1	0	0	0	1	1	77	358
18:30:00	0	11	8	0	4	19	12	1	17	0	1	30	13	13	0	0	1	26	1	0	0	0	1	1	76	321
18:45:00	0	8	8	0	7	16	6	0	20	0	0	26	7	9	0	0	2	16	0	3	0	0	3	3	61	289
Grand Total	39	292	278	0	265	609	296	85	325	0	17	706	256	351	79	0	22	686	49	72	22	0	98	143	2144	-
Approach%	6.4%	47.9%	45.6%	0%	-	-	41.9%	12%	46%	0%	-	-	37.3%	51.2%	11.5%	0%	-	-	34.3%	50.3%	15.4%	0%	-	-	-	-
Totals %	1.8%	13.6%	13%	0%	-	28.4%	13.8%	4%	15.2%	0%	-	32.9%	11.9%	16.4%	3.7%	0%	-	32%	2.3%	3.4%	1%	3.7%	0%	6.7%	-	-
Heavy	0	11	8	0	-	-	5	1	4	0	-	-	3	6	1	0	-	-	1	0	0	0	-	-	-	-
Heavy %	0%	3.8%	2.9%	0%	-	-	1.7%	1.2%	1.2%	0%	-	-	1.2%	1.7%	1.3%	0%	-	-	2%	0%	0%	0%	-	-	-	-
Bicycles	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycle %	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Peak Hour: 07:45 AM - 08:45 AM Weather: Scattered Clouds (6.79 °C)

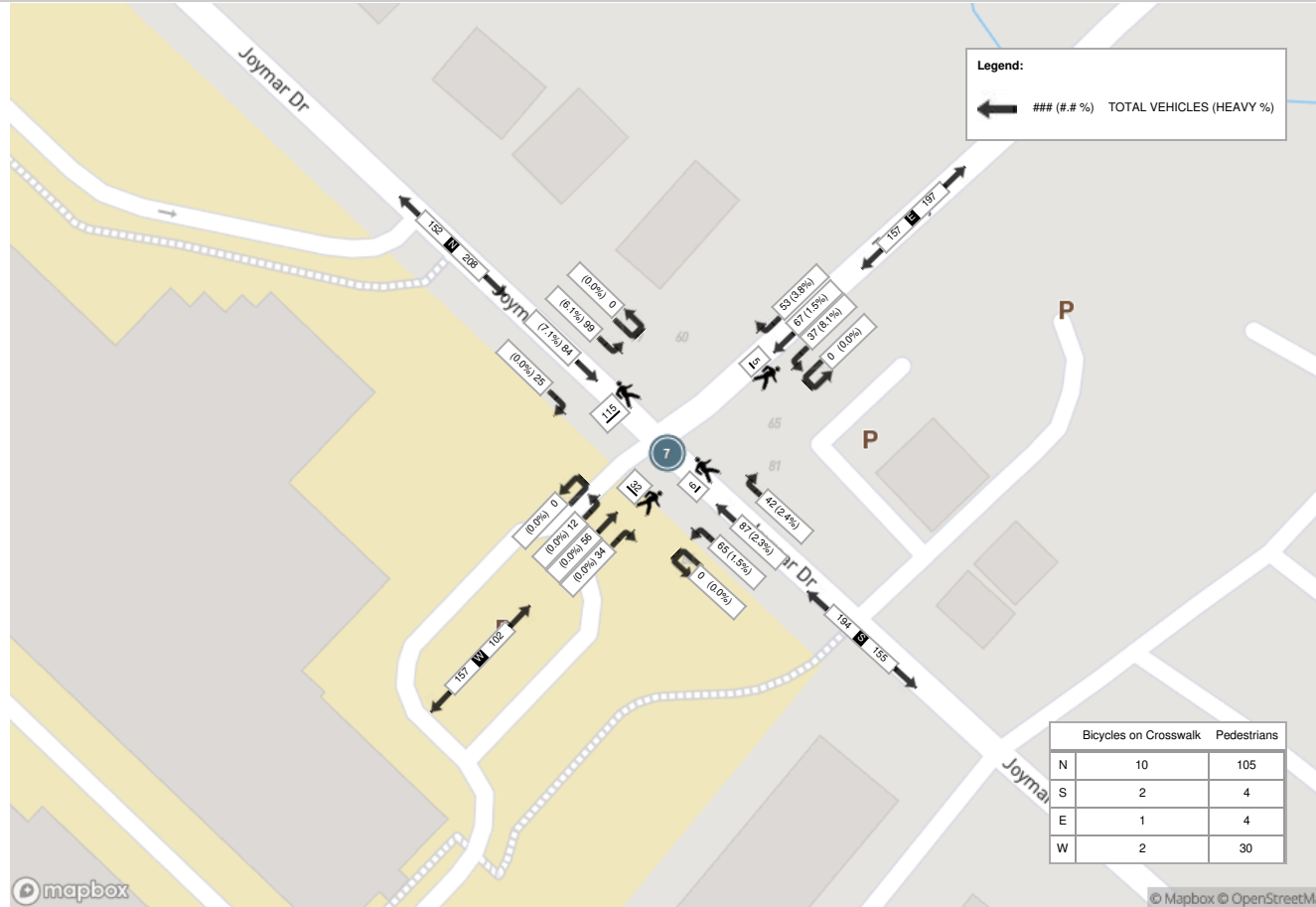
Start Time	N Approach JOYMAR DR						E Approach TANNERY ST						S Approach JOYMAR DR						W Approach WEST DRIVEWAY						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
07:45:00	5	16	17	0	16	38	8	15	11	0	1	34	13	16	19	0	1	48	4	9	6	0	7	19	139
08:00:00	7	29	34	0	51	70	16	34	8	0	0	58	7	31	33	0	3	71	17	29	6	0	11	52	251
08:15:00	10	26	32	0	14	68	21	14	8	0	2	43	10	25	10	0	0	45	12	17	0	0	9	29	185
08:30:00	3	13	16	0	34	32	8	4	10	0	2	22	12	15	3	0	2	30	1	1	0	0	5	2	86
Grand Total	25	84	99	0	115	208	53	67	37	0	5	157	42	87	65	0	6	194	34	56	12	0	32	102	661
Approach%	12%	40.4%	47.6%	0%	-	-	33.8%	42.7%	23.6%	0%	-	-	21.6%	44.8%	33.5%	0%	-	-	33.3%	54.9%	11.8%	0%	-	-	-
Totals %	3.8%	12.7%	15%	0%	31.5%	-	8%	10.1%	5.6%	0%	23.8%	-	6.4%	13.2%	9.8%	0%	29.3%	-	5.1%	8.5%	1.8%	0%	15.4%	-	-
PHF	0.63	0.72	0.73	0	0.74	-	0.63	0.49	0.84	0	0.68	-	0.81	0.7	0.49	0	0.68	-	0.5	0.48	0.5	0	0.49	-	-
Heavy	0	6	6	0	12	-	2	1	3	0	6	-	1	2	1	0	4	-	0	0	0	0	0	-	-
Heavy %	0%	7.1%	6.1%	0%	5.8%	-	3.8%	1.5%	8.1%	0%	3.8%	-	2.4%	2.3%	1.5%	0%	2.1%	-	0%	0%	0%	0%	0%	-	-
Lights	25	78	92	0	195	-	48	66	34	0	148	-	41	85	64	0	190	-	34	56	12	0	102	-	
Lights %	100%	92.9%	92.9%	0%	93.8%	-	90.6%	98.5%	91.9%	0%	94.3%	-	97.6%	97.7%	98.5%	0%	97.9%	-	100%	100%	100%	0%	100%	-	-
Single-Unit Trucks	0	1	0	0	1	-	1	0	1	0	2	-	0	0	0	0	0	-	0	0	0	0	0	-	-
Single-Unit Trucks %	0%	1.2%	0%	0%	0.5%	-	1.9%	0%	2.7%	0%	1.3%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	-
Buses	0	5	6	0	11	-	1	1	2	0	4	-	0	2	1	0	3	-	0	0	0	0	0	-	-
Buses %	0%	6%	6.1%	0%	5.3%	-	1.9%	1.5%	5.4%	0%	2.5%	-	0%	2.3%	1.5%	0%	1.5%	-	0%	0%	0%	0%	0%	-	-
Articulated Trucks	0	0	0	0	0	-	0	0	0	0	0	-	1	0	0	0	1	-	0	0	0	0	0	-	-
Articulated Trucks %	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	2.4%	0%	0%	0%	0.5%	-	0%	0%	0%	0%	0%	-	-
Bicycles on Road	0	0	1	0	1	-	3	0	0	0	3	-	0	0	0	0	0	-	0	0	0	0	0	-	-
Bicycles on Road %	0%	0%	1%	0%	0.5%	-	5.7%	0%	0%	0%	1.9%	-	0%	0%	0%	0%	0%	-	0%	0%	0%	0%	0%	-	-
Pedestrians	-	-	-	-	105	-	-	-	-	-	4	-	-	-	-	-	4	-	-	-	-	-	30	-	-
Pedestrians%	-	-	-	-	66.5%	-	-	-	-	-	2.5%	-	-	-	-	-	2.5%	-	-	-	-	-	19%	-	-
Bicycles on Crosswalk	-	-	-	-	10	-	-	-	-	-	1	-	-	-	-	-	2	-	-	-	-	-	2	-	-
Bicycles on Crosswalk%	-	-	-	-	6.3%	-	-	-	-	-	0.6%	-	-	-	-	-	1.3%	-	-	-	-	-	1.3%	-	-



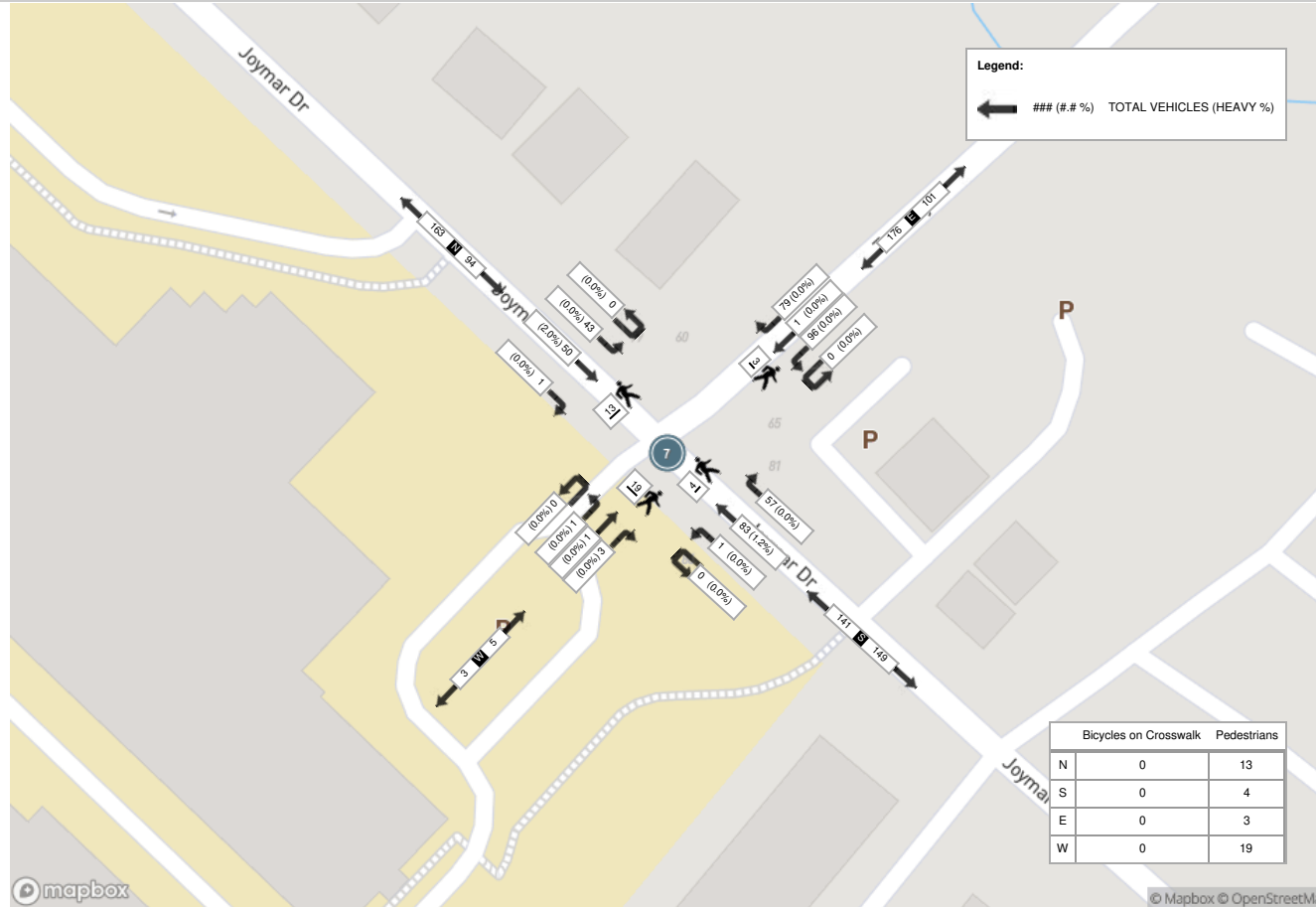
Peak Hour: 05:00 PM - 06:00 PM Weather: Broken Clouds (20.49 °C)

Start Time	N Approach JOYMAR DR						E Approach TANNERY ST						S Approach JOYMAR DR						W Approach WEST DRIVEWAY						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
17:00:00	0	7	6	0	4	13	14	1	28	0	3	43	22	21	0	0	1	43	0	1	0	0	8	1	100
17:15:00	0	13	9	0	3	22	22	0	27	0	0	49	15	21	0	0	3	36	2	0	1	0	4	3	110
17:30:00	0	22	11	0	2	33	23	0	22	0	0	45	11	22	1	0	0	34	1	0	0	0	3	1	113
17:45:00	1	8	17	0	4	26	20	0	19	0	0	39	9	19	0	0	0	28	0	0	0	0	4	0	93
Grand Total	1	50	43	0	13	94	79	1	96	0	3	176	57	83	1	0	4	141	3	1	1	0	19	5	416
Approach%	1.1%	53.2%	45.7%	0%	-	-	44.9%	0.6%	54.5%	0%	-	-	40.4%	58.9%	0.7%	0%	-	-	60%	20%	20%	0%	-	-	-
Totals %	0.2%	12%	10.3%	0%	22.6%	19%	0.2%	23.1%	0%	42.3%	13.7%	20%	0.2%	0%	33.9%	0.7%	0.2%	0.2%	0%	1.2%	-	-	-	-	
PHF	0.25	0.57	0.63	0	0.71	0.86	0.25	0.86	0	0.9	0.65	0.94	0.25	0	0.82	0.38	0.25	0.25	0	0.42	-	-	-	-	
Heavy	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	-	
Heavy %	0%	2%	0%	0%	1.1%	0%	0%	0%	0%	0%	0%	0%	0%	1.2%	0%	0%	0%	0.7%	0%	0%	0%	0%	0%	-	
Lights	1	48	43	0	92	79	1	96	0	176	57	81	1	0	139	3	1	1	0	5	-	-	-		
Lights %	100%	96%	100%	0%	97.9%	100%	100%	100%	0%	100%	100%	97.6%	100%	0%	98.6%	100%	100%	100%	0%	100%	-	-	-		
Single-Unit Trucks	0	1	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	-	
Single-Unit Trucks %	0%	2%	0%	0%	1.1%	0%	0%	0%	0%	0%	0%	0%	1.2%	0%	0.7%	0%	0%	0%	0%	0%	0%	0%	0%	-	
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	
Buses %	0%	0%	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	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%	0%	0%	-	
Bicycles on Road	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	-	
Bicycles on Road %	0%	2%	0%	0%	1.1%	0%	0%	0%	0%	0%	0%	1.2%	0%	0%	0.7%	0%	0%	0%	0%	0%	0%	0%	0%	-	
Pedestrians	-	-	-	-	13	-	-	-	-	3	-	-	-	-	4	-	-	-	-	-	19	-	-	-	
Pedestrians%	-	-	-	-	33.3%	-	-	-	-	7.7%	-	-	-	-	10.3%	-	-	-	-	-	48.7%	-	-	-	
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-	0	-	-	-	
Bicycles on Crosswalk%	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	

Peak Hour: 07:45 AM - 08:45 AM Weather: Scattered Clouds (6.79 °C)



Peak Hour: 05:00 PM - 06:00 PM Weather: Broken Clouds (20.49 °C)





Turning Movement Count (6 . THOMAS ST & GAFNEY DR / MCFARREN BLVD)

Start Time	N Approach GAFNEY DR						Approach Total	E Approach THOMAS ST					Approach Total	S Approach MCFARREN BLVD					Approach Total	W Approach THOMAS ST					Approach Total	Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Right E:N		Thru E:W	Left E:S	UTurn E:E	Peds E:	Right S:E		Thru S:N	Left S:W	UTurn S:S	Peds S:	Right W:S		Thru W:E	Left W:N	UTurn W:W	Peds W:				
07:00:00	1	1	2	0	0	4	0	40	1	0	1	41	5	0	0	0	3	5	2	112	1	0	0	115	165		
07:15:00	4	0	4	0	3	8	4	60	8	0	0	72	17	0	3	0	0	20	4	204	0	0	1	208	308		
07:30:00	5	4	6	0	2	15	3	93	7	0	0	103	13	1	4	0	1	18	8	196	1	0	3	205	341		
07:45:00	9	5	9	0	3	23	2	109	8	0	14	119	26	0	8	0	10	34	3	240	2	0	12	245	421	1235	
08:00:00	11	2	4	0	3	17	3	131	13	0	13	147	19	4	7	0	4	30	6	144	6	0	8	156	350	1420	
08:15:00	7	5	8	0	1	20	4	92	6	0	1	102	16	2	4	0	2	22	4	112	4	0	1	120	264	1376	
08:30:00	5	0	8	0	1	13	4	82	6	0	1	92	22	0	3	0	1	25	3	176	2	0	3	181	311	1346	
08:45:00	6	1	7	0	1	14	9	115	8	0	5	132	18	1	8	0	0	27	1	144	1	0	0	146	319	1244	
09:00:00	9	2	2	0	4	13	5	127	11	0	0	143	17	0	15	0	2	32	7	114	6	0	5	127	315	1209	
09:15:00	8	2	4	0	4	14	2	55	4	0	1	61	6	1	1	0	1	8	10	91	3	0	4	104	187	1132	
09:30:00	6	2	1	0	2	9	3	67	4	0	0	74	8	1	2	0	3	11	0	75	2	0	0	77	171	992	
09:45:00	4	0	5	0	1	9	1	51	8	0	1	60	16	0	1	0	2	17	0	89	2	0	1	91	177	850	
BREAK																											
16:00:00	1	0	9	0	2	10	4	120	12	0	4	136	6	1	3	0	2	10	6	107	2	0	3	115	271		
16:15:00	5	0	6	0	5	11	7	155	14	0	5	176	15	1	4	0	0	20	3	92	10	0	2	105	312		
16:30:00	3	4	2	0	2	9	1	126	17	0	3	144	13	2	8	0	3	23	7	91	7	0	3	105	281		
16:45:00	2	3	2	0	3	7	4	115	14	0	0	133	16	2	0	0	3	18	4	100	5	0	2	109	267	1131	
17:00:00	4	4	3	0	1	11	9	197	19	0	0	225	10	3	8	0	1	21	5	137	8	0	3	150	407	1267	
17:15:00	4	2	5	0	1	11	4	211	20	0	3	235	18	4	8	0	6	30	5	95	8	0	0	108	384	1339	
17:30:00	1	2	3	0	1	6	6	226	19	0	1	251	14	5	5	0	1	24	9	122	5	0	1	136	417	1475	
17:45:00	6	8	6	0	6	20	11	141	15	0	0	167	16	3	3	0	7	22	9	118	10	0	3	137	346	1554	
18:00:00	4	3	3	0	1	10	5	194	16	0	1	215	15	3	7	0	3	25	6	112	4	0	2	122	372	1519	
18:15:00	8	0	1	0	2	9	8	174	16	0	4	198	16	2	1	0	7	19	4	109	9	0	1	122	348	1483	
18:30:00	7	0	4	0	6	11	9	182	22	0	1	213	19	1	3	0	2	23	3	124	5	0	0	132	379	1445	
18:45:00	7	1	4	0	2	12	3	118	13	0	0	134	20	2	7	0	0	29	6	99	4	0	2	109	284	1383	
Grand Total	127	51	108	0	57	286	111	2981	281	0	59	3373	361	39	113	0	64	513	115	3003	107	0	60	3225	7397	-	
Approach%	44.4%	17.8%	37.8%	0%	-	-	3.3%	88.4%	8.3%	0%	-	-	70.4%	7.6%	22%	0%	-	-	3.6%	93.1%	3.3%	0%	-	-	-	-	
Totals %	1.7%	0.7%	1.5%	0%	-	3.9%	1.5%	40.3%	3.8%	0%	-	45.6%	4.9%	0.5%	1.5%	0%	-	6.9%	1.6%	40.6%	1.4%	0%	-	43.6%	-	-	
Heavy	4	1	3	0	-	-	1	73	2	0	-	-	5	1	4	0	-	-	11	66	6	0	-	-	-	-	
Heavy %	3.1%	2%	2.8%	0%	-	-	0.9%	2.4%	0.7%	0%	-	-	1.4%	2.6%	3.5%	0%	-	-	9.6%	2.2%	5.6%	0%	-	-	-	-	
Bicycles	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycle %	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Peak Hour: 07:15 AM - 08:15 AM Weather: Scattered Clouds (6.79 °C)

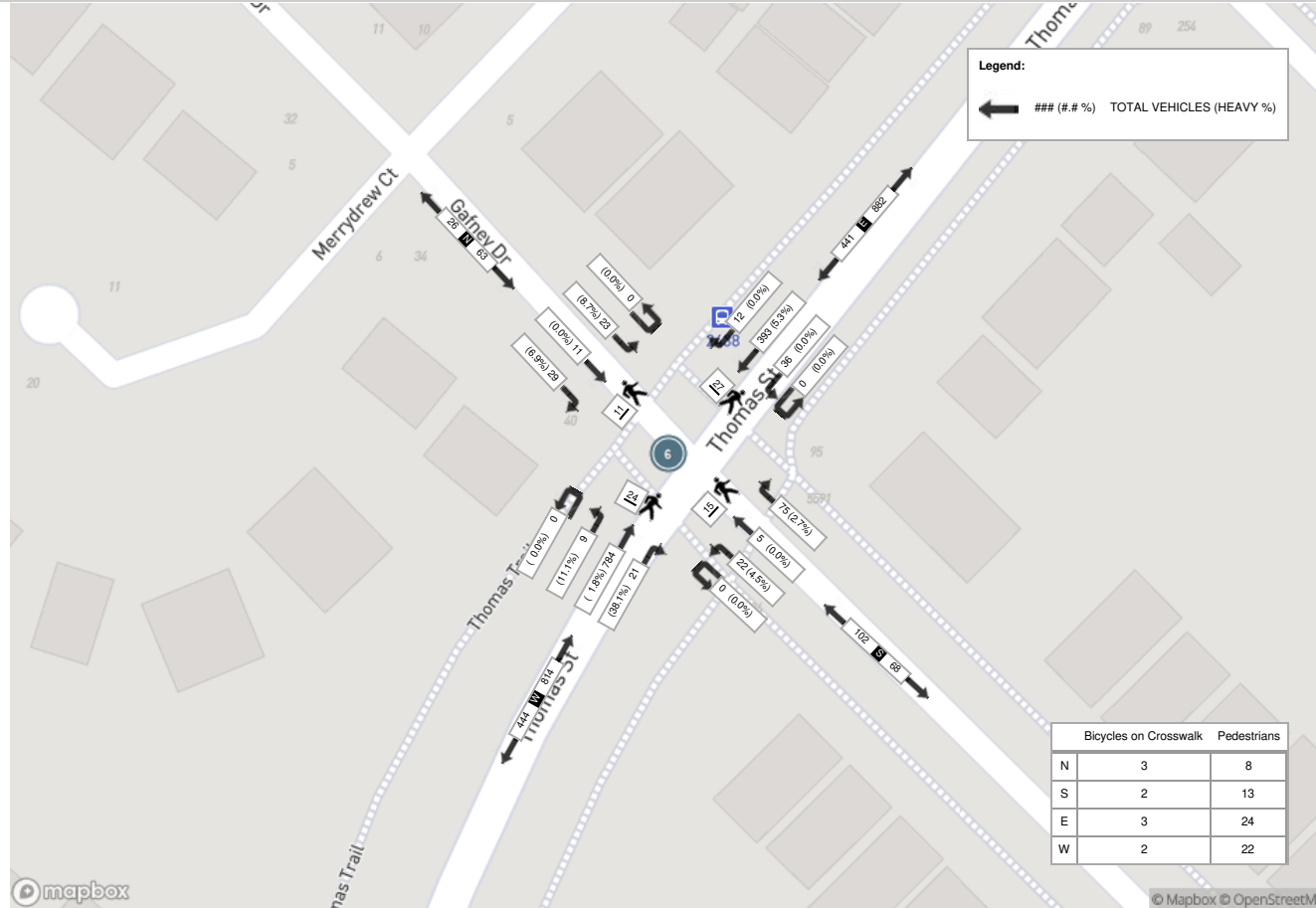
Start Time	N Approach GAFNEY DR						E Approach THOMAS ST						S Approach MCFARREN BLVD						W Approach THOMAS ST						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
07:15:00	4	0	4	0	3	8	4	60	8	0	0	72	17	0	3	0	0	20	4	204	0	0	1	208	308
07:30:00	5	4	6	0	2	15	3	93	7	0	0	103	13	1	4	0	1	18	8	196	1	0	3	205	341
07:45:00	9	5	9	0	3	23	2	109	8	0	14	119	26	0	8	0	10	34	3	240	2	0	12	245	421
08:00:00	11	2	4	0	3	17	3	131	13	0	13	147	19	4	7	0	4	30	6	144	6	0	8	156	350
Grand Total	29	11	23	0	11	63	12	393	36	0	27	441	75	5	22	0	15	102	21	784	9	0	24	814	1420
Approach%	46%	17.5%	36.5%	0%	-	-	2.7%	89.1%	8.2%	0%	-	-	73.5%	4.9%	21.6%	0%	-	-	2.6%	96.3%	1.1%	0%	-	-	-
Totals %	2%	0.8%	1.6%	0%	4.4%	4.4%	0.8%	27.7%	2.5%	0%	31.1%	31.1%	5.3%	0.4%	1.5%	0%	7.2%	7.2%	1.5%	55.2%	0.6%	0%	57.3%	57.3%	-
PHF	0.66	0.55	0.64	0	0.68	0.68	0.75	0.75	0.69	0	0.75	0.75	0.72	0.31	0.69	0	0.75	0.75	0.66	0.82	0.38	0	0.83	0.83	-
Heavy	2	0	2	0	4	4	0	21	0	0	21	21	2	0	1	0	3	3	8	14	1	0	23	23	-
Heavy %	6.9%	0%	8.7%	0%	6.3%	6.3%	0%	5.3%	0%	0%	4.8%	4.8%	2.7%	0%	4.5%	0%	2.9%	2.9%	38.1%	1.8%	11.1%	0%	2.8%	2.8%	-
Lights	27	11	21	0	59	59	12	371	36	0	419	419	73	5	21	0	99	99	13	769	8	0	790	790	-
Lights %	93.1%	100%	91.3%	0%	93.7%	93.7%	100%	94.4%	100%	0%	95%	95%	97.3%	100%	95.5%	0%	97.1%	97.1%	61.9%	98.1%	88.9%	0%	97.1%	97.1%	-
Single-Unit Trucks	0	0	0	0	0	0	0	6	0	0	6	6	0	0	0	0	0	0	0	2	0	0	2	2	-
Single-Unit Trucks %	0%	0%	0%	0%	0%	0%	0%	1.5%	0%	0%	1.4%	1.4%	0%	0%	0%	0%	0%	0%	0%	0.3%	0%	0%	0.2%	0.2%	-
Buses	2	0	2	0	4	4	0	15	0	0	15	15	2	0	1	0	3	3	8	12	1	0	21	21	-
Buses %	6.9%	0%	8.7%	0%	6.3%	6.3%	0%	3.8%	0%	0%	3.4%	3.4%	2.7%	0%	4.5%	0%	2.9%	2.9%	38.1%	1.5%	11.1%	0%	2.6%	2.6%	-
Bicycles on Road	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	1	0	0	1	1	-
Bicycles on Road %	0%	0%	0%	0%	0%	0%	0%	0.3%	0%	0%	0.2%	0.2%	0%	0%	0%	0%	0%	0%	0%	0.1%	0%	0%	0.1%	0.1%	-
Pedestrians	-	-	-	-	8	8	-	-	-	-	24	24	-	-	-	-	13	13	-	-	-	-	22	22	-
Pedestrians%	-	-	-	-	10.4%	10.4%	-	-	-	-	31.2%	31.2%	-	-	-	-	16.9%	16.9%	-	-	-	-	28.6%	28.6%	-
Bicycles on Crosswalk	-	-	-	-	3	3	-	-	-	-	3	3	-	-	-	-	2	2	-	-	-	-	2	2	-
Bicycles on Crosswalk%	-	-	-	-	3.9%	3.9%	-	-	-	-	3.9%	3.9%	-	-	-	-	2.6%	2.6%	-	-	-	-	2.6%	2.6%	-



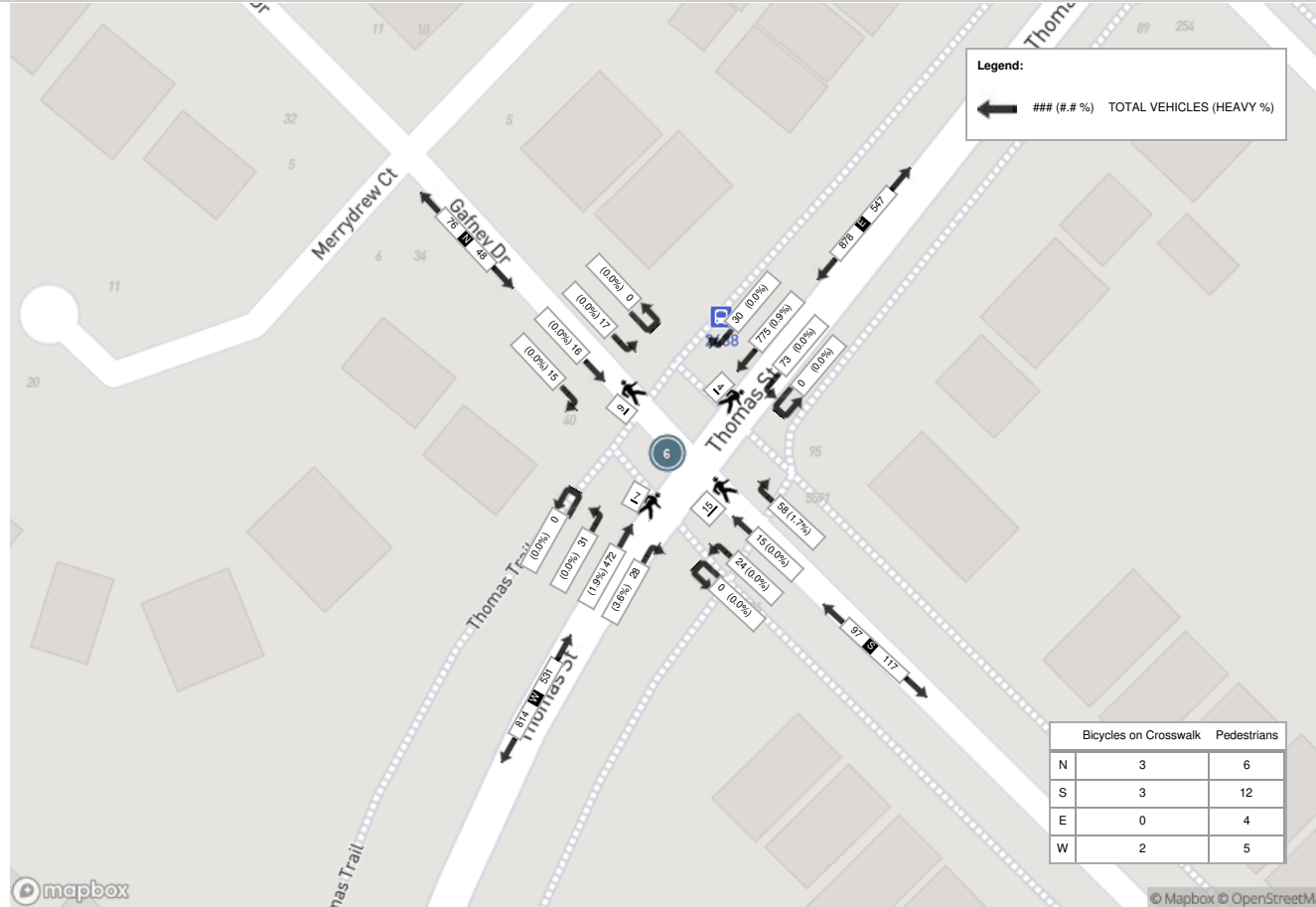
Peak Hour: 05:00 PM - 06:00 PM Weather: Broken Clouds (20.49 °C)

Start Time	N Approach GAFNEY DR						E Approach THOMAS ST						S Approach MCFARREN BLVD						W Approach THOMAS ST						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
17:00:00	4	4	3	0	1	11	9	197	19	0	0	225	10	3	8	0	1	21	5	137	8	0	3	150	407
17:15:00	4	2	5	0	1	11	4	211	20	0	3	235	18	4	8	0	6	30	5	95	8	0	0	108	384
17:30:00	1	2	3	0	1	6	6	226	19	0	1	251	14	5	5	0	1	24	9	122	5	0	1	136	417
17:45:00	6	8	6	0	6	20	11	141	15	0	0	167	16	3	3	0	7	22	9	118	10	0	3	137	346
Grand Total	15	16	17	0	9	48	30	775	73	0	4	878	58	15	24	0	15	97	28	472	31	0	7	531	1554
Approach%	31.3%	33.3%	35.4%	0%	-	-	3.4%	88.3%	8.3%	0%	-	-	59.8%	15.5%	24.7%	0%	-	-	5.3%	88.9%	5.8%	0%	-	-	-
Totals %	1%	1%	1.1%	0%	3.1%	3.1%	1.9%	49.9%	4.7%	0%	56.5%	56.5%	3.7%	1%	1.5%	0%	6.2%	6.2%	1.8%	30.4%	2%	0%	34.2%	34.2%	-
PHF	0.63	0.5	0.71	0	0.6	0.6	0.68	0.86	0.91	0	0.87	0.87	0.81	0.75	0.75	0	0.81	0.81	0.78	0.86	0.78	0	0.89	0.89	-
Heavy	0	0	0	0	0	0	0	7	0	0	7	7	1	0	0	0	1	1	1	9	0	0	10	10	-
Heavy %	0%	0%	0%	0%	0%	0%	0%	0.9%	0%	0%	0.8%	0.8%	1.7%	0%	0%	0%	1%	1%	3.6%	1.9%	0%	0%	1.9%	1.9%	-
Lights	15	16	17	0	48	48	30	768	73	0	871	871	57	15	24	0	96	96	27	463	31	0	521	521	-
Lights %	100%	100%	100%	0%	100%	100%	100%	99.1%	100%	0%	99.2%	99.2%	98.3%	100%	100%	0%	99%	99%	96.4%	98.1%	100%	0%	98.1%	98.1%	-
Single-Unit Trucks	0	0	0	0	0	0	0	3	0	0	3	3	1	0	0	0	1	1	1	4	0	0	5	5	-
Single-Unit Trucks %	0%	0%	0%	0%	0%	0%	0%	0.4%	0%	0%	0.3%	0.3%	1.7%	0%	0%	0%	1%	1%	3.6%	0.8%	0%	0%	0.9%	0.9%	-
Buses	0	0	0	0	0	0	0	4	0	0	4	4	0	0	0	0	0	0	0	5	0	0	5	5	-
Buses %	0%	0%	0%	0%	0%	0%	0%	0.5%	0%	0%	0.5%	0.5%	0%	0%	0%	0%	0%	0%	0%	1.1%	0%	0%	0.9%	0.9%	-
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-
Bicycles on Road %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	-
Pedestrians	-	-	-	-	6	-	-	-	-	4	-	-	-	-	-	12	-	-	-	-	-	5	-	-	-
Pedestrians%	-	-	-	-	17.1%	-	-	-	-	11.4%	-	-	-	-	-	34.3%	-	-	-	-	-	14.3%	-	-	-
Bicycles on Crosswalk	-	-	-	-	3	-	-	-	-	0	-	-	-	-	-	3	-	-	-	-	-	2	-	-	-
Bicycles on Crosswalk%	-	-	-	-	8.6%	-	-	-	-	0%	-	-	-	-	-	8.6%	-	-	-	-	-	5.7%	-	-	-

Peak Hour: 07:15 AM - 08:15 AM Weather: Scattered Clouds (6.79 °C)



Peak Hour: 05:00 PM - 06:00 PM Weather: Broken Clouds (20.49 °C)





Turning Movement Count (8 . TANNERY ST & RUTLEDGE RD)

Start Time	N Approach RUTLEDGE RD					E Approach TANNERY ST					W Approach TANNERY ST					Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	UTurn E:E	Peds E:	Approach Total	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
07:00:00	1	1	0	0	2	0	5	0	0	5	7	0	0	0	7	14	
07:15:00	0	0	0	1	0	1	16	0	0	17	12	1	0	1	13	30	
07:30:00	0	1	0	6	1	2	11	0	0	13	10	2	0	0	12	26	
07:45:00	1	2	0	13	3	4	38	0	0	42	39	0	0	1	39	84	154
08:00:00	0	2	0	39	2	1	63	0	0	64	70	1	0	0	71	137	277
08:15:00	0	0	0	9	0	0	40	0	1	40	60	0	0	0	60	100	347
08:30:00	0	1	0	35	1	1	21	0	0	22	28	1	0	0	29	52	373
08:45:00	0	0	0	0	0	1	17	0	0	18	29	2	0	0	31	49	338
09:00:00	1	2	0	3	3	1	17	0	1	18	17	1	0	0	18	39	240
09:15:00	0	1	0	33	1	1	18	0	0	19	17	1	0	0	18	38	178
09:30:00	2	2	0	13	4	4	11	0	0	15	14	3	0	0	17	36	162
09:45:00	1	1	0	3	2	2	13	0	0	15	18	0	0	0	18	35	148
BREAK																	
16:00:00	3	0	0	20	3	1	33	0	0	34	28	1	0	0	29	66	
16:15:00	1	4	0	10	5	0	29	0	0	29	27	1	1	0	29	63	
16:30:00	4	0	0	5	4	1	34	0	0	35	16	2	0	0	18	57	
16:45:00	2	2	0	2	4	1	25	0	1	26	19	1	0	0	20	50	236
17:00:00	4	1	0	1	5	1	42	0	2	43	27	2	0	0	29	77	247
17:15:00	1	2	0	5	3	2	46	0	0	48	23	1	0	0	24	75	259
17:30:00	0	0	0	4	0	0	44	0	0	44	22	0	0	0	22	66	268
17:45:00	0	0	0	6	0	1	41	0	0	42	26	0	0	0	26	68	286
18:00:00	1	1	0	2	2	1	31	0	0	32	20	0	0	0	20	54	263
18:15:00	0	0	0	9	0	0	40	0	0	40	17	1	0	0	18	58	246
18:30:00	2	2	0	2	4	1	28	0	0	29	21	0	0	0	21	54	234
18:45:00	2	1	0	8	3	0	21	0	0	21	15	1	0	0	16	40	206
Grand Total	26	26	0	229	52	27	684	0	5	711	582	22	1	2	605	1368	-
Approach%	50%	50%	0%	-	-	3.8%	96.2%	0%	-	-	96.2%	3.6%	0.2%	-	-	-	-
Totals %	1.9%	1.9%	0%	-	3.8%	2%	50%	0%	-	52%	42.5%	1.6%	0.1%	-	44.2%	-	-
Heavy	2	1	0	-	-	2	9	0	-	-	12	1	0	-	-	-	-
Heavy %	7.7%	3.8%	0%	-	-	7.4%	1.3%	0%	-	-	2.1%	4.5%	0%	-	-	-	-
Bicycles	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycle %	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Peak Hour: 07:45 AM - 08:45 AM Weather: Scattered Clouds (6.79 °C)

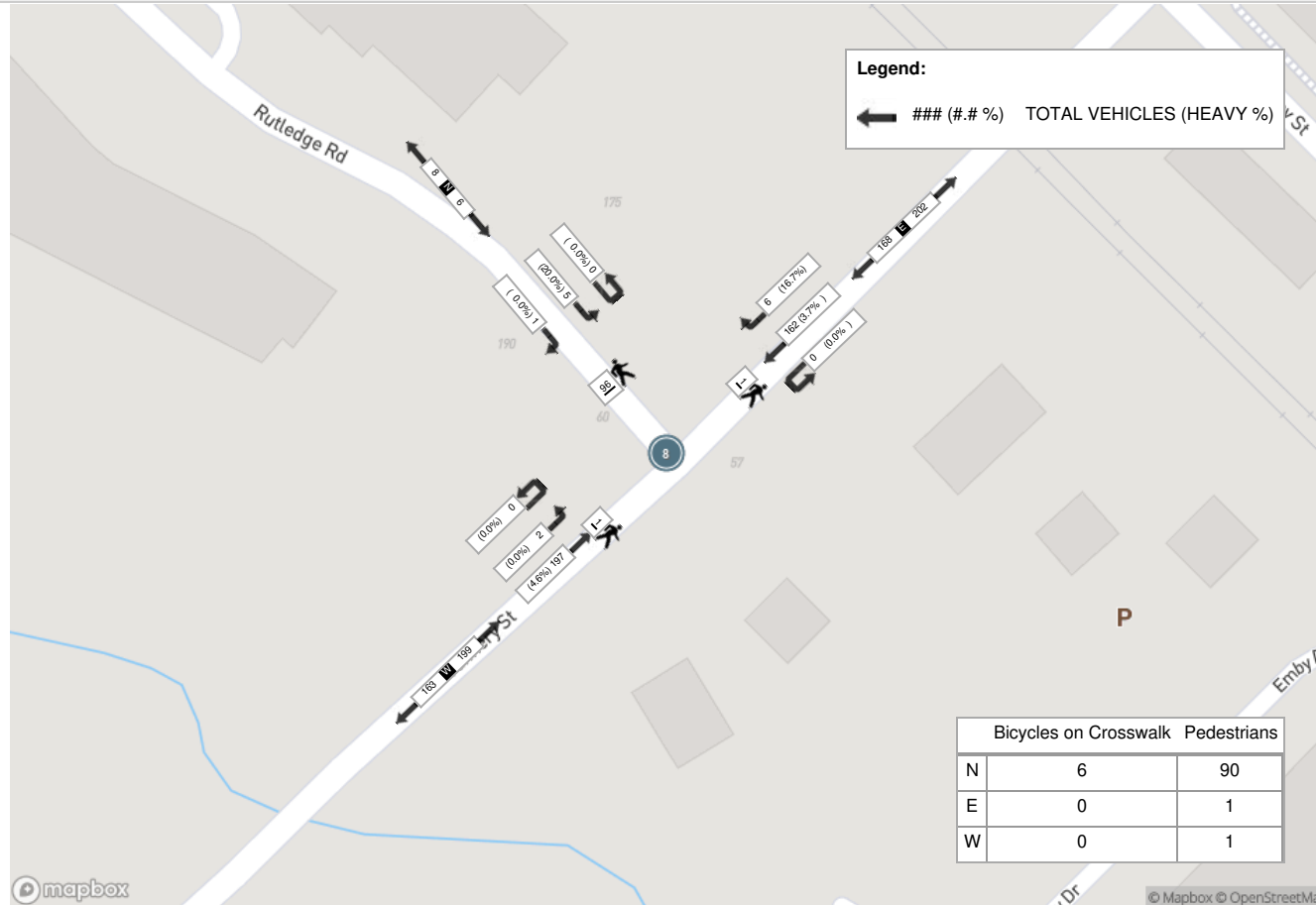
Start Time	N Approach RUTLEDGE RD					E Approach TANNERY ST					W Approach TANNERY ST					Int. Total (15 min)
	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	Thru	Left	UTurn	Peds	Approach Total	
07:45:00	1	2	0	13	3	4	38	0	0	42	39	0	0	1	39	84
08:00:00	0	2	0	39	2	1	63	0	0	64	70	1	0	0	71	137
08:15:00	0	0	0	9	0	0	40	0	1	40	60	0	0	0	60	100
08:30:00	0	1	0	35	1	1	21	0	0	22	28	1	0	0	29	52
Grand Total	1	5	0	96	6	6	162	0	1	168	197	2	0	1	199	373
Approach%	16.7%	83.3%	0%	-	-	3.6%	96.4%	0%	-	-	99%	1%	0%	-	-	-
Totals %	0.3%	1.3%	0%	1.6%	1.6%	43.4%	0%	45%	52.8%	0.5%	0%	53.4%	-	-	-	-
PHF	0.25	0.63	0	0.5	0.38	0.64	0	0.66	0.7	0.5	0	0.7	-	-	-	-
Heavy	0	1	0	1	1	6	0	7	9	0	0	9	-	-	-	-
Heavy %	0%	20%	0%	16.7%	16.7%	3.7%	0%	4.2%	4.6%	0%	0%	4.5%	-	-	-	-
Lights	1	4	0	5	5	149	0	154	187	2	0	189	-	-	-	-
Lights %	100%	80%	0%	83.3%	83.3%	92%	0%	91.7%	94.9%	100%	0%	95%	-	-	-	-
Single-Unit Trucks	0	1	0	1	1	2	0	3	2	0	0	2	-	-	-	-
Single-Unit Trucks %	0%	20%	0%	16.7%	16.7%	1.2%	0%	1.8%	1%	0%	0%	1%	-	-	-	-
Buses	0	0	0	0	0	4	0	4	6	0	0	6	-	-	-	-
Buses %	0%	0%	0%	0%	0%	2.5%	0%	2.4%	3%	0%	0%	3%	-	-	-	-
Articulated Trucks	0	0	0	0	0	0	0	0	1	0	0	1	-	-	-	-
Articulated Trucks %	0%	0%	0%	0%	0%	0%	0%	0%	0.5%	0%	0%	0.5%	-	-	-	-
Bicycles on Road	0	0	0	0	0	7	0	7	1	0	0	1	-	-	-	-
Bicycles on Road %	0%	0%	0%	0%	0%	4.3%	0%	4.2%	0.5%	0%	0%	0.5%	-	-	-	-
Pedestrians	-	-	-	90	-	-	-	1	-	-	-	-	1	-	-	-
Pedestrians%	-	-	-	91.8%	-	-	-	1%	-	-	-	-	1%	-	-	-
Bicycles on Crosswalk	-	-	-	6	-	-	-	0	-	-	-	-	0	-	-	-
Bicycles on Crosswalk%	-	-	-	6.1%	-	-	-	0%	-	-	-	-	0%	-	-	-



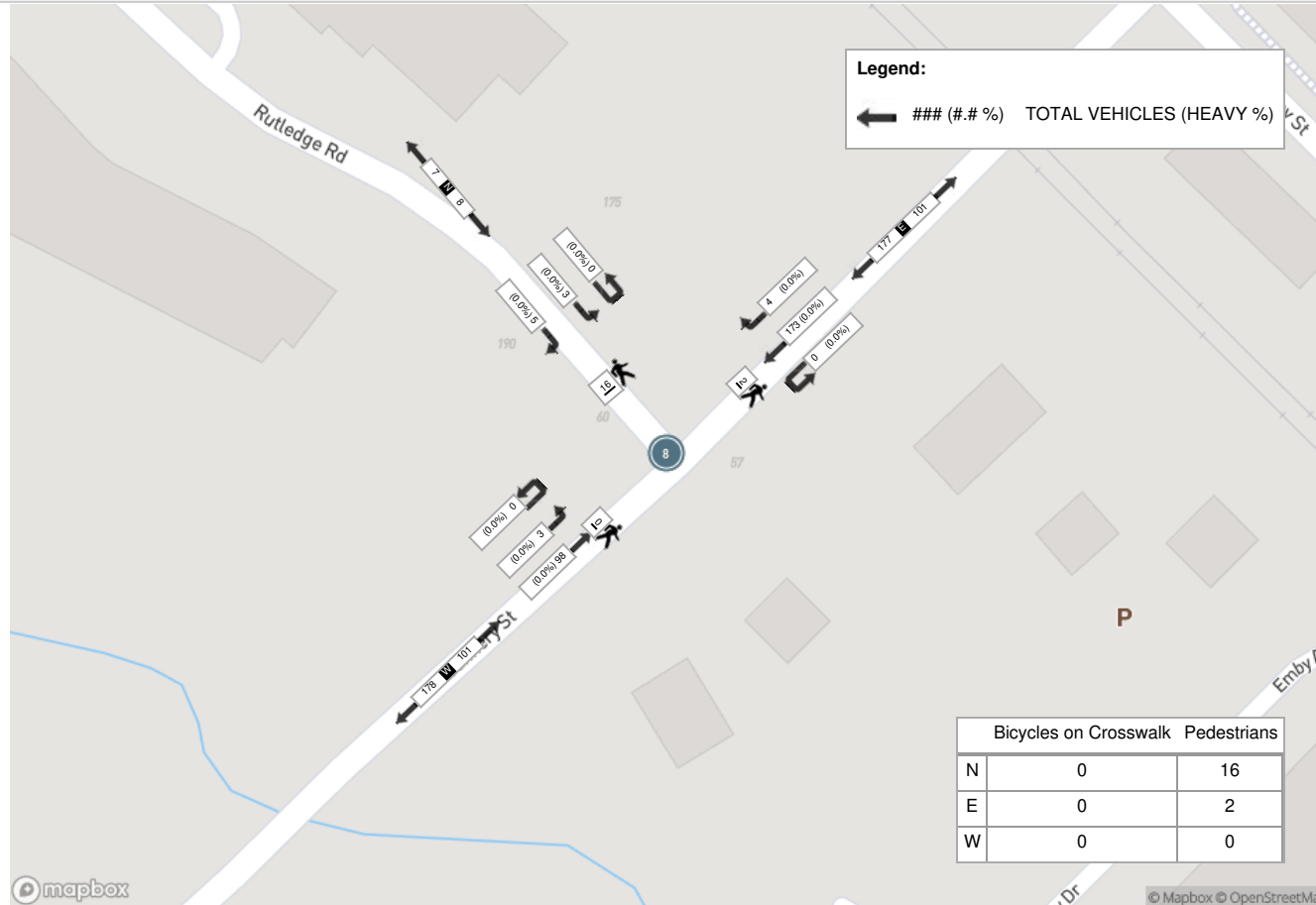
Peak Hour: 05:00 PM - 06:00 PM Weather: Broken Clouds (20.49 °C)

Start Time	N Approach RUTLEDGE RD					E Approach TANNERY ST					W Approach TANNERY ST					Int. Total (15 min)
	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	Thru	Left	UTurn	Peds	Approach Total	
17:00:00	4	1	0	1	5	1	42	0	2	43	27	2	0	0	29	77
17:15:00	1	2	0	5	3	2	46	0	0	48	23	1	0	0	24	75
17:30:00	0	0	0	4	0	0	44	0	0	44	22	0	0	0	22	66
17:45:00	0	0	0	6	0	1	41	0	0	42	26	0	0	0	26	68
Grand Total	5	3	0	16	8	4	173	0	2	177	98	3	0	0	101	286
Approach%	62.5%	37.5%	0%	-	-	2.3%	97.7%	0%	-	-	97%	3%	0%	-	-	-
Totals %	1.7%	1%	0%	2.8%	1.4%	60.5%	0%	61.9%	34.3%	1%	0%	35.3%	-	-	-	-
PHF	0.31	0.38	0	0.4	0.5	0.94	0	0.92	0.91	0.38	0	0.87	-	-	-	-
Heavy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Heavy %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Lights	5	3	0	8	4	173	0	177	98	3	0	101	-	-	-	-
Lights %	100%	100%	0%	100%	100%	100%	0%	100%	100%	100%	0%	100%	-	-	-	-
Single-Unit Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Single-Unit Trucks %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Buses %	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
Articulated Trucks %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bicycles on Road %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Pedestrians	-	-	-	16	-	-	-	2	-	-	-	-	0	-	-	-
Pedestrians%	-	-	-	88.9%	-	-	-	11.1%	-	-	-	-	0%	-	-	-
Bicycles on Crosswalk	-	-	-	0	-	-	-	0	-	-	-	-	0	-	-	-
Bicycles on Crosswalk%	-	-	-	0%	-	-	-	0%	-	-	-	-	0%	-	-	-

Peak Hour: 07:45 AM - 08:45 AM Weather: Scattered Clouds (6.79 °C)



Peak Hour: 05:00 PM - 06:00 PM Weather: Broken Clouds (20.49 °C)



Signal Timing Plans



File: CA.13.SIG
Signal Timing Request
RT.07.3808
RT.07.3925

May 24, 2023

To Aarzoo Dhanani:

Re: Traffic Signal Timing

**Thomas Street at Queen Street South
Thomas Street and Gafney Drive/McFarren Boulevard**

The side street phases (4,8) are actuated, unless noted in the timing plan, this means a vehicle or pedestrian must be present on the side street before the side street is given a green indication. Vehicle presence on the side street would result in a possible green time of between the minimum and maximum time noted, depending on demand. Similarly phase 1 is also actuated. Pedestrian "Walk" and flashing "Don't Walk" time on the side street, as noted, would be used in the event that the pedestrian push button is activated. During the side street pedestrian indications, the side street vehicle green is concurrently displayed. Should there be no demand on the actuated phase, the signals would result in a green indication on the major street (2,6).

Note: All times recorded in seconds, based on full demand.

The time of day plan is used for system control operation. In the event that the coordination pattern has a cycle length, offset and split value identified, the cycle length, split and offset values, as noted, would be used. However, when the time of day plan is programmed using 'Action' 8, the mode is 'Free', meaning no cycle length, split and offset values are given and the intersection operates using the phase timings provided in the report.

Aarzo Dhanani
Re: Traffic Signal Timing
May 24, 2023

2

Should you require further information, please contact Steve Gee, at 905-615-3200 ext. 5169.

Sincerely,

Steve Gee
Traffic System Coordinator, Traffic Systems and ITS
Traffic Systems and ITS
Transportation and Works Department
City of Mississauga
905-615-3200 ext. 5169
steve.gee@mississauga.ca

c: Jim Kartsomanis, Supervisor, Traffic Systems and ITS

Split	9	10	11	12	13	14	15		
Sequence	Sequence	1	1	1	1	1	1	1	
Coordination - Splits	Units	Phase 2	Phase 4	Phase 6	Phase 8				
Split 1 - Mode	Enum	none	pedestrianRecall	none	pedestrianRecall				
Split 1 - Time	Sec	62	38	62	38				
Split 1 - Coord	Enum	True	False	True	False				
Split 2 - Mode	Enum	none	pedestrianRecall	none	pedestrianRecall				
Split 2 - Time	Sec	40	30	40	30				
Split 2 - Coord	Enum	True	False	True	False				
Split 3 - Mode	Enum	none	pedestrianRecall	none	pedestrianRecall				
Split 3 - Time	Sec	78	32	78	32				
Split 3 - Coord	Enum	True	False	True	False				
Time Base - Schedule 1-16	Units	1	2	3	4	5	6	7	8
Month	Bit	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND	J-----	-F-----	---A-----	----M-----	-----J----
Day of Week	Bit	-MTWTF-	S-----	-----S	-M----	-M----	----F-	-M----	----F-
Day of Month	Bit	1234567890123456789012345678901	1234567890123456789012345678901	1234567890123456789012345678901	-3-----	-----1-----	-----5-----	-----3-----	-----1-----
Day Plan	Number	1	3	2	3	3	3	3	3
Time Base - Schedule 1-16	Units	9	10	11	12	13	14	15	16
Month	Bit	-----A---	-----S---	-----O--	-----D	-----D	-----D	-----S---	-----
Day of Week	Bit	-M----	-M----	-M----	--T----	-M----	--W---	----F-	SMTWTFS
Day of Month	Bit	1-----	---5-----	-----0-----	-----7---	-----6-----	-----8-----	-----	-----
Day Plan	Number	3	3	3	3	3	3	3	0
Time Base - Day Plans	Units	Evt 1	Evt 2	Evt 3	Evt 4	Evt 5	Evt 6	Evt 7	
Plan 1 Hour	Hour	0	7	9	16	18	21	3	
Plan 1 Minute	Min	0	0	0	0	30	30	0	
Plan 1 Action	Number	8	1	2	3	2	8	7	
Plan 2 Hour	Hour	0	9	21	3	0	0	0	
Plan 2 Minute	Min	0	0	30	0	0	0	0	
Plan 2 Action	Number	8	2	8	7	0	0	0	
Plan 3 Hour	Hour	0	10	18	3	0	0	0	
Plan 3 Minute	Min	0	0	30	0	0	0	0	
Plan 3 Action	Number	8	2	8	7	0	0	0	
Time Base - Action 1-16	Units	1	2	3	4	5	6	7	8
Pattern	Enum	Pattern 1	Pattern 2	Pattern 3	Pattern 4	Pattern 5	Pattern 6	Free	Free
Aux. Functions	Bit								
Spec. Functions	Bit								
Time Base - Action 1-16	Units	9	10						
Pattern	Enum	Pattern 9	Pattern 10						
Aux. Functions	Bit								
Spec. Functions	Bit								
Time Base - Daylight Saving	Units	Value							
Begin Month	Enum	march							
Begin Occurrence	Enum	second							
Begin DOW	Enum	sunday							
Begin DOM	Date	1							
Begin Seconds	Sec	7200							
End Month	Enum	november							
End Occurrence	Enum	first							

Signal Timing Report

Runtime: 2019-01-31 07:43:31

Device: 3910

Region: Mississauga

Signal ID: 3910

Location: THOMAS STREET E at GO Station

Phase	Units	1	2	3	4	5	6	7	8
Walk	Sec	0	8	0	8	0	0	0	0
Ped Clear	Sec	0	8	0	8	0	0	0	0
Min Green	Sec	5	8	0	8	0	0	0	0
Passage	Sec	2.0	3.0	0.0	4.0	0.0	0.0	0.0	0.0
Maximum 1	Sec	15	17	0	60	0	0	0	0
Maximum 2	Sec	15	17	0	60	0	0	0	0
Yellow Change	Sec	3.0	4.0	0.0	4.0	0.0	0.0	0.0	0.0
Red Clearance	Sec	0.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0
Red Revert	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Added Initial	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Initial	Sec	0	0	0	0	0	0	0	0
Time Before	Sec	0	0	0	0	0	0	0	0
Cars Before	Veh	0	0	0	0	0	0	0	0
Time To Reduce	Sec	0	0	0	0	0	0	0	0
Reduce By	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Min Gap	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Max Limit	Sec	0	0	0	0	0	0	0	0
Dynamic Max Step	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
[P2] Start Up	Enum	phaseNotOn	redClear	phaseNotOn	phaseNotOn	phaseNotOn	phaseNotOn	phaseNotOn	phaseNotOn
[P2] Options	Bit	Enabled Non Lock Det Sim Gap Disable	Enabled Non-Actuated 1 Non Lock Det Max Veh Recall Ped Recall Sim Gap Disable Act Rest In Walk	Non Lock Det Sim Gap Disable	Enabled Non Lock Det Sim Gap Disable	Non Lock Det Sim Gap Disable	Non Lock Det Sim Gap Disable	Non Lock Det Sim Gap Disable	Non Lock Det Sim Gap Disable

Unit Param **Units** **Value**

Start Up Flash	Sec	0
Auto Ped Clear	Enum	enable
Back Up Time	Sec	300
Red Revert	Sec	0.0

Coord Param **Units** **Value**

Operational Mode	Enum	Automatic
Correction Mode	Enum	shortway
Maximum Mode	Enum	maxInhibit
Force Mode	Enum	fixed

Coord Pattern **Units** **1** **2** **3** **4** **5** **6** **7** **8**

Cycle Time	Sec	100	0	110	0	0	0	0	0
Offset	Sec	11	0	10	0	0	0	0	0
Split	Split	1	1	3	1	1	1	1	1
Sequence	Sequence	1	1	1	1	1	1	1	1

Coord Pattern **Units** **9** **10** **11** **12** **13** **14** **15** **16**

Cycle Time	Sec	0	0	0	0	0	0	0	0
Offset	Sec	0	0	0	0	0	0	0	0
Split	Split	1	1	1	1	1	1	1	1
Sequence	Sequence	1	1	1	1	1	1	1	1

Coord Split **Units** **1** **2** **3** **4** **5** **6** **7** **8**

Split 1 - Mode	Enum	none	none	none	none	none	none	none	none
Split 1 - Time	Sec	20	52	0	28	0	0	0	0
Split 1 - Coord	Enum	false	true	false	false	false	false	false	false
Split 2 - Mode	Enum	none	none	none	none	none	none	none	none
Split 2 - Time	Sec	0	0	0	0	0	0	0	0
Split 2 - Coord	Enum	false	true	false	false	false	false	false	false
Split 3 - Mode	Enum	phaseOmitted	none	none	none	none	none	none	none
Split 3 - Time	Sec	0	30	0	80	0	0	0	0
Split 3 - Coord	Enum	false	true	false	false	false	false	false	false

TB Param **Units** **Value**

Daylight Saving	Enum	enableDaylightSavingNode
Standard Time Zone	Sec	-18000
Pattern Sync	Sec	0

TB Schedule **Units** **1** **2** **3** **4** **5** **6** **7** **8**

Month	Bit	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND	J-----	-F-----	---A-----	----M-----	-----J-----
Day of Week	Bit	-MTWTF-	-----S	S-----	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS

Day of Month	Bit	123456789012345 678901234567890 1	123456789012345 678901234567890 1	123456789012345 678901234567890 1	1-----8-----9-----0-----1----- -----D-----D-----D----- -----	-----	-----	-----	-----
Day Plan	Number	1	2	3	3	3	3	3	3
TB Schedule	Units	9	10	11	12	13	14	15	16
Month	Bit	-----A---	-----S---	-----O--	-----D	-----D	-----D	0	0
Day of Week	Bit	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS
Day of Month	Bit	-----5-----	-----2-----	-----4-----	-----5-----	-----6-----	-----4-----	0	0
Day Plan	Number	3	3	3	3	3	3	0	0
TB Dayplan	Units	1	2	3	4	5	6	7	8
Plan 1 Hour	Hour	0	6	8	16	19	0	0	0
Plan 1 Minute	Min	0	45	30	45	0	0	0	0
Plan 1 Action	Number	8	1	8	3	8	0	0	0
Plan 2 Hour	Hour	0	0	0	0	0	0	0	0
Plan 2 Minute	Min	0	0	0	0	0	0	0	0
Plan 2 Action	Number	8	0	0	0	0	0	0	0
Plan 3 Hour	Hour	0	0	0	0	0	0	0	0
Plan 3 Minute	Min	0	0	0	0	0	0	0	0
Plan 3 Action	Number	8	0	0	0	0	0	0	0
Plan 4 Hour	Hour	0	0	0	0	0	0	0	0
Plan 4 Minute	Min	0	0	0	0	0	0	0	0
Plan 4 Action	Number	0	0	0	0	0	0	0	0
Plan 5 Hour	Hour	0	0	0	0	0	0	0	0
Plan 5 Minute	Min	0	0	0	0	0	0	0	0
Plan 5 Action	Number	0	0	0	0	0	0	0	0
Plan 6 Hour	Hour	0	0	0	0	0	0	0	0
Plan 6 Minute	Min	0	0	0	0	0	0	0	0
Plan 6 Action	Number	0	0	0	0	0	0	0	0
Plan 7 Hour	Hour	0	0	0	0	0	0	0	0
Plan 7 Minute	Min	0	0	0	0	0	0	0	0
Plan 7 Action	Number	0	0	0	0	0	0	0	0
Plan 8 Hour	Hour	0	0	0	0	0	0	0	0
Plan 8 Minute	Min	0	0	0	0	0	0	0	0
Plan 8 Action	Number	0	0	0	0	0	0	0	0
[S] State	Enum								
[P2] Track Overlap	Phase (,)	()	()	()	()	()	()		
[P2] Dwell Overlap	Phase (,)	(1)	()	(1)	(3)	()	()		
[P2] Cycling Phase	Phase (,)	()	()	()	()	()	()		
[P2] Cycling Ped	Phase (,)	()	()	()	()	()	()		
[P2] Cycling Overlap	Phase (,)	()	()	()	()	()	()		
Enter Yellow Change	Sec	4.0	25.5	25.5	25.5	25.5	25.5		
Enter Red Clear	Sec	2.0	25.5	25.5	25.5	25.5	25.5		
Track Yellow	Sec	25.5	25.5	25.5	25.5	25.5	25.5		
Track Red Clear	Sec	25.5	25.5	25.5	25.5	25.5	25.5		
Ring	Units	1		2		3		4	
[P2] Sequence 1	Phase (,)	(1,2,4)		()		()		()	
[P2] Sequence 2	Phase (,)	()		()		()		()	
[P2] Sequence 3	Phase (,)	()		()		()		()	
[P2] Sequence 4	Phase (,)	()		()		()		()	
Channel Param	Units	1	2	3	4	5	6	7	8
Control Source	Phase or Overlap	1	2	3	4	0	0	0	0
Control Type	Enum	phaseVehicle	phaseVehicle	phaseVehicle	phaseVehicle	phaseVehicle	phaseVehicle	phaseVehicle	phaseVehicle
Flash	Bit	Flash Red	Flash Red	Flash Red Half Hertz	Flash Red Half Hertz	0	0	0	0
Dimming	Bit	0	0	0	0	0	0	0	0
Channel Param	Units	9	10	11	12	13	14	15	16
Control Source	Phase or Overlap	2	4	0	0	1	0	3	0
Control Type	Enum	phasePedestrian	phasePedestrian	phasePedestrian	phasePedestrian	overlap	overlap	overlap	overlap
Flash	Bit	0	0	0	0	Flash Red	0	Flash Red	0
Dimming	Bit	0	0	0	0	0	0	0	0
Overlap	Units	1	2	3	4	5	6	7	8
[P2] Type	Enum	normal	normal	normal	normal	normal	normal	normal	normal
[P2] Included	Phase (,)	(1,2)	()	(4)	()	()	()	()	()
[P2] Modifier Phases	Phase (,)	()	()	()	()	()	()	()	()
Trail Green	Sec	0	0	0	0	0	0	0	0
Trail Yellow	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Trail Red	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Overlap	Units	9	10	11	12	13	14	15	16
[P2] Type	Enum	normal	normal	normal	normal	normal	normal	normal	normal
[P2] Included	Phase (,)	()	()	()	()	()	()	()	()
[P2] Modifier Phases	Phase (,)	()	()	()	()	()	()	()	()
Trail Green	Sec	0	0	0	0	0	0	0	0

Trail Yellow	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Trail Red	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Appendix G

Level of Service Definitions

Level of Service Definitions

Two-Way Stop Controlled Intersections

Level of Service	Control Delay per Vehicle (seconds)	Interpretation
A	≤ 10	EXCELLENT. Large and frequent gaps in traffic on the main roadway. Queuing on the minor street is rare.
B	> 10 and ≤ 15	VERY GOOD. Many gaps exist in traffic on the main roadway. Queuing on the minor street is minimal.
C	> 15 and ≤ 25	GOOD. Fewer gaps exist in traffic on the main roadway. Delay on minor approach becomes more noticeable.
D	> 25 and ≤ 35	FAIR. Infrequent and shorter gaps in traffic on the main roadway. Queue lengths develop on the minor street.
E	> 35 and ≤ 50	POOR. Very infrequent gaps in traffic on the main roadway. Queue lengths become noticeable.
F	> 50	UNSATISFACTORY. Very few gaps in traffic on the main roadway. Excessive delay with significant queue lengths on the minor street.

Adapted from Highway Capacity Manual 2000, Transportation Research Board

Level of Service Definitions

Signalized Intersections

Level of Service	Control Delay per Vehicle (seconds)	Interpretation
A	≤ 10	EXCELLENT. Extremely favourable progression with most vehicles arriving during the green phase. Most vehicles do not stop and short cycle lengths may contribute to low delay.
B	> 10 and ≤ 20	VERY GOOD. Very good progression and/or short cycle lengths with slightly more vehicles stopping than LOS "A" causing slightly higher levels of average delay.
C	> 20 and ≤ 35	GOOD. Fair progression and longer cycle lengths lead to a greater number of vehicles stopping than LOS "B".
D	> 35 and ≤ 55	FAIR. Congestion becomes noticeable with higher average delays resulting from a combination of long cycle lengths, high volume-to-capacity ratios and unfavourable progression.
E	> 55 and ≤ 80	POOR. Lengthy delays values are indicative of poor progression, long cycle lengths and high volume-to-capacity ratios. Individual cycle failures are common with individual movement failures also common.
F	> 80	UNSATISFACTORY. Indicative of oversaturated conditions with vehicular demand greater than the capacity of the intersection.

Adapted from Highway Capacity Manual 2000, Transportation Research Board

Appendix H

2023 Detailed Capacity Analysis

Lanes, Volumes, Timings
1: Queen st & Thomas St

Existing AM
03/20/2024



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	247	120	75	336	331	168
Future Volume (vph)	247	120	75	336	331	168
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0	20.0	35.0			0.0
Storage Lanes	0	0	1			0
Taper Length (m)	0.0		55.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.97	1.00		0.99	
Frt		0.850			0.955	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1722	1512	1772	1746	1630	0
Flt Permitted	0.950		0.408			
Satd. Flow (perm)	1700	1467	758	1746	1630	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		130			41	
Link Speed (k/h)	50			40	40	
Link Distance (m)	168.1			211.1	113.7	
Travel Time (s)	12.1			19.0	10.2	
Confl. Peds. (#/hr)	5	4	9			9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	6%	8%	3%	10%	14%	7%
Adj. Flow (vph)	268	130	82	365	360	183
Shared Lane Traffic (%)						
Lane Group Flow (vph)	268	130	82	365	543	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)	4.9			4.9	4.9	
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
Number of Detectors	1	1	0	0	0	
Detector Template	Left			Thru	Thru	
Leading Detector (m)	8.5	8.5	0.0	0.0	0.0	
Trailing Detector (m)	-0.2	-0.5	0.0	0.0	0.0	
Detector 1 Position(m)	-0.2	-0.5	-0.5	0.0	0.0	
Detector 1 Size(m)	8.7	9.0	9.0	1.8	1.8	
Detector 1 Type	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	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Turn Type	Perm	Perm	Perm	NA	NA	
Protected Phases				6	2	
Permitted Phases	8	8	6	6	2	
Detector Phase	8	8	6	6	2	
Switch Phase						

Lanes, Volumes, Timings
1: Queen st & Thomas St

Existing AM
03/20/2024

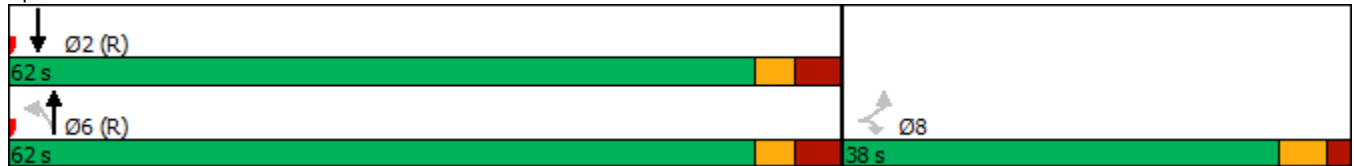


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	26.5	26.5	28.5	28.5	28.5	
Total Split (s)	38.0	38.0	62.0	62.0	62.0	
Total Split (%)	38.0%	38.0%	62.0%	62.0%	62.0%	
Maximum Green (s)	32.5	32.5	55.5	55.5	55.5	
Yellow Time (s)	3.5	3.5	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	3.5	3.5	3.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.5	6.5	6.5	6.5	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	C-Max	C-Max	C-Max	
Walk Time (s)	10.0	10.0	10.0	10.0	10.0	
Flash Dont Walk (s)	10.0	10.0	12.0	12.0	12.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	
Act Effct Green (s)	21.1	21.1	66.9	66.9	66.9	
Actuated g/C Ratio	0.21	0.21	0.67	0.67	0.67	
v/c Ratio	0.75	0.32	0.16	0.31	0.49	
Control Delay	44.4	5.0	8.5	8.7	10.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	44.4	5.0	8.5	8.7	10.3	
LOS	D	A	A	A	B	
Approach Delay	31.6			8.7	10.3	
Approach LOS	C			A	B	

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 70 (70%), Referenced to phase 2:SBT and 6:NBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.75
 Intersection Signal Delay: 15.9
 Intersection LOS: B
 Intersection Capacity Utilization 65.8%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 1: Queen st & Thomas St



Queues
1: Queen st & Thomas St

Existing AM
03/20/2024

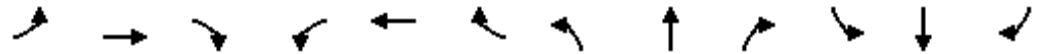


Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	268	130	82	365	543
v/c Ratio	0.75	0.32	0.16	0.31	0.49
Control Delay	44.4	5.0	8.5	8.7	10.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	44.4	5.0	8.5	8.7	10.3
Queue Length 50th (m)	46.3	3.2	4.9	24.4	39.1
Queue Length 95th (m)	66.3	4.4	12.9	46.6	75.5
Internal Link Dist (m)	144.1			187.1	89.7
Turn Bay Length (m)	20.0	20.0	35.0		
Base Capacity (vph)	552	564	507	1168	1103
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.49	0.23	0.16	0.31	0.49

Intersection Summary

Lanes, Volumes, Timings
2: Thomas St & Broadway St

Existing AM
03/20/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔			↔↔			↔			↔	
Traffic Volume (vph)	104	376	4	2	266	15	2	0	2	8	1	77
Future Volume (vph)	104	376	4	2	266	15	2	0	2	8	1	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.999			0.992			0.932			0.879	
Flt Protected		0.989						0.976			0.995	
Satd. Flow (prot)	0	3363	0	0	3279	0	0	1713	0	0	1647	0
Flt Permitted		0.989						0.976			0.995	
Satd. Flow (perm)	0	3363	0	0	3279	0	0	1713	0	0	1647	0
Link Speed (k/h)		50			50			30			40	
Link Distance (m)		125.4			168.1			64.9			284.3	
Travel Time (s)		9.0			12.1			7.8			25.6	
Confl. Peds. (#/hr)	11		15	15		11	1		1	1		1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	9%	2%	2%	11%	1%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	113	409	4	2	289	16	2	0	2	9	1	84
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	526	0	0	307	0	0	4	0	0	94	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)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			1.6			4.9	
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
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	38.8%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis

2: Thomas St & Broadway St

Existing AM
03/20/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔			↔↔			↔			↔	
Traffic Volume (veh/h)	104	376	4	2	266	15	2	0	2	8	1	77
Future Volume (Veh/h)	104	376	4	2	266	15	2	0	2	8	1	77
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	113	409	4	2	289	16	2	0	2	9	1	84
Pedestrians		1			1			15			11	
Lane Width (m)		3.7			3.7			3.7			3.7	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		0			0			1			1	
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)		125			168							
pX, platoon unblocked												
vC, conflicting volume	316			428			886	972	222	746	966	164
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	316			428			886	972	222	746	966	164
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	91			100			99	100	100	97	100	90
cM capacity (veh/h)	1235			1112			193	222	769	272	224	842
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total	318	208	146	160	4	94						
Volume Left	113	0	2	0	2	9						
Volume Right	0	4	0	16	2	84						
cSH	1235	1700	1112	1700	308	684						
Volume to Capacity	0.09	0.12	0.00	0.09	0.01	0.14						
Queue Length 95th (m)	2.1	0.0	0.0	0.0	0.3	3.3						
Control Delay (s)	3.5	0.0	0.1	0.0	16.8	11.1						
Lane LOS	A		A		C	B						
Approach Delay (s)	2.1		0.1		16.8	11.1						
Approach LOS					C	B						
Intersection Summary												
Average Delay			2.4									
Intersection Capacity Utilization			38.8%		ICU Level of Service				A			
Analysis Period (min)			15									

Lanes, Volumes, Timings
 3: Streetsville Go Parking Lot/Private Access & Thomas St

Existing AM
 03/20/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗	↖	↘			↕	↗		↕	
Traffic Volume (vph)	0	305	473	85	168	0	188	1	64	0	0	2
Future Volume (vph)	0	305	473	85	168	0	188	1	64	0	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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			0.96	0.99				1.00	0.97		0.98	
Frt			0.850						0.850		0.865	
Flt Protected				0.950				0.953				
Satd. Flow (prot)	0	1762	1555	1789	1746	0	0	1795	1585	0	1604	0
Flt Permitted				0.534				0.727				
Satd. Flow (perm)	0	1762	1491	995	1746	0	0	1364	1537	0	1604	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)			514								723	
Link Speed (k/h)		50			50			40			30	
Link Distance (m)		129.3			125.4			171.6			40.7	
Travel Time (s)		9.3			9.0			15.4			4.9	
Confl. Peds. (#/hr)	20		7	7		20	2		10	10		2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	9%	5%	2%	10%	2%	2%	2%	3%	2%	2%	2%
Adj. Flow (vph)	0	332	514	92	183	0	204	1	70	0	0	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	332	514	92	183	0	0	205	70	0	2	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			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
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	0	0	1	0		1	1	1	1	1	
Detector Template	Left	Thru	Right		Thru		Left			Left		
Leading Detector (m)	6.1	0.0	0.0	21.8	0.0		6.1	6.0	6.0	6.1	8.8	
Trailing Detector (m)	0.0	0.0	0.0	12.8	0.0		0.0	-3.0	-3.0	0.0	-0.2	
Detector 1 Position(m)	0.0	0.0	0.0	12.8	0.0		0.0	-3.0	-3.0	0.0	-0.2	
Detector 1 Size(m)	6.1	1.8	6.1	9.0	1.8		6.1	9.0	9.0	6.1	9.0	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
Turn Type		NA	Perm	pm+pt	NA		Perm	NA	pm+ov		NA	
Protected Phases		2		1	2			4	1		4	
Permitted Phases	2		2	2			4		4	4		
Detector Phase	2	2	2	1	2		4	4	1	4	4	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	5.0	8.0		8.0	8.0	5.0	8.0	8.0	
Minimum Split (s)	25.0	25.0	25.0	9.5	25.0		25.0	25.0	9.5	25.0	25.0	
Total Split (s)	52.0	52.0	52.0	20.0	52.0		28.0	28.0	20.0	28.0	28.0	

Lanes, Volumes, Timings
 3: Streetsville Go Parking Lot/Private Access & Thomas St

Existing AM
 03/20/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)	52.0%	52.0%	52.0%	20.0%	52.0%		28.0%	28.0%	20.0%	28.0%	28.0%	
Maximum Green (s)	46.0	46.0	46.0	17.0	46.0		22.0	22.0	17.0	22.0	22.0	
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0		4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	0.0	2.0		2.0	2.0	0.0	2.0	2.0	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)		6.0	6.0	3.0	6.0			6.0	3.0		6.0	
Lead/Lag	Lag	Lag	Lag	Lead	Lag				Lead			
Lead-Lag Optimize?	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	3.0	3.0	
Recall Mode	C-Max	C-Max	C-Max	None	C-Max		None	None	None	None	None	
Walk Time (s)	8.0	8.0	8.0		8.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)	8.0	8.0	8.0		8.0		8.0	8.0		8.0	8.0	
Pedestrian Calls (#/hr)	0	0	0		0		0	0		0	0	
Act Effct Green (s)		61.5	61.5	69.8	61.5			18.8	28.1		18.8	
Actuated g/C Ratio		0.62	0.62	0.70	0.62			0.19	0.28		0.19	
v/c Ratio		0.31	0.46	0.12	0.17			0.80	0.16		0.00	
Control Delay		7.2	3.8	3.1	8.0			61.1	24.2		0.0	
Queue Delay		0.0	0.0	0.0	0.0			0.0	0.0		0.0	
Total Delay		7.2	3.8	3.1	8.0			61.1	24.2		0.0	
LOS		A	A	A	A			E	C		A	
Approach Delay		5.1			6.3			51.7				
Approach LOS		A			A			D				

Intersection Summary

Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	100
Offset:	11 (11%), Referenced to phase 2:EBWB, Start of Green
Natural Cycle:	60
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.80
Intersection Signal Delay:	14.5
Intersection LOS:	B
Intersection Capacity Utilization:	65.5%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 3: Streetsville Go Parking Lot/Private Access & Thomas St

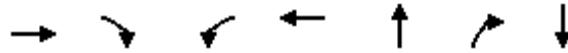


Queues

Existing AM

3: Streetsville Go Parking Lot/Private Access & Thomas St

03/20/2024



Lane Group	EBT	EBR	WBL	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	332	514	92	183	205	70	2
v/c Ratio	0.31	0.46	0.12	0.17	0.80	0.16	0.00
Control Delay	7.2	3.8	3.1	8.0	61.1	24.2	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.2	3.8	3.1	8.0	61.1	24.2	0.0
Queue Length 50th (m)	21.3	31.0	4.2	16.8	34.5	8.8	0.0
Queue Length 95th (m)	47.8	53.5	3.0	24.7	#60.1	17.1	0.0
Internal Link Dist (m)	105.3			101.4	147.6		16.7
Turn Bay Length (m)							
Base Capacity (vph)	1083	1114	853	1073	300	604	916
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.46	0.11	0.17	0.68	0.12	0.00

Intersection Summary

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

Lanes, Volumes, Timings
4: Thomas St & Joymar Dr

Existing AM
03/20/2024



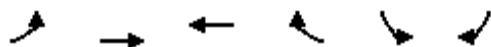
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕↕	↕↔		↘	↘
Traffic Volume (vph)	152	758	322	35	22	89
Future Volume (vph)	152	758	322	35	22	89
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0			0.0	10.0	0.0
Storage Lanes	0			0	1	1
Taper Length (m)	7.6				25.0	
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt			0.985			0.850
Flt Protected		0.992			0.950	
Satd. Flow (prot)	0	3277	3238	0	1807	1512
Flt Permitted		0.992			0.950	
Satd. Flow (perm)	0	3277	3238	0	1807	1512
Link Speed (k/h)		50	50		40	
Link Distance (m)		164.8	129.3		311.9	
Travel Time (s)		11.9	9.3		28.1	
Confl. Peds. (#/hr)	10			10	2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	12%	12%	2%	1%	8%
Adj. Flow (vph)	165	824	350	38	24	97
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	989	388	0	24	97
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.9	4.9		4.9	
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		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	49.7%
Analysis Period (min)	15
	ICU Level of Service A

HCM Unsignalized Intersection Capacity Analysis
4: Thomas St & Joymar Dr

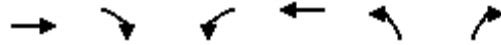
Existing AM
03/20/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔↕	↕↔		↕	↕
Traffic Volume (veh/h)	152	758	322	35	22	89
Future Volume (Veh/h)	152	758	322	35	22	89
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	165	824	350	38	24	97
Pedestrians			2		10	
Lane Width (m)			3.7		3.7	
Walking Speed (m/s)			1.1		1.1	
Percent Blockage			0		1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (m)		273	129			
pX, platoon unblocked					0.93	
vC, conflicting volume	398				1123	204
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	398				985	204
tC, single (s)	4.2				6.8	7.1
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.4
p0 queue free %	86				88	88
cM capacity (veh/h)	1139				195	777
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	SB 2
Volume Total	440	549	233	155	24	97
Volume Left	165	0	0	0	24	0
Volume Right	0	0	0	38	0	97
cSH	1139	1700	1700	1700	195	777
Volume to Capacity	0.14	0.32	0.14	0.09	0.12	0.12
Queue Length 95th (m)	3.5	0.0	0.0	0.0	2.9	3.0
Control Delay (s)	4.2	0.0	0.0	0.0	26.1	10.3
Lane LOS	A				D	B
Approach Delay (s)	1.9		0.0		13.4	
Approach LOS					B	
Intersection Summary						
Average Delay			2.3			
Intersection Capacity Utilization			49.7%		ICU Level of Service	A
Analysis Period (min)			15			

Lanes, Volumes, Timings
5: HillSide Drive & Thomas St

Existing AM
03/20/2024



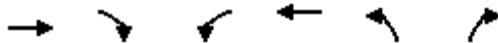
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑↑	
Traffic Volume (vph)	868	20	15	399	42	43
Future Volume (vph)	868	20	15	399	42	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt	0.997				0.932	
Flt Protected				0.998	0.976	
Satd. Flow (prot)	3199	0	0	3154	1713	0
Flt Permitted				0.998	0.976	
Satd. Flow (perm)	3199	0	0	3154	1713	0
Link Speed (k/h)	50			50	40	
Link Distance (m)	108.5			164.8	111.9	
Travel Time (s)	7.8			11.9	10.1	
Confl. Peds. (#/hr)		3	3			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	14%	3%	2%	16%	3%	1%
Adj. Flow (vph)	943	22	16	434	46	47
Shared Lane Traffic (%)						
Lane Group Flow (vph)	965	0	0	450	93	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)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	36.3%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
5: HillSide Drive & Thomas St

Existing AM
03/20/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑↑	
Traffic Volume (veh/h)	868	20	15	399	42	43
Future Volume (Veh/h)	868	20	15	399	42	43
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	943	22	16	434	46	47
Pedestrians					3	
Lane Width (m)					3.7	
Walking Speed (m/s)					1.1	
Percent Blockage					0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)	109			294		
pX, platoon unblocked			0.91	0.91	0.91	
vC, conflicting volume			968	1206	486	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			755	1018	222	
tC, single (s)			4.1	6.9	6.9	
tC, 2 stage (s)						
tF (s)			2.2	3.5	3.3	
p0 queue free %			98	78	93	
cM capacity (veh/h)			768	205	708	
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	
Volume Total	629	336	161	289	93	
Volume Left	0	0	16	0	46	
Volume Right	0	22	0	0	47	
cSH	1700	1700	768	1700	320	
Volume to Capacity	0.37	0.20	0.02	0.17	0.29	
Queue Length 95th (m)	0.0	0.0	0.4	0.0	8.3	
Control Delay (s)	0.0	0.0	1.2	0.0	20.8	
Lane LOS	A			C		
Approach Delay (s)	0.0		0.4		20.8	
Approach LOS				C		
Intersection Summary						
Average Delay			1.4			
Intersection Capacity Utilization			36.3%	ICU Level of Service	A	
Analysis Period (min)			15			

Lanes, Volumes, Timings
6: McFarren Blvd/Gaffney Dr & Thomas St

Existing AM
03/20/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷	↷	↶	↷	↷	↶	↷	↷	↶	↷	↷
Traffic Volume (vph)	9	784	21	36	393	12	22	5	75	23	11	29
Future Volume (vph)	9	784	21	36	393	12	22	5	75	23	11	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		35.0	30.0		0.0	25.0		0.0	0.0		0.0
Storage Lanes	1		1	1		0	1		0	0		0
Taper Length (m)	30.0			45.0			35.0			2.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.95	0.99	1.00		0.98	0.97				0.98
Frt			0.850		0.996			0.859				0.937
Flt Protected	0.950			0.950			0.950					0.982
Satd. Flow (prot)	1807	3202	1512	1789	3015	0	1807	1562	0	0	1706	0
Flt Permitted	0.497			0.304			0.848					0.844
Satd. Flow (perm)	933	3202	1433	568	3015	0	1580	1562	0	0	1454	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			71		5			82				32
Link Speed (k/h)		50			50			40				40
Link Distance (m)		165.0			108.5			146.4				138.4
Travel Time (s)		11.9			7.8			13.2				12.5
Confl. Peds. (#/hr)	11		15	15		11	24		27	27		24
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	14%	8%	2%	21%	2%	1%	2%	2%	2%	2%	2%
Adj. Flow (vph)	10	852	23	39	427	13	24	5	82	25	12	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	10	852	23	39	440	0	24	87	0	0	69	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	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	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	
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
Detector 2 Position(m)		9.4			9.4			9.4				9.4
Detector 2 Size(m)		0.6			0.6			0.6				0.6
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
6: McFarren Blvd/Gaffney Dr & Thomas St

Existing AM
03/20/2024

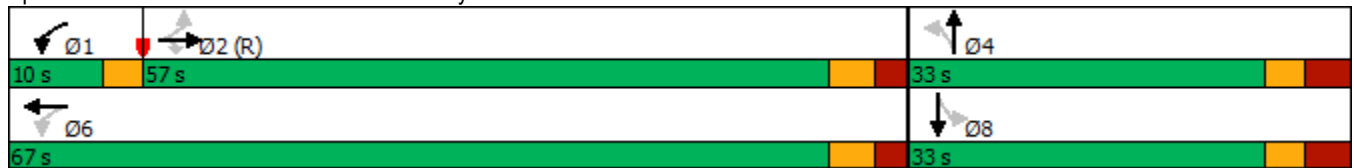


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			4				8
Permitted Phases	2		2	6			4			8		
Detector Phase	2	2	2	1	6		4	4		8		8
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	7.0	10.0		10.0	10.0		10.0		10.0
Minimum Split (s)	29.0	29.0	29.0	10.0	29.0		38.5	38.5		33.0		33.0
Total Split (s)	57.0	57.0	57.0	10.0	67.0		33.0	33.0		33.0		33.0
Total Split (%)	57.0%	57.0%	57.0%	10.0%	67.0%		33.0%	33.0%		33.0%		33.0%
Maximum Green (s)	51.0	51.0	51.0	7.0	61.0		26.5	26.5		26.5		26.5
Yellow Time (s)	3.5	3.5	3.5	3.0	3.5		3.0	3.0		3.0		3.0
All-Red Time (s)	2.5	2.5	2.5	0.0	2.5		3.5	3.5		3.5		3.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0				0.0
Total Lost Time (s)	6.0	6.0	6.0	3.0	6.0		6.5	6.5				6.5
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?	Yes	Yes	Yes	Yes								
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0		3.0
Recall Mode	C-Max	C-Max	C-Max	None	Max		None	None		None		None
Walk Time (s)	10.0	10.0	10.0		10.0		10.0	10.0		10.0		10.0
Flash Dont Walk (s)	13.0	13.0	13.0		13.0		22.0	22.0		22.0		22.0
Pedestrian Calls (#/hr)	0	0	0		0		0	0		0		0
Act Effct Green (s)	75.6	75.6	75.6	83.4	81.6		10.4	10.4				10.4
Actuated g/C Ratio	0.76	0.76	0.76	0.83	0.82		0.10	0.10				0.10
v/c Ratio	0.01	0.35	0.02	0.07	0.18		0.15	0.37				0.38
Control Delay	5.9	6.4	0.0	3.2	4.2		42.6	15.3				31.7
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0				0.0
Total Delay	5.9	6.4	0.0	3.2	4.2		42.6	15.3				31.7
LOS	A	A	A	A	A		D	B				C
Approach Delay		6.2			4.1			21.2				31.7
Approach LOS		A			A			C				C

Intersection Summary

Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	100
Offset:	79 (79%), Referenced to phase 2:EBTL, Start of Green
Natural Cycle:	80
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.38
Intersection Signal Delay:	7.8
Intersection LOS:	A
Intersection Capacity Utilization:	60.1%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 6: McFarren Blvd/Gaffney Dr & Thomas St



Queues
6: McFarren Blvd/Gaffney Dr & Thomas St

Existing AM
03/20/2024



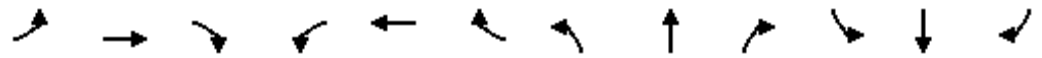
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	10	852	23	39	440	24	87	69
v/c Ratio	0.01	0.35	0.02	0.07	0.18	0.15	0.37	0.38
Control Delay	5.9	6.4	0.0	3.2	4.2	42.6	15.3	31.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.9	6.4	0.0	3.2	4.2	42.6	15.3	31.7
Queue Length 50th (m)	0.5	31.5	0.0	0.7	9.5	4.0	0.8	6.2
Queue Length 95th (m)	2.2	44.2	0.0	m3.6	19.2	10.8	13.3	17.9
Internal Link Dist (m)		141.0			84.5		122.4	114.4
Turn Bay Length (m)	30.0		35.0	30.0		25.0		
Base Capacity (vph)	705	2420	1100	558	2460	418	474	408
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	0.01	0.35	0.02	0.07	0.18	0.06	0.18	0.17

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lanes, Volumes, Timings
7: Joymar Dr & Tannery St

Existing AM
03/20/2024



















Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	12	56	34	37	67	53	65	87	42	99	84	25
Future Volume (vph)	12	56	34	37	67	53	65	87	42	99	84	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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												
Frt		0.955			0.954			0.971			0.984	
Flt Protected		0.994			0.988			0.984			0.977	
Satd. Flow (prot)	0	1824	0	0	1779	0	0	1809	0	0	1754	0
Flt Permitted		0.994			0.988			0.984			0.977	
Satd. Flow (perm)	0	1824	0	0	1779	0	0	1809	0	0	1754	0
Link Speed (k/h)		40			40			40			40	
Link Distance (m)		53.6			165.4			311.9			123.6	
Travel Time (s)		4.8			14.9			28.1			11.1	
Confl. Peds. (#/hr)	115		6	6		115	32		5	5		32
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	3%	1%	2%	1%	2%	1%	6%	6%	0%
Adj. Flow (vph)	13	61	37	40	73	58	71	95	46	108	91	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	111	0	0	171	0	0	212	0	0	226	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)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			4.9			4.9			4.9	
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
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	42.1%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
7: Joymar Dr & Tannery St

Existing AM
03/20/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	12	56	34	37	67	53	65	87	42	99	84	25
Future Volume (vph)	12	56	34	37	67	53	65	87	42	99	84	25
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	13	61	37	40	73	58	71	95	46	108	91	27
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	111	171	212	226								
Volume Left (vph)	13	40	71	108								
Volume Right (vph)	37	58	46	27								
Hadj (s)	-0.18	-0.13	-0.04	0.11								
Departure Headway (s)	5.1	5.1	4.9	5.0								
Degree Utilization, x	0.16	0.24	0.29	0.32								
Capacity (veh/h)	631	648	684	669								
Control Delay (s)	9.0	9.6	9.9	10.4								
Approach Delay (s)	9.0	9.6	9.9	10.4								
Approach LOS	A	A	A	B								
Intersection Summary												
Delay			9.9									
Level of Service			A									
Intersection Capacity Utilization			42.1%	ICU Level of Service	A							
Analysis Period (min)			15									

Lanes, Volumes, Timings
8: Tannery St & Rutledge Road

Existing AM
03/20/2024



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	2	197	162	6	5	1
Future Volume (vph)	2	197	162	6	5	1
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			0.995		0.977	
Flt Protected					0.960	
Satd. Flow (prot)	0	1764	1807	0	1767	0
Flt Permitted					0.960	
Satd. Flow (perm)	0	1764	1807	0	1767	0
Link Speed (k/h)		40	40		40	
Link Distance (m)		165.4	107.5		111.8	
Travel Time (s)		14.9	9.7		10.1	
Confl. Peds. (#/hr)	96			96	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	9%	6%	1%	2%	2%
Adj. Flow (vph)	2	214	176	7	5	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	216	183	0	6	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.9	4.9		4.9	
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		Free	Free		Stop	

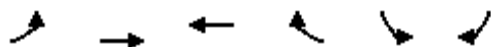
Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	23.5%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis

8: Tannery St & Rutledge Road

Existing AM
03/20/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	2	197	162	6	5	1
Future Volume (Veh/h)	2	197	162	6	5	1
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	214	176	7	5	1
Pedestrians		1	1		96	
Lane Width (m)		3.7	3.7		3.7	
Walking Speed (m/s)		1.1	1.1		1.1	
Percent Blockage		0	0		9	
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	279				494	276
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	279				494	276
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	100
cM capacity (veh/h)	1169				485	693
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	216	183	6			
Volume Left	2	0	5			
Volume Right	0	7	1			
cSH	1169	1700	511			
Volume to Capacity	0.00	0.11	0.01			
Queue Length 95th (m)	0.0	0.0	0.2			
Control Delay (s)	0.1	0.0	12.1			
Lane LOS	A		B			
Approach Delay (s)	0.1	0.0	12.1			
Approach LOS			B			
Intersection Summary						
Average Delay			0.2			
Intersection Capacity Utilization			23.5%		ICU Level of Service	A
Analysis Period (min)			15			

Lanes, Volumes, Timings
9: Broadway St/Crumbie St & Tannery St

Existing AM
03/20/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	24	129	64	19	141	6	24	26	25	9	25	12
Future Volume (vph)	24	129	64	19	141	6	24	26	25	9	25	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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												
Frt		0.960			0.995			0.955			0.965	
Flt Protected		0.995			0.994			0.984			0.990	
Satd. Flow (prot)	0	1768	0	0	1847	0	0	1775	0	0	1812	0
Flt Permitted		0.995			0.994			0.984			0.990	
Satd. Flow (perm)	0	1768	0	0	1847	0	0	1775	0	0	1812	0
Link Speed (k/h)		40			40			40			48	
Link Distance (m)		107.5			52.2			284.3			52.6	
Travel Time (s)		9.7			4.7			25.6			3.9	
Confl. Peds. (#/hr)	43		8	8		43	4		2	2		4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	5%	2%	2%	3%	2%	1%	2%	2%	1%	1%	2%
Adj. Flow (vph)	26	140	70	21	153	7	26	28	27	10	27	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	236	0	0	181	0	0	81	0	0	50	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)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
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
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 30.2%

ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis
 9: Broadway St/Crumble St & Tannery St

Existing AM
 03/20/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	24	129	64	19	141	6	24	26	25	9	25	12
Future Volume (Veh/h)	24	129	64	19	141	6	24	26	25	9	25	12
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	26	140	70	21	153	7	26	28	27	10	27	13
Pedestrians		4			2			8			43	
Lane Width (m)		3.7			3.7			3.7			3.7	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		0			0			1			4	
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	203			218			464	480	185	512	512	204
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	203			218			464	480	185	512	512	204
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			98			94	94	97	97	94	98
cM capacity (veh/h)	1314			1341			443	446	849	393	429	801
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	236	181	81	50								
Volume Left	26	21	26	10								
Volume Right	70	7	27	13								
cSH	1314	1341	529	478								
Volume to Capacity	0.02	0.02	0.15	0.10								
Queue Length 95th (m)	0.4	0.3	3.8	2.4								
Control Delay (s)	1.0	1.0	13.0	13.4								
Lane LOS	A	A	B	B								
Approach Delay (s)	1.0	1.0	13.0	13.4								
Approach LOS			B	B								
Intersection Summary												
Average Delay			3.9									
Intersection Capacity Utilization			30.2%		ICU Level of Service				A			
Analysis Period (min)			15									

Lanes, Volumes, Timings
1: Queen st & Thomas St

Existing PM
03/20/2024



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	174	168	122	391	387	262
Future Volume (vph)	174	168	122	391	387	262
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0	20.0	35.0			0.0
Storage Lanes	0	0	1			0
Taper Length (m)	0.0		55.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.90	0.89	0.98		0.97	
Frt		0.850			0.946	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1789	1585	1772	1865	1723	0
Flt Permitted	0.950		0.332			
Satd. Flow (perm)	1602	1404	610	1865	1723	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		183			63	
Link Speed (k/h)	50			40	40	
Link Distance (m)	168.1			211.1	113.7	
Travel Time (s)	12.1			19.0	10.2	
Confl. Peds. (#/hr)	38	35	47			47
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	3%	3%	3%	2%	2%
Adj. Flow (vph)	189	183	133	425	421	285
Shared Lane Traffic (%)						
Lane Group Flow (vph)	189	183	133	425	706	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)	4.9			4.9	4.9	
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
Number of Detectors	1	1	0	0	0	
Detector Template	Left			Thru	Thru	
Leading Detector (m)	8.5	8.5	0.0	0.0	0.0	
Trailing Detector (m)	-0.2	-0.5	0.0	0.0	0.0	
Detector 1 Position(m)	-0.2	-0.5	-0.5	0.0	0.0	
Detector 1 Size(m)	8.7	9.0	9.0	1.8	1.8	
Detector 1 Type	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	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Turn Type	Perm	Perm	Perm	NA	NA	
Protected Phases				6	2	
Permitted Phases	8	8	6	6	2	
Detector Phase	8	8	6	6	2	
Switch Phase						

Lanes, Volumes, Timings
1: Queen st & Thomas St

Existing PM
03/20/2024



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	26.5	26.5	28.5	28.5	28.5	
Total Split (s)	32.0	32.0	78.0	78.0	78.0	
Total Split (%)	29.1%	29.1%	70.9%	70.9%	70.9%	
Maximum Green (s)	26.5	26.5	71.5	71.5	71.5	
Yellow Time (s)	3.5	3.5	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	3.5	3.5	3.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.5	6.5	6.5	6.5	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	C-Max	C-Max	C-Max	
Walk Time (s)	10.0	10.0	10.0	10.0	10.0	
Flash Dont Walk (s)	10.0	10.0	12.0	12.0	12.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	
Act Effct Green (s)	18.2	18.2	79.8	79.8	79.8	
Actuated g/C Ratio	0.17	0.17	0.73	0.73	0.73	
v/c Ratio	0.71	0.48	0.30	0.31	0.56	
Control Delay	48.4	10.0	8.5	6.7	9.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	48.4	10.0	8.5	6.7	9.0	
LOS	D	B	A	A	A	
Approach Delay	29.5			7.2	9.0	
Approach LOS	C			A	A	

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 58 (53%), Referenced to phase 2:SBT and 6:NBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.71
 Intersection Signal Delay: 13.0
 Intersection LOS: B
 Intersection Capacity Utilization 76.1%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 1: Queen st & Thomas St



Queues
1: Queen st & Thomas St

Existing PM
03/20/2024



Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	189	183	133	425	706
v/c Ratio	0.71	0.48	0.30	0.31	0.56
Control Delay	48.4	10.0	8.5	6.7	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	48.4	10.0	8.5	6.7	9.0
Queue Length 50th (m)	30.1	7.7	8.0	26.0	50.1
Queue Length 95th (m)	44.0	20.2	20.4	47.8	94.2
Internal Link Dist (m)	144.1			187.1	89.7
Turn Bay Length (m)	20.0	20.0	35.0		
Base Capacity (vph)	385	477	442	1352	1267
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.49	0.38	0.30	0.31	0.56

Intersection Summary

Lanes, Volumes, Timings
2: Thomas St & Broadway St

Existing PM
03/20/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕			↕			↕	
Traffic Volume (vph)	117	345	5	0	399	21	4	1	2	16	0	129
Future Volume (vph)	117	345	5	0	399	21	4	1	2	16	0	129
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.999			0.992			0.961			0.880	
Flt Protected		0.988						0.972			0.995	
Satd. Flow (prot)	0	3482	0	0	3517	0	0	1759	0	0	1649	0
Flt Permitted		0.988						0.972			0.995	
Satd. Flow (perm)	0	3482	0	0	3517	0	0	1759	0	0	1649	0
Link Speed (k/h)		50			50			30			40	
Link Distance (m)		125.4			168.1			64.9			284.3	
Travel Time (s)		9.0			12.1			7.8			25.6	
Confl. Peds. (#/hr)	18		30	30		18						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	4%	2%	2%	3%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	127	375	5	0	434	23	4	1	2	17	0	140
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	507	0	0	457	0	0	7	0	0	157	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)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			1.6			4.9	
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
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	44.6%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis

2: Thomas St & Broadway St

Existing PM
03/20/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕			↕			↕	
Traffic Volume (veh/h)	117	345	5	0	399	21	4	1	2	16	0	129
Future Volume (Veh/h)	117	345	5	0	399	21	4	1	2	16	0	129
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	127	375	5	0	434	23	4	1	2	17	0	140
Pedestrians								30			18	
Lane Width (m)								3.7			3.7	
Walking Speed (m/s)								1.1			1.1	
Percent Blockage								3			2	
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)		125			168							
pX, platoon unblocked												
vC, conflicting volume	475			410			1018	1136	220	908	1128	246
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	475			410			1018	1136	220	908	1128	246
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	88			100			97	99	100	91	100	81
cM capacity (veh/h)	1064			1112			132	168	761	197	171	740
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total	314	192	217	240	7	157						
Volume Left	127	0	0	0	4	17						
Volume Right	0	5	0	23	2	140						
cSH	1064	1700	1112	1700	180	570						
Volume to Capacity	0.12	0.11	0.00	0.14	0.04	0.28						
Queue Length 95th (m)	2.8	0.0	0.0	0.0	0.8	7.8						
Control Delay (s)	4.3	0.0	0.0	0.0	25.8	13.7						
Lane LOS	A				D	B						
Approach Delay (s)	2.7		0.0		25.8	13.7						
Approach LOS					D	B						
Intersection Summary												
Average Delay			3.3									
Intersection Capacity Utilization			44.6%		ICU Level of Service				A			
Analysis Period (min)			15									

Lanes, Volumes, Timings
 3: Streetsville Go Parking Lot/Private Access & Thomas St

Existing PM
 03/20/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗	↖	↗			↖	↗		↕	
Traffic Volume (vph)	6	374	104	44	503	6	283	1	92	3	0	10
Future Volume (vph)	6	374	104	44	503	6	283	1	92	3	0	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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			0.91		1.00			0.99	0.97		0.98	
Frt			0.850		0.998				0.850		0.894	
Flt Protected		0.999		0.950				0.953			0.989	
Satd. Flow (prot)	0	1846	1601	1789	1877	0	0	1761	1601	0	1639	0
Flt Permitted		0.991		0.453				0.717			0.944	
Satd. Flow (perm)	0	1831	1450	853	1877	0	0	1314	1559	0	1561	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)			113		1						30	
Link Speed (k/h)		50			50			40			30	
Link Distance (m)		129.3			125.4			171.6			40.7	
Travel Time (s)		9.3			9.0			15.4			4.9	
Confl. Peds. (#/hr)	22		22	22		22	4		7	7		4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	4%	2%	2%	2%	2%	4%	2%	2%	2%	2%	2%
Adj. Flow (vph)	7	407	113	48	547	7	308	1	100	3	0	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	414	113	48	554	0	0	309	100	0	14	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			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
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	0	0	1	0		1	1	1	1	1	
Detector Template	Left	Thru	Right		Thru		Left			Left		
Leading Detector (m)	6.1	0.0	0.0	21.8	0.0		6.1	6.0	6.0	6.1	8.8	
Trailing Detector (m)	0.0	0.0	0.0	12.8	0.0		0.0	-3.0	-3.0	0.0	-0.2	
Detector 1 Position(m)	0.0	0.0	0.0	12.8	0.0		0.0	-3.0	-3.0	0.0	-0.2	
Detector 1 Size(m)	6.1	1.8	6.1	9.0	1.8		6.1	9.0	9.0	6.1	9.0	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2			2			4			4	
Permitted Phases	2		2	2			4		4	4		
Detector Phase	2	2	2	2	2		4	4	4	4	4	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0		8.0	8.0	8.0	8.0	8.0	
Minimum Split (s)	25.0	25.0	25.0	25.0	25.0		25.0	25.0	25.0	25.0	25.0	
Total Split (s)	30.0	30.0	30.0	30.0	30.0		80.0	80.0	80.0	80.0	80.0	

Lanes, Volumes, Timings
 3: Streetsville Go Parking Lot/Private Access & Thomas St

Existing PM
 03/20/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)	27.3%	27.3%	27.3%	27.3%	27.3%		72.7%	72.7%	72.7%	72.7%	72.7%	
Maximum Green (s)	24.0	24.0	24.0	24.0	24.0		74.0	74.0	74.0	74.0	74.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)		6.0	6.0	6.0	6.0			6.0	6.0		6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max		None	None	None	None	None	
Walk Time (s)	8.0	8.0	8.0	8.0	8.0		8.0	8.0	8.0	8.0	8.0	
Flash Dont Walk (s)	8.0	8.0	8.0	8.0	8.0		8.0	8.0	8.0	8.0	8.0	
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0	0	0	0	
Act Effect Green (s)		62.8	62.8	62.8	62.8			35.2	35.2		35.2	
Actuated g/C Ratio		0.57	0.57	0.57	0.57			0.32	0.32		0.32	
v/c Ratio		0.40	0.13	0.10	0.52			0.74	0.20		0.03	
Control Delay		15.4	2.9	10.0	14.3			42.7	25.3		2.3	
Queue Delay		0.0	0.0	0.0	0.0			0.0	0.0		0.0	
Total Delay		15.4	2.9	10.0	14.3			42.7	25.3		2.3	
LOS		B	A	B	B			D	C		A	
Approach Delay		12.7			14.0			38.5			2.3	
Approach LOS		B			B			D			A	

Intersection Summary

Area Type:	Other
Cycle Length:	110
Actuated Cycle Length:	110
Offset:	10 (9%), Referenced to phase 2:EBWB, Start of Green
Natural Cycle:	60
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.74
Intersection Signal Delay:	19.9
Intersection LOS:	B
Intersection Capacity Utilization:	69.0%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 3: Streetsville Go Parking Lot/Private Access & Thomas St

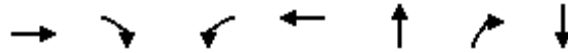


Queues

Existing PM

3: Streetsville Go Parking Lot/Private Access & Thomas St

03/20/2024



Lane Group	EBT	EBR	WBL	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	414	113	48	554	309	100	14
v/c Ratio	0.40	0.13	0.10	0.52	0.74	0.20	0.03
Control Delay	15.4	2.9	10.0	14.3	42.7	25.3	2.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.4	2.9	10.0	14.3	42.7	25.3	2.3
Queue Length 50th (m)	40.7	0.0	3.0	62.2	54.5	14.4	0.0
Queue Length 95th (m)	66.3	6.5	m9.8	121.0	66.6	20.7	1.5
Internal Link Dist (m)	105.3			101.4	147.6		16.7
Turn Bay Length (m)							
Base Capacity (vph)	1045	876	487	1072	883	1048	1059
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.40	0.13	0.10	0.52	0.35	0.10	0.01

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lanes, Volumes, Timings
4: Thomas St & Joymar Dr

Existing PM
03/20/2024



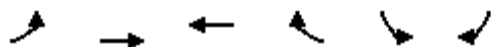
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕↕	↕↔		↘	↘
Traffic Volume (vph)	78	467	758	35	31	136
Future Volume (vph)	78	467	758	35	31	136
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0			0.0	10.0	0.0
Storage Lanes	0			0	1	1
Taper Length (m)	7.6				25.0	
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt			0.993			0.850
Flt Protected		0.993			0.950	
Satd. Flow (prot)	0	3433	3488	0	1789	1601
Flt Permitted		0.993			0.950	
Satd. Flow (perm)	0	3433	3488	0	1789	1601
Link Speed (k/h)		50	50		40	
Link Distance (m)		164.8	129.3		311.9	
Travel Time (s)		11.9	9.3		28.1	
Confl. Peds. (#/hr)	13					
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	6%	4%	2%	2%	2%
Adj. Flow (vph)	85	508	824	38	34	148
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	593	862	0	34	148
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.9	4.9		4.9	
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		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	50.6%
Analysis Period (min)	15
	ICU Level of Service A

HCM Unsignalized Intersection Capacity Analysis
4: Thomas St & Joymar Dr

Existing PM
03/20/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔↕	↕↔		↕	↕
Traffic Volume (veh/h)	78	467	758	35	31	136
Future Volume (Veh/h)	78	467	758	35	31	136
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	85	508	824	38	34	148
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)		273	129			
pX, platoon unblocked						
vC, conflicting volume	875				1280	444
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	875				1280	444
tC, single (s)	4.2				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	89				75	73
cM capacity (veh/h)	751				138	554
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	SB 2
Volume Total	254	339	549	313	34	148
Volume Left	85	0	0	0	34	0
Volume Right	0	0	0	38	0	148
cSH	751	1700	1700	1700	138	554
Volume to Capacity	0.11	0.20	0.32	0.18	0.25	0.27
Queue Length 95th (m)	2.7	0.0	0.0	0.0	6.4	7.5
Control Delay (s)	4.3	0.0	0.0	0.0	39.4	13.8
Lane LOS	A				E	B
Approach Delay (s)	1.9		0.0		18.6	
Approach LOS					C	
Intersection Summary						
Average Delay			2.7			
Intersection Capacity Utilization			50.6%		ICU Level of Service	A
Analysis Period (min)			15			

Lanes, Volumes, Timings
5: HillSide Drive & Thomas St

Existing PM
03/20/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑↑	
Traffic Volume (vph)	499	53	45	853	32	45
Future Volume (vph)	499	53	45	853	32	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt	0.985				0.921	
Flt Protected				0.997	0.980	
Satd. Flow (prot)	3322	0	0	3440	1707	0
Flt Permitted				0.997	0.980	
Satd. Flow (perm)	3322	0	0	3440	1707	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	108.5			164.8	111.9	
Travel Time (s)	8.1			12.4	8.4	
Confl. Peds. (#/hr)		13	13			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	9%	1%	2%	6%	1%	2%
Adj. Flow (vph)	542	58	49	927	35	49
Shared Lane Traffic (%)						
Lane Group Flow (vph)	600	0	0	976	84	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)		97	97		97	97
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	55.0%
ICU Level of Service	B
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
5: HillSide Drive & Thomas St

Existing PM
03/20/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑↑	
Traffic Volume (veh/h)	499	53	45	853	32	45
Future Volume (Veh/h)	499	53	45	853	32	45
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	542	58	49	927	35	49
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)	109			294		
pX, platoon unblocked				0.96	0.96	0.96
vC, conflicting volume				613	1146	313
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol				517	1071	205
tC, single (s)				4.1	6.8	6.9
tC, 2 stage (s)						
tF (s)				2.2	3.5	3.3
p0 queue free %				95	82	94
cM capacity (veh/h)				992	196	761
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	
Volume Total	361	239	358	618	84	
Volume Left	0	0	49	0	35	
Volume Right	0	58	0	0	49	
cSH	1700	1700	992	1700	346	
Volume to Capacity	0.21	0.14	0.05	0.36	0.24	
Queue Length 95th (m)	0.0	0.0	1.1	0.0	6.6	
Control Delay (s)	0.0	0.0	1.7	0.0	18.7	
Lane LOS				A	C	
Approach Delay (s)	0.0		0.6		18.7	
Approach LOS					C	
Intersection Summary						
Average Delay				1.3		
Intersection Capacity Utilization				55.0%	ICU Level of Service	B
Analysis Period (min)				15		

Lanes, Volumes, Timings
6: McFarren Blvd/Gaffney Dr & Thomas St

Existing PM
03/20/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	31	472	28	73	775	30	24	15	58	17	16	15
Future Volume (vph)	31	472	28	73	775	30	24	15	58	17	16	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		35.0	30.0		0.0	25.0		0.0	0.0		0.0
Storage Lanes	1		1	1		0	1		0	0		0
Taper Length (m)	30.0			45.0			35.0			2.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.94	0.98	1.00		0.99	0.99			0.99	
Frt			0.850		0.994			0.880			0.958	
Flt Protected	0.950			0.950			0.950				0.983	
Satd. Flow (prot)	1789	3349	1617	1789	3392	0	1789	1649	0	0	1763	0
Flt Permitted	0.324			0.446			0.724				0.851	
Satd. Flow (perm)	606	3349	1528	827	3392	0	1354	1649	0	0	1524	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			64		7			63			16	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		165.0			108.5			146.4			138.4	
Travel Time (s)		12.4			8.1			11.0			10.4	
Confl. Peds. (#/hr)	9		15	15		9	7		4	4		7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	9%	1%	2%	7%	2%	2%	2%	1%	2%	2%	2%
Adj. Flow (vph)	34	513	30	79	842	33	26	16	63	18	17	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	34	513	30	79	875	0	26	79	0	0	51	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)	97		97	97		97	97		97	97		97
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	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	
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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
6: McFarren Blvd/Gaffney Dr & Thomas St

Existing PM
03/20/2024

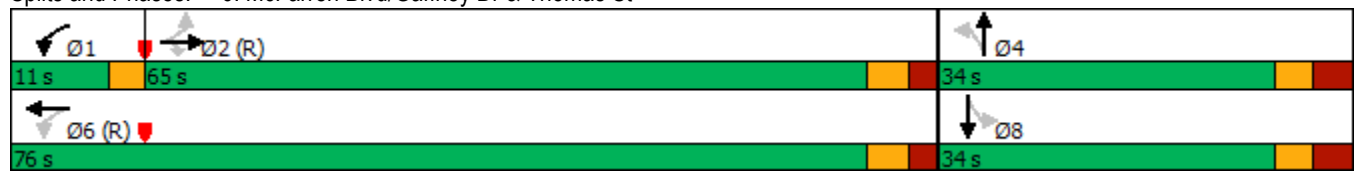


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			4				8
Permitted Phases	2		2	6			4			8		
Detector Phase	2	2	2	1	6		4	4		8		8
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	7.0	10.0		10.0	10.0		10.0		10.0
Minimum Split (s)	29.0	29.0	29.0	10.0	29.0		38.5	38.5		38.5		38.5
Total Split (s)	65.0	65.0	65.0	11.0	76.0		34.0	34.0		34.0		34.0
Total Split (%)	59.1%	59.1%	59.1%	10.0%	69.1%		30.9%	30.9%		30.9%		30.9%
Maximum Green (s)	59.0	59.0	59.0	8.0	70.0		27.5	27.5		27.5		27.5
Yellow Time (s)	3.5	3.5	3.5	3.0	3.5		3.0	3.0		3.0		3.0
All-Red Time (s)	2.5	2.5	2.5	0.0	2.5		3.5	3.5		3.5		3.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0				0.0
Total Lost Time (s)	6.0	6.0	6.0	3.0	6.0		6.5	6.5				6.5
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?	Yes	Yes	Yes	Yes								
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0		3.0
Recall Mode	C-Max	C-Max	C-Max	None	C-Max		None	None		None		None
Walk Time (s)	10.0	10.0	10.0		10.0		10.0	10.0		10.0		10.0
Flash Dont Walk (s)	13.0	13.0	13.0		13.0		22.0	22.0		22.0		22.0
Pedestrian Calls (#/hr)	0	0	0		0		0	0		0		0
Act Effct Green (s)	83.7	83.7	83.7	93.5	91.7		10.3	10.3				10.3
Actuated g/C Ratio	0.76	0.76	0.76	0.85	0.83		0.09	0.09				0.09
v/c Ratio	0.07	0.20	0.03	0.10	0.31		0.21	0.37				0.32
Control Delay	5.9	5.3	0.2	1.6	2.4		50.1	21.5				40.6
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0				0.0
Total Delay	5.9	5.3	0.2	1.6	2.4		50.1	21.5				40.6
LOS	A	A	A	A	A		D	C				D
Approach Delay		5.1			2.3			28.6				40.6
Approach LOS		A			A			C				D

Intersection Summary

Area Type:	Other
Cycle Length:	110
Actuated Cycle Length:	110
Offset:	0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle:	80
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.37
Intersection Signal Delay:	6.1
Intersection LOS:	A
Intersection Capacity Utilization:	59.3%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 6: McFarren Blvd/Gaffney Dr & Thomas St



Queues
6: McFarren Blvd/Gaffney Dr & Thomas St

Existing PM
03/20/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	34	513	30	79	875	26	79	51
v/c Ratio	0.07	0.20	0.03	0.10	0.31	0.21	0.37	0.32
Control Delay	5.9	5.3	0.2	1.6	2.4	50.1	21.5	40.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.9	5.3	0.2	1.6	2.4	50.1	21.5	40.6
Queue Length 50th (m)	1.9	16.4	0.0	1.8	17.8	4.9	3.0	6.5
Queue Length 95th (m)	5.1	23.4	0.6	3.2	19.1	12.7	16.0	17.2
Internal Link Dist (m)		141.0			84.5		122.4	114.4
Turn Bay Length (m)	30.0		35.0	30.0		25.0		
Base Capacity (vph)	460	2547	1177	773	2829	338	459	393
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	0.07	0.20	0.03	0.10	0.31	0.08	0.17	0.13

Intersection Summary

Lanes, Volumes, Timings
7: Joymar Dr & Tannery St

Existing PM
03/20/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	1	1	3	96	1	79	1	83	57	43	50	1
Future Volume (vph)	1	1	3	96	1	79	1	83	57	43	50	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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												
Frt		0.919			0.939			0.945			0.999	
Flt Protected		0.990			0.973						0.977	
Satd. Flow (prot)	0	1714	0	0	1721	0	0	1790	0	0	1865	0
Flt Permitted		0.990			0.973						0.977	
Satd. Flow (perm)	0	1714	0	0	1721	0	0	1790	0	0	1865	0
Link Speed (k/h)		40			40			40			40	
Link Distance (m)		53.6			165.4			311.9			123.6	
Travel Time (s)		4.8			14.9			28.1			11.1	
Confl. Peds. (#/hr)	13		4	4		13	19		3	3		19
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	1%	2%	0%	1%	2%
Adj. Flow (vph)	1	1	3	104	1	86	1	90	62	47	54	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	5	0	0	191	0	0	153	0	0	102	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)		0.0			0.0			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			4.9			4.9			4.9	
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
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	45.0%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
7: Joymar Dr & Tannery St

Existing PM
03/20/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	1	1	3	96	1	79	1	83	57	43	50	1
Future Volume (vph)	1	1	3	96	1	79	1	83	57	43	50	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	1	3	104	1	86	1	90	62	47	54	1
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	5	191	153	102								
Volume Left (vph)	1	104	1	47								
Volume Right (vph)	3	86	62	1								
Hadj (s)	-0.29	-0.13	-0.22	0.10								
Departure Headway (s)	4.4	4.4	4.3	4.6								
Degree Utilization, x	0.01	0.23	0.18	0.13								
Capacity (veh/h)	742	777	802	733								
Control Delay (s)	7.5	8.7	8.2	8.3								
Approach Delay (s)	7.5	8.7	8.2	8.3								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay			8.4									
Level of Service			A									
Intersection Capacity Utilization			45.0%	ICU Level of Service	A							
Analysis Period (min)			15									

Lanes, Volumes, Timings
8: Tannery St & Rutledge Road

Existing PM
03/20/2024



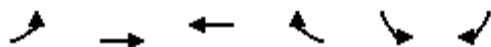
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	↷
Traffic Volume (vph)	3	98	173	4	3	5
Future Volume (vph)	3	98	173	4	3	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.997		0.916	
Flt Protected		0.999			0.982	
Satd. Flow (prot)	0	1882	1878	0	1694	0
Flt Permitted		0.999			0.982	
Satd. Flow (perm)	0	1882	1878	0	1694	0
Link Speed (k/h)		40	40		40	
Link Distance (m)		165.4	107.5		111.8	
Travel Time (s)		14.9	9.7		10.1	
Confl. Peds. (#/hr)	16			16	2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	3	107	188	4	3	5
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	110	192	0	8	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.9	4.9		4.9	
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		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	21.0%
Analysis Period (min)	15
	ICU Level of Service A

HCM Unsignalized Intersection Capacity Analysis

8: Tannery St & Rutledge Road

Existing PM
03/20/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	
Traffic Volume (veh/h)	3	98	173	4	3	5
Future Volume (Veh/h)	3	98	173	4	3	5
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	107	188	4	3	5
Pedestrians			2		16	
Lane Width (m)			3.7		3.7	
Walking Speed (m/s)			1.1		1.1	
Percent Blockage			0		2	
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	208				321	206
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	208				321	206
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	99
cM capacity (veh/h)	1342				659	821
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	110	192	8			
Volume Left	3	0	3			
Volume Right	0	4	5			
cSH	1342	1700	752			
Volume to Capacity	0.00	0.11	0.01			
Queue Length 95th (m)	0.0	0.0	0.2			
Control Delay (s)	0.2	0.0	9.8			
Lane LOS	A		A			
Approach Delay (s)	0.2	0.0	9.8			
Approach LOS			A			
Intersection Summary						
Average Delay			0.3			
Intersection Capacity Utilization			21.0%		ICU Level of Service	A
Analysis Period (min)			15			

Lanes, Volumes, Timings
 9: Broadway St/Crumble St & Tannery St

Existing PM
 03/20/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	32	60	18	28	77	15	25	40	45	10	38	40
Future Volume (vph)	32	60	18	28	77	15	25	40	45	10	38	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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												
Frt		0.977			0.983			0.944			0.939	
Flt Protected		0.986			0.989			0.989			0.994	
Satd. Flow (prot)	0	1814	0	0	1831	0	0	1758	0	0	1758	0
Flt Permitted		0.986			0.989			0.989			0.994	
Satd. Flow (perm)	0	1814	0	0	1831	0	0	1758	0	0	1758	0
Link Speed (k/h)		40			40			40			48	
Link Distance (m)		107.5			52.2			284.3			52.6	
Travel Time (s)		9.7			4.7			25.6			3.9	
Confl. Peds. (#/hr)	10		15	15		10	5		11	11		5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	35	65	20	30	84	16	27	43	49	11	41	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	120	0	0	130	0	0	119	0	0	95	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)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
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
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	29.4%
Analysis Period (min)	15
	ICU Level of Service A

HCM Unsignalized Intersection Capacity Analysis
 9: Broadway St/Crumble St & Tannery St

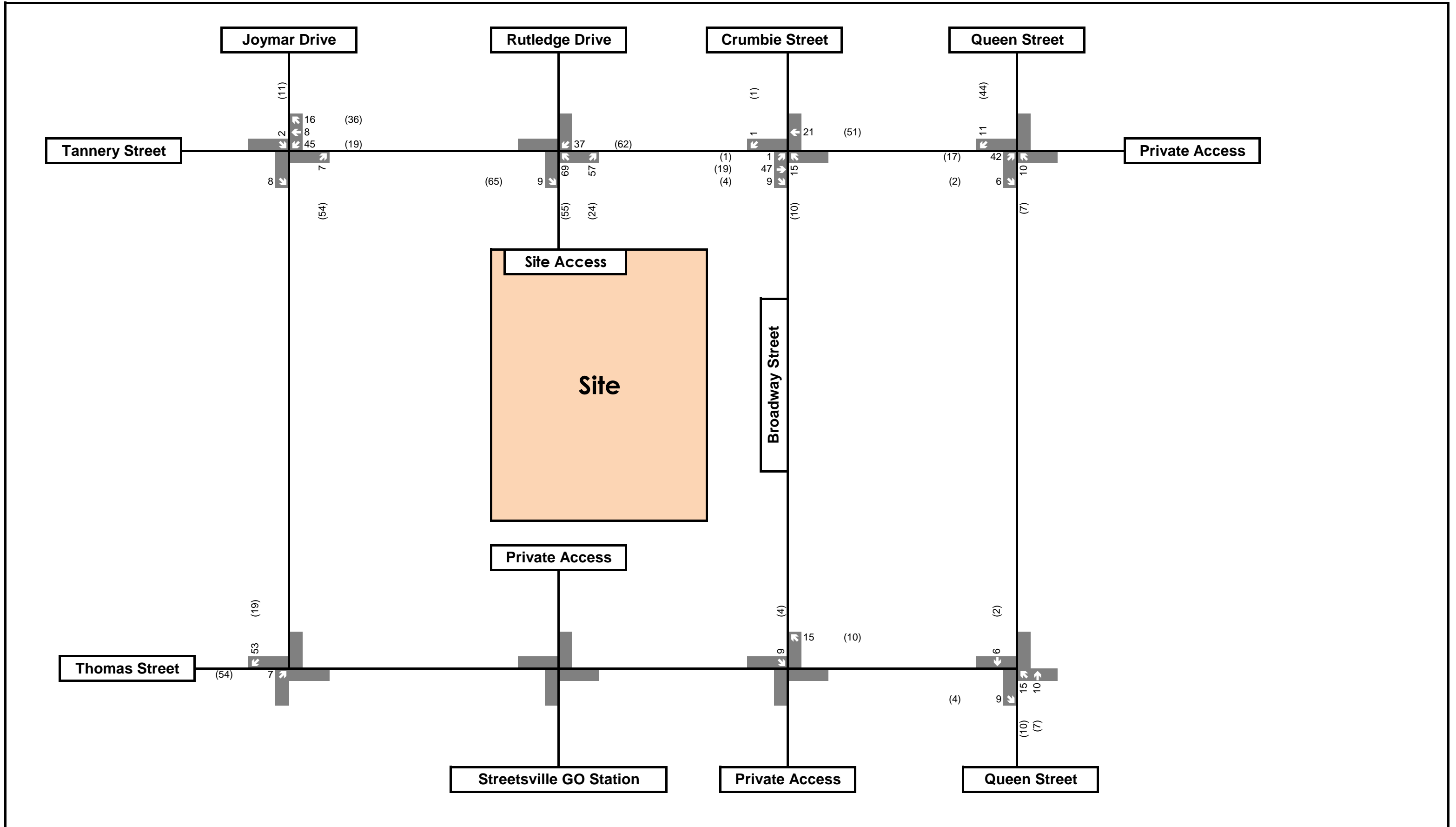
Existing PM
 03/20/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	32	60	18	28	77	15	25	40	45	10	38	40
Future Volume (Veh/h)	32	60	18	28	77	15	25	40	45	10	38	40
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	35	65	20	30	84	16	27	43	49	11	41	43
Pedestrians		5			11			15			10	
Lane Width (m)		3.7			3.7			3.7			3.7	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		0			1			1			1	
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	110			100			380	330	101	388	332	107
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	110			100			380	330	101	388	332	107
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			98			94	92	95	98	93	95
cM capacity (veh/h)	1466			1471			483	550	930	472	548	933
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	120	130	119	95								
Volume Left	35	30	27	11								
Volume Right	20	16	49	43								
cSH	1466	1471	637	659								
Volume to Capacity	0.02	0.02	0.19	0.14								
Queue Length 95th (m)	0.5	0.4	4.8	3.5								
Control Delay (s)	2.3	1.9	11.9	11.4								
Lane LOS	A	A	B	B								
Approach Delay (s)	2.3	1.9	11.9	11.4								
Approach LOS			B	B								
Intersection Summary												
Average Delay			6.5									
Intersection Capacity Utilization			29.4%		ICU Level of Service				A			
Analysis Period (min)			15									

Appendix I

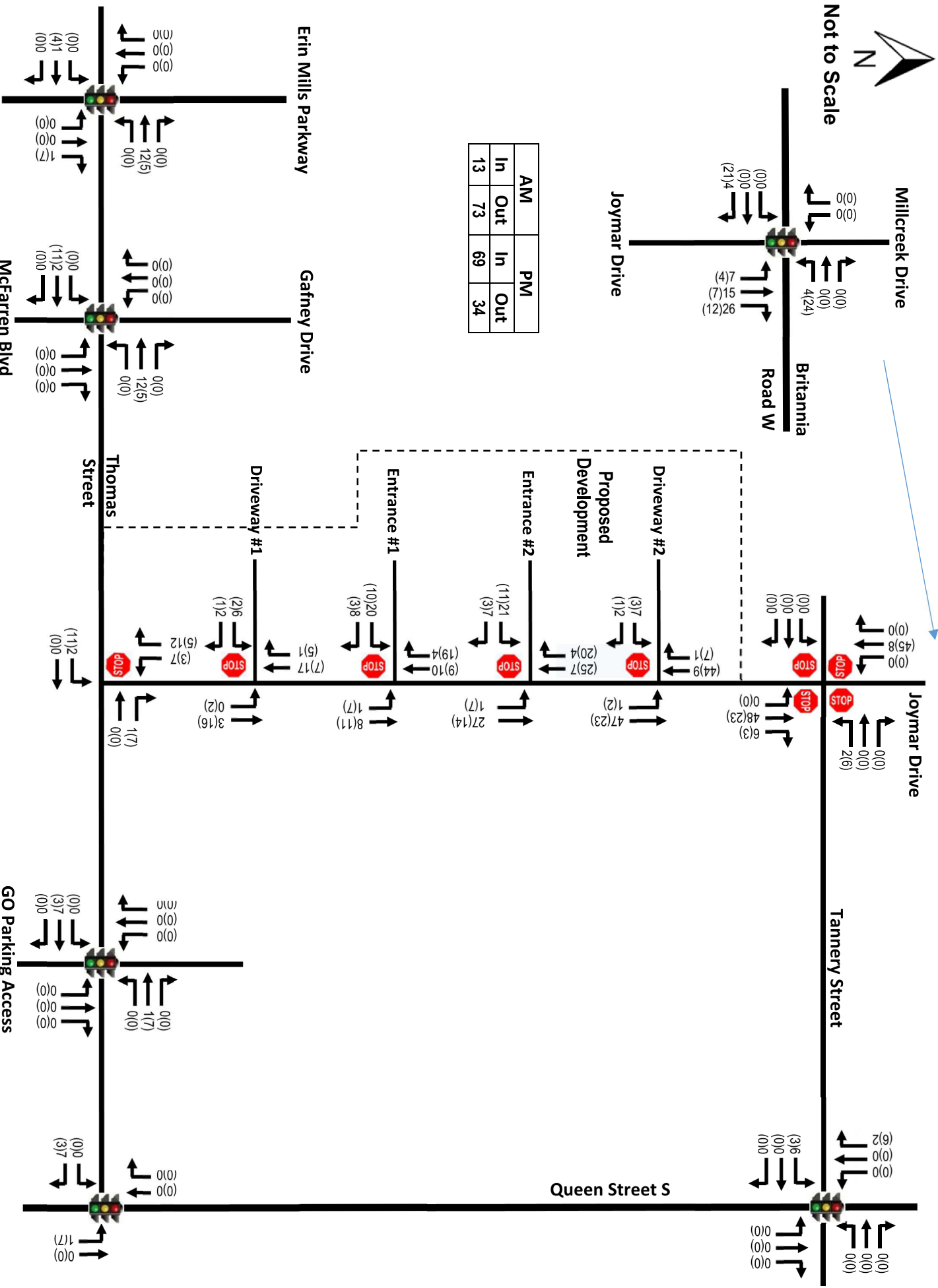
Background Development Traffic Volumes

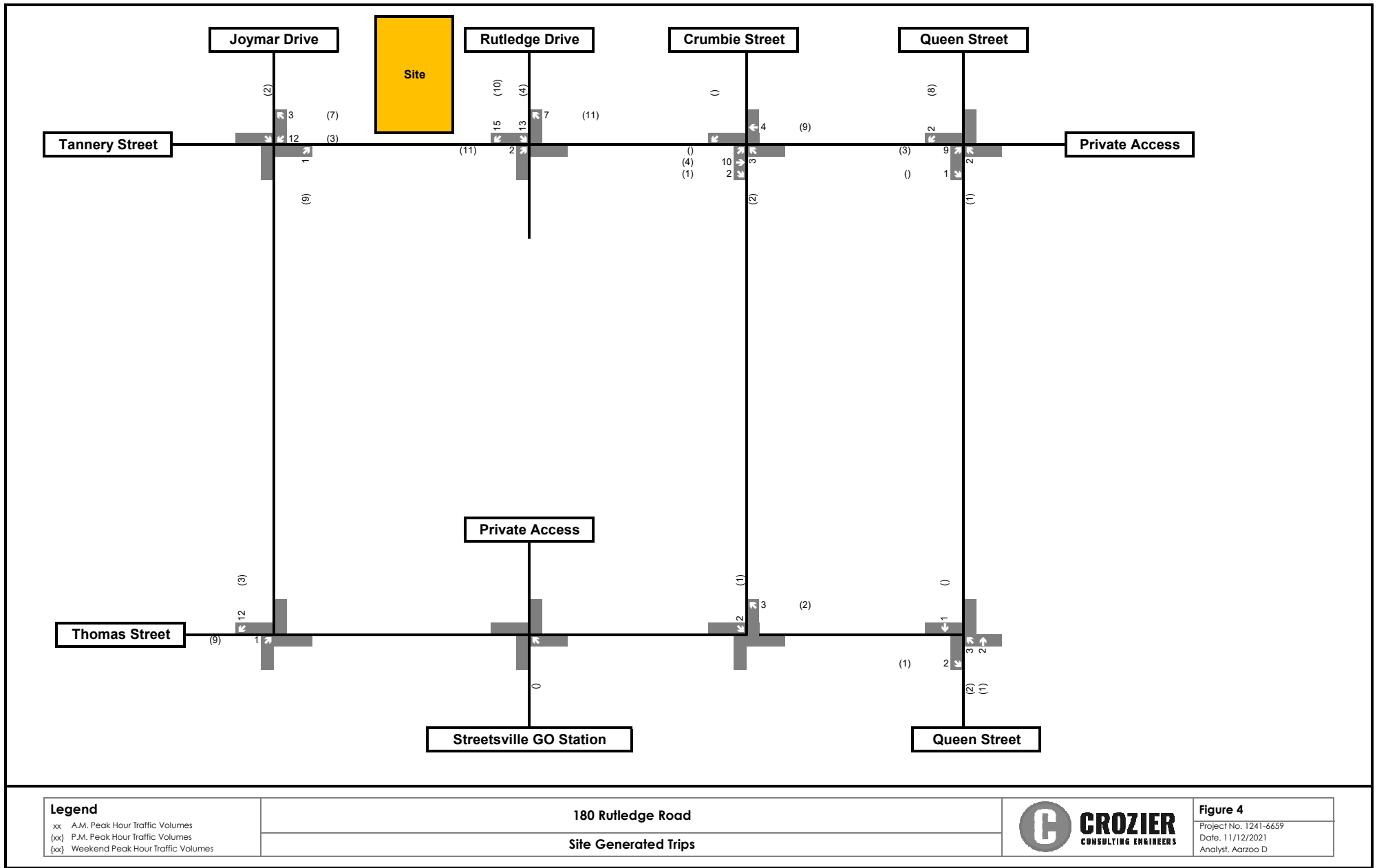




Not to Scale

	AM	PM
In	13	69
Out	73	34





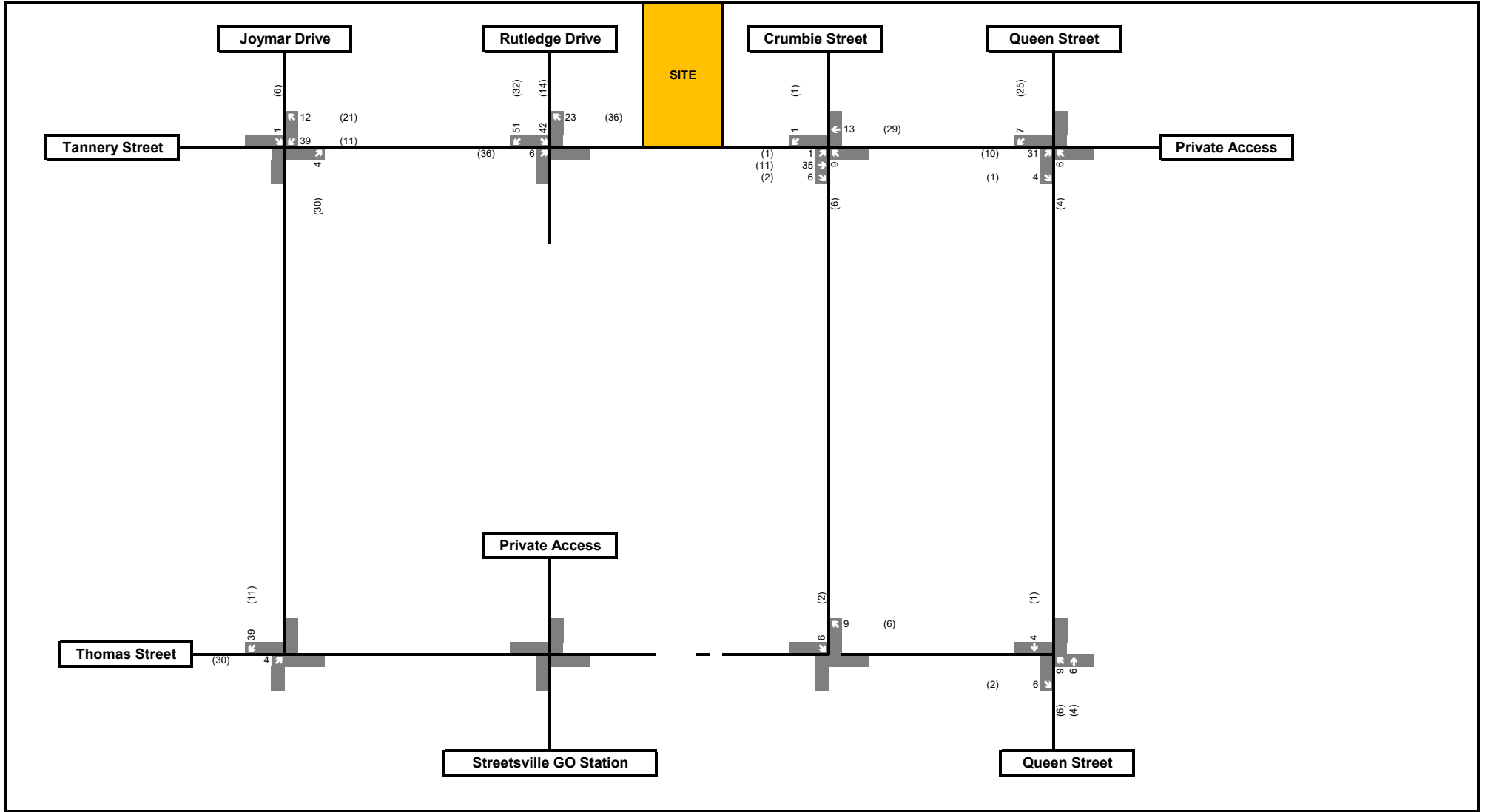
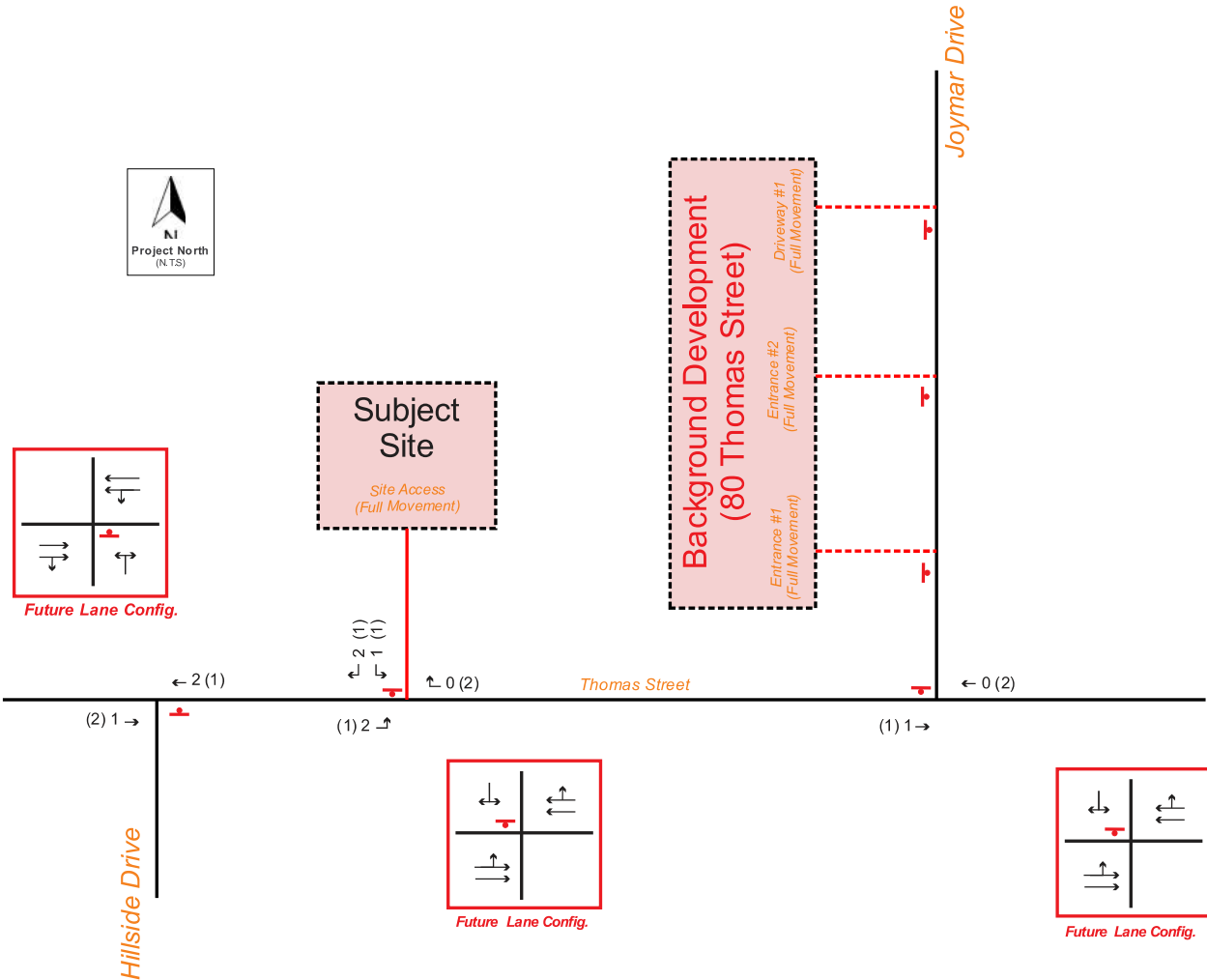


Figure 4
Project No. 1241-6659
Date: 11/12/2021
Analyst: Aarzo D

Figure 4-1 – Site Generated Traffic Volumes



5.0 FUTURE TOTAL TRAFFIC CONDITIONS

The forecasted 2024 future total traffic volumes (future background traffic volumes plus site generated traffic volumes) are illustrated in **Figure 5-1**, and were analyzed using Synchro 10 software. The detailed calculations are provided in **Appendix F** and summarized in **Table 5.1**.

Appendix J

2028 Future Background Detailed Capacity Analysis

Lanes, Volumes, Timings
1: Queen st & Thomas St

2028 FT AM
03/20/2024



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	264	162	133	372	391	197
Future Volume (vph)	264	162	133	372	391	197
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0	20.0	35.0			0.0
Storage Lanes	0	0	1			0
Taper Length (m)	0.0		55.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.97	1.00		0.99	
Frt		0.850			0.955	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1722	1512	1772	1746	1630	0
Flt Permitted	0.950		0.343			
Satd. Flow (perm)	1700	1467	638	1746	1630	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		176			41	
Link Speed (k/h)	50			40	40	
Link Distance (m)	168.1			211.1	113.7	
Travel Time (s)	12.1			19.0	10.2	
Confl. Peds. (#/hr)	5	4	9			9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	6%	8%	3%	10%	14%	7%
Adj. Flow (vph)	287	176	145	404	425	214
Shared Lane Traffic (%)						
Lane Group Flow (vph)	287	176	145	404	639	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)	4.9			4.9	4.9	
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
Number of Detectors	1	1	0	0	0	
Detector Template	Left			Thru	Thru	
Leading Detector (m)	8.5	8.5	0.0	0.0	0.0	
Trailing Detector (m)	-0.2	-0.5	0.0	0.0	0.0	
Detector 1 Position(m)	-0.2	-0.5	-0.5	0.0	0.0	
Detector 1 Size(m)	8.7	9.0	9.0	1.8	1.8	
Detector 1 Type	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	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Turn Type	Perm	Perm	Perm	NA	NA	
Protected Phases				6	2	
Permitted Phases	8	8	6	6	2	
Detector Phase	8	8	6	6	2	
Switch Phase						

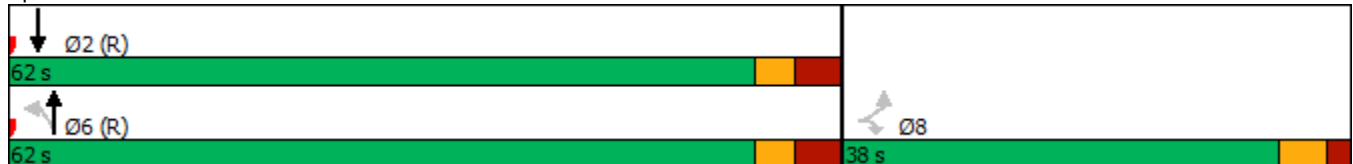


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	26.5	26.5	28.5	28.5	28.5	
Total Split (s)	38.0	38.0	62.0	62.0	62.0	
Total Split (%)	38.0%	38.0%	62.0%	62.0%	62.0%	
Maximum Green (s)	32.5	32.5	55.5	55.5	55.5	
Yellow Time (s)	3.5	3.5	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	3.5	3.5	3.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.5	6.5	6.5	6.5	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	C-Max	C-Max	C-Max	
Walk Time (s)	10.0	10.0	10.0	10.0	10.0	
Flash Dont Walk (s)	10.0	10.0	12.0	12.0	12.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	
Act Effct Green (s)	22.3	22.3	65.7	65.7	65.7	
Actuated g/C Ratio	0.22	0.22	0.66	0.66	0.66	
v/c Ratio	0.76	0.38	0.35	0.35	0.59	
Control Delay	43.3	4.7	12.1	9.7	12.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	43.3	4.7	12.1	9.7	12.9	
LOS	D	A	B	A	B	
Approach Delay	28.6			10.4	12.9	
Approach LOS	C			B	B	

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 70 (70%), Referenced to phase 2:SBT and 6:NBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.76
 Intersection Signal Delay: 16.5
 Intersection LOS: B
 Intersection Capacity Utilization 71.5%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 1: Queen st & Thomas St



Queues
1: Queen st & Thomas St

2028 FT AM
03/20/2024



Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	287	176	145	404	639
v/c Ratio	0.76	0.38	0.35	0.35	0.59
Control Delay	43.3	4.7	12.1	9.7	12.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	43.3	4.7	12.1	9.7	12.9
Queue Length 50th (m)	49.4	5.3	10.4	28.9	53.4
Queue Length 95th (m)	69.2	4.3	26.8	55.5	104.1
Internal Link Dist (m)	144.1			187.1	89.7
Turn Bay Length (m)	20.0	20.0	35.0		
Base Capacity (vph)	552	595	419	1146	1084
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.52	0.30	0.35	0.35	0.59

Intersection Summary

Lanes, Volumes, Timings
2: Thomas St & Broadway St

2028 FT AM
03/20/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕			↕			↕	
Traffic Volume (vph)	104	413	4	2	319	49	2	0	2	29	1	77
Future Volume (vph)	104	413	4	2	319	49	2	0	2	29	1	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.999			0.980			0.932			0.903	
Flt Protected		0.990						0.976			0.987	
Satd. Flow (prot)	0	3363	0	0	3263	0	0	1713	0	0	1679	0
Flt Permitted		0.990						0.976			0.987	
Satd. Flow (perm)	0	3363	0	0	3263	0	0	1713	0	0	1679	0
Link Speed (k/h)		50			50			30			40	
Link Distance (m)		125.4			168.1			64.9			284.3	
Travel Time (s)		9.0			12.1			7.8			25.6	
Confl. Peds. (#/hr)	11		15	15		11	1		1	1		1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	9%	2%	2%	11%	1%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	113	449	4	2	347	53	2	0	2	32	1	84
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	566	0	0	402	0	0	4	0	0	117	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)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			1.6			4.9	
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
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	43.2%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
2: Thomas St & Broadway St

2028 FT AM
03/20/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔			↔↔			↔			↔	
Traffic Volume (veh/h)	104	413	4	2	319	49	2	0	2	29	1	77
Future Volume (Veh/h)	104	413	4	2	319	49	2	0	2	29	1	77
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	113	449	4	2	347	53	2	0	2	32	1	84
Pedestrians		1			1			15			11	
Lane Width (m)		3.7			3.7			3.7			3.7	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		0			0			1			1	
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)		125			168							
pX, platoon unblocked												
vC, conflicting volume	411			468			955	1107	242	842	1082	212
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	411			468			955	1107	242	842	1082	212
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	90			100			99	100	100	86	99	89
cM capacity (veh/h)	1140			1075			169	183	747	230	189	784
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total	338	228	176	226	4	117						
Volume Left	113	0	2	0	2	32						
Volume Right	0	4	0	53	2	84						
cSH	1140	1700	1075	1700	276	465						
Volume to Capacity	0.10	0.13	0.00	0.13	0.01	0.25						
Queue Length 95th (m)	2.3	0.0	0.0	0.0	0.3	6.9						
Control Delay (s)	3.5	0.0	0.1	0.0	18.3	15.3						
Lane LOS	A		A		C	C						
Approach Delay (s)	2.1		0.0		18.3	15.3						
Approach LOS					C	C						
Intersection Summary												
Average Delay			2.8									
Intersection Capacity Utilization			43.2%		ICU Level of Service				A			
Analysis Period (min)			15									

Lanes, Volumes, Timings
 3: Streetsville Go Parking Lot/Private Access & Thomas St

2028 FT AM
 03/20/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗	↖	↗	↖		↕	↗		↕	
Traffic Volume (vph)	0	340	473	85	219	0	188	1	64	0	0	2
Future Volume (vph)	0	340	473	85	219	0	188	1	64	0	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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			0.96	0.99				1.00	0.97		0.98	
Frt			0.850						0.850		0.865	
Flt Protected				0.950				0.953				
Satd. Flow (prot)	0	1762	1555	1789	1746	0	0	1795	1585	0	1604	0
Flt Permitted				0.505				0.727				
Satd. Flow (perm)	0	1762	1491	942	1746	0	0	1364	1537	0	1604	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)			514								661	
Link Speed (k/h)		50			50			40				30
Link Distance (m)		129.3			125.4			171.6				40.7
Travel Time (s)		9.3			9.0			15.4				4.9
Confl. Peds. (#/hr)	20		7	7		20	2		10	10		2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	9%	5%	2%	10%	2%	2%	2%	3%	2%	2%	2%
Adj. Flow (vph)	0	370	514	92	238	0	204	1	70	0	0	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	370	514	92	238	0	0	205	70	0	2	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			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
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	0	0	1	0		1	1	1	1	1	
Detector Template	Left	Thru	Right		Thru		Left			Left		
Leading Detector (m)	6.1	0.0	0.0	21.8	0.0		6.1	6.0	6.0	6.1	8.8	
Trailing Detector (m)	0.0	0.0	0.0	12.8	0.0		0.0	-3.0	-3.0	0.0	-0.2	
Detector 1 Position(m)	0.0	0.0	0.0	12.8	0.0		0.0	-3.0	-3.0	0.0	-0.2	
Detector 1 Size(m)	6.1	1.8	6.1	9.0	1.8		6.1	9.0	9.0	6.1	9.0	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
Turn Type		NA	Perm	pm+pt	NA		Perm	NA	pm+ov		NA	
Protected Phases		2		1	2			4	1		4	
Permitted Phases	2		2	2			4		4	4		
Detector Phase	2	2	2	1	2		4	4	1	4	4	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	5.0	8.0		8.0	8.0	5.0	8.0	8.0	
Minimum Split (s)	25.0	25.0	25.0	9.5	25.0		25.0	25.0	9.5	25.0	25.0	
Total Split (s)	52.0	52.0	52.0	20.0	52.0		28.0	28.0	20.0	28.0	28.0	

Lanes, Volumes, Timings
 3: Streetsville Go Parking Lot/Private Access & Thomas St

2028 FT AM
 03/20/2024



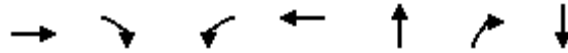
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)	52.0%	52.0%	52.0%	20.0%	52.0%		28.0%	28.0%	20.0%	28.0%	28.0%	
Maximum Green (s)	46.0	46.0	46.0	17.0	46.0		22.0	22.0	17.0	22.0	22.0	
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0		4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	0.0	2.0		2.0	2.0	0.0	2.0	2.0	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)		6.0	6.0	3.0	6.0			6.0	3.0		6.0	
Lead/Lag	Lag	Lag	Lag	Lead	Lag				Lead			
Lead-Lag Optimize?	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	3.0	3.0	
Recall Mode	C-Max	C-Max	C-Max	None	C-Max		None	None	None	None	None	
Walk Time (s)	8.0	8.0	8.0		8.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)	8.0	8.0	8.0		8.0		8.0	8.0		8.0	8.0	
Pedestrian Calls (#/hr)	0	0	0		0		0	0		0	0	
Act Effct Green (s)		61.5	61.5	69.8	61.5			18.8	28.1		18.8	
Actuated g/C Ratio		0.62	0.62	0.70	0.62			0.19	0.28		0.19	
v/c Ratio		0.34	0.46	0.13	0.22			0.80	0.16		0.00	
Control Delay		7.0	3.4	2.5	7.2			61.1	24.2		0.0	
Queue Delay		0.0	0.0	0.0	0.0			0.0	0.0		0.0	
Total Delay		7.0	3.4	2.5	7.2			61.1	24.2		0.0	
LOS		A	A	A	A			E	C		A	
Approach Delay		4.9			5.9			51.7				
Approach LOS		A			A			D				

Intersection Summary

Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	100
Offset:	11 (11%), Referenced to phase 2:EBWB, Start of Green
Natural Cycle:	60
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.80
Intersection Signal Delay:	13.7
Intersection LOS:	B
Intersection Capacity Utilization:	65.5%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 3: Streetsville Go Parking Lot/Private Access & Thomas St





Lane Group	EBT	EBR	WBL	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	370	514	92	238	205	70	2
v/c Ratio	0.34	0.46	0.13	0.22	0.80	0.16	0.00
Control Delay	7.0	3.4	2.5	7.2	61.1	24.2	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.0	3.4	2.5	7.2	61.1	24.2	0.0
Queue Length 50th (m)	25.1	7.8	2.8	22.1	34.5	8.8	0.0
Queue Length 95th (m)	53.3	53.4	m2.5	25.2	#60.1	17.1	0.0
Internal Link Dist (m)	105.3			101.4	147.6		16.7
Turn Bay Length (m)							
Base Capacity (vph)	1083	1114	823	1073	300	604	868
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.34	0.46	0.11	0.22	0.68	0.12	0.00

Intersection Summary

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lanes, Volumes, Timings
4: Thomas St & Joymar Dr

2028 FT AM
03/20/2024



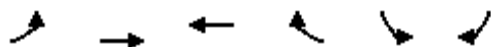
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕↕	↕↕		↘	↘
Traffic Volume (vph)	180	783	348	64	37	293
Future Volume (vph)	180	783	348	64	37	293
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0			0.0	10.0	0.0
Storage Lanes	0			0	1	1
Taper Length (m)	7.6				25.0	
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt			0.977			0.850
Flt Protected		0.991			0.950	
Satd. Flow (prot)	0	3279	3229	0	1807	1512
Flt Permitted		0.991			0.950	
Satd. Flow (perm)	0	3279	3229	0	1807	1512
Link Speed (k/h)		50	50		40	
Link Distance (m)		164.8	129.3		166.1	
Travel Time (s)		11.9	9.3		14.9	
Confl. Peds. (#/hr)	10			10	2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	12%	12%	2%	1%	8%
Adj. Flow (vph)	196	851	378	70	40	318
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1047	448	0	40	318
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.9	4.9		4.9	
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		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	52.5%
Analysis Period (min)	15
	ICU Level of Service A

HCM Unsignalized Intersection Capacity Analysis
4: Thomas St & Joymar Dr

2028 FT AM
03/20/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔↕	↕↔		↕	↕
Traffic Volume (veh/h)	180	783	348	64	37	293
Future Volume (Veh/h)	180	783	348	64	37	293
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	196	851	378	70	40	318
Pedestrians			2		10	
Lane Width (m)			3.7		3.7	
Walking Speed (m/s)			1.1		1.1	
Percent Blockage			0		1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (m)		273	129			
pX, platoon unblocked					0.91	
vC, conflicting volume	458				1242	234
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	458				1072	234
tC, single (s)	4.2				6.8	7.1
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.4
p0 queue free %	82				75	57
cM capacity (veh/h)	1082				160	743
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	SB 2
Volume Total	480	567	252	196	40	318
Volume Left	196	0	0	0	40	0
Volume Right	0	0	0	70	0	318
cSH	1082	1700	1700	1700	160	743
Volume to Capacity	0.18	0.33	0.15	0.12	0.25	0.43
Queue Length 95th (m)	4.6	0.0	0.0	0.0	6.6	15.1
Control Delay (s)	4.9	0.0	0.0	0.0	34.8	13.4
Lane LOS	A				D	B
Approach Delay (s)	2.2		0.0		15.8	
Approach LOS					C	
Intersection Summary						
Average Delay			4.3			
Intersection Capacity Utilization			52.5%		ICU Level of Service	A
Analysis Period (min)			15			



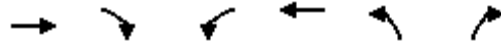
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑↑	
Traffic Volume (vph)	923	20	30	619	42	43
Future Volume (vph)	923	20	30	619	42	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt	0.997				0.932	
Flt Protected				0.998	0.976	
Satd. Flow (prot)	3199	0	0	3158	1713	0
Flt Permitted				0.998	0.976	
Satd. Flow (perm)	3199	0	0	3158	1713	0
Link Speed (k/h)	50			50	40	
Link Distance (m)	108.5			164.8	111.9	
Travel Time (s)	7.8			11.9	10.1	
Confl. Peds. (#/hr)		3	3			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	14%	3%	2%	16%	3%	1%
Adj. Flow (vph)	1003	22	33	673	46	47
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1025	0	0	706	93	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)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	50.9%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
5: HillSide Drive & Thomas St

2028 FT AM
03/20/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑↑	
Traffic Volume (veh/h)	923	20	30	619	42	43
Future Volume (Veh/h)	923	20	30	619	42	43
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1003	22	33	673	46	47
Pedestrians					3	
Lane Width (m)					3.7	
Walking Speed (m/s)					1.1	
Percent Blockage					0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)	109			294		
pX, platoon unblocked			0.89		0.89	0.89
vC, conflicting volume			1028		1420	516
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			782		1222	206
tC, single (s)			4.1		6.9	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			96		68	93
cM capacity (veh/h)			737		144	713
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	
Volume Total	669	356	257	449	93	
Volume Left	0	0	33	0	46	
Volume Right	0	22	0	0	47	
cSH	1700	1700	737	1700	242	
Volume to Capacity	0.39	0.21	0.04	0.26	0.38	
Queue Length 95th (m)	0.0	0.0	1.0	0.0	12.0	
Control Delay (s)	0.0	0.0	1.8	0.0	28.9	
Lane LOS	A			D		
Approach Delay (s)	0.0		0.6	28.9		
Approach LOS					D	
Intersection Summary						
Average Delay			1.7			
Intersection Capacity Utilization			50.9%	ICU Level of Service		A
Analysis Period (min)			15			

Lanes, Volumes, Timings
6: McFarren Blvd/Gaffney Dr & Thomas St

2028 FT AM
03/20/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	837	21	64	581	16	22	5	75	23	11	29
Future Volume (vph)	9	837	21	64	581	16	22	5	75	23	11	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		35.0	30.0		0.0	25.0		0.0	0.0		0.0
Storage Lanes	1		1	1		0	1		0	0		0
Taper Length (m)	30.0			45.0			35.0			2.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.95	0.99	1.00		0.98	0.97			0.98	
Frt			0.850		0.996			0.859			0.937	
Flt Protected	0.950			0.950			0.950				0.982	
Satd. Flow (prot)	1807	3202	1512	1789	3014	0	1807	1562	0	0	1706	0
Flt Permitted	0.405			0.281			0.848				0.844	
Satd. Flow (perm)	763	3202	1433	526	3014	0	1580	1562	0	0	1454	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			71		5			82			32	
Link Speed (k/h)		50			50			40			40	
Link Distance (m)		165.0			108.5			146.4			138.4	
Travel Time (s)		11.9			7.8			13.2			12.5	
Confl. Peds. (#/hr)	11		15	15		11	24		27	27		24
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	14%	8%	2%	21%	2%	1%	2%	2%	2%	2%	2%
Adj. Flow (vph)	10	910	23	70	632	17	24	5	82	25	12	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	10	910	23	70	649	0	24	87	0	0	69	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	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	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	
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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
6: McFarren Blvd/Gaffney Dr & Thomas St

2028 FT AM
03/20/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			4				8
Permitted Phases	2		2	6			4			8		
Detector Phase	2	2	2	1	6		4	4		8		8
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	7.0	10.0		10.0	10.0		10.0		10.0
Minimum Split (s)	29.0	29.0	29.0	10.0	29.0		38.5	38.5		33.0		33.0
Total Split (s)	57.0	57.0	57.0	10.0	67.0		33.0	33.0		33.0		33.0
Total Split (%)	57.0%	57.0%	57.0%	10.0%	67.0%		33.0%	33.0%		33.0%		33.0%
Maximum Green (s)	51.0	51.0	51.0	7.0	61.0		26.5	26.5		26.5		26.5
Yellow Time (s)	3.5	3.5	3.5	3.0	3.5		3.0	3.0		3.0		3.0
All-Red Time (s)	2.5	2.5	2.5	0.0	2.5		3.5	3.5		3.5		3.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0				0.0
Total Lost Time (s)	6.0	6.0	6.0	3.0	6.0		6.5	6.5				6.5
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?	Yes	Yes	Yes	Yes								
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0		3.0
Recall Mode	C-Max	C-Max	C-Max	None	Max		None	None		None		None
Walk Time (s)	10.0	10.0	10.0		10.0		10.0	10.0		10.0		10.0
Flash Dont Walk (s)	13.0	13.0	13.0		13.0		22.0	22.0		22.0		22.0
Pedestrian Calls (#/hr)	0	0	0		0		0	0		0		0
Act Effct Green (s)	73.5	73.5	73.5	83.4	81.6		10.4	10.4				10.4
Actuated g/C Ratio	0.74	0.74	0.74	0.83	0.82		0.10	0.10				0.10
v/c Ratio	0.02	0.39	0.02	0.13	0.26		0.15	0.37				0.38
Control Delay	5.9	7.3	0.0	3.5	4.5		42.6	15.3				31.7
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0				0.0
Total Delay	5.9	7.3	0.0	3.5	4.5		42.6	15.3				31.7
LOS	A	A	A	A	A		D	B				C
Approach Delay		7.1			4.4			21.2				31.7
Approach LOS		A			A			C				C

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 79 (79%), Referenced to phase 2:EBTL, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.39
 Intersection Signal Delay: 7.8
 Intersection Capacity Utilization 62.7%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service B

Splits and Phases: 6: McFarren Blvd/Gaffney Dr & Thomas St



Queues
6: McFarren Blvd/Gaffney Dr & Thomas St

2028 FT AM
03/20/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	10	910	23	70	649	24	87	69
v/c Ratio	0.02	0.39	0.02	0.13	0.26	0.15	0.37	0.38
Control Delay	5.9	7.3	0.0	3.5	4.5	42.6	15.3	31.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.9	7.3	0.0	3.5	4.5	42.6	15.3	31.7
Queue Length 50th (m)	0.5	34.5	0.0	2.0	17.1	4.0	0.8	6.2
Queue Length 95th (m)	2.2	48.4	0.0	m6.1	29.0	10.8	13.3	17.9
Internal Link Dist (m)		141.0			84.5		122.4	114.4
Turn Bay Length (m)	30.0		35.0	30.0		25.0		
Base Capacity (vph)	561	2354	1072	527	2459	418	474	408
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	0.02	0.39	0.02	0.13	0.26	0.06	0.18	0.17

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lanes, Volumes, Timings
7: Joymar Dr & Tannery St

2028 FT AM
03/20/2024



















Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	12	56	42	182	75	116	65	163	92	111	98	25
Future Volume (vph)	12	56	42	182	75	116	65	163	92	111	98	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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												
Frt		0.948			0.958			0.961			0.986	
Flt Protected		0.995			0.976			0.990			0.977	
Satd. Flow (prot)	0	1812	0	0	1756	0	0	1801	0	0	1756	0
Flt Permitted		0.995			0.976			0.990			0.977	
Satd. Flow (perm)	0	1812	0	0	1756	0	0	1801	0	0	1756	0
Link Speed (k/h)		40			40			40			40	
Link Distance (m)		53.6			75.3			145.8			123.6	
Travel Time (s)		4.8			6.8			13.1			11.1	
Confl. Peds. (#/hr)	115		6	6		115	32		5	5		32
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	3%	1%	2%	1%	2%	1%	6%	6%	0%
Adj. Flow (vph)	13	61	46	198	82	126	71	177	100	121	107	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	120	0	0	406	0	0	348	0	0	255	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)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			4.9			4.9			4.9	
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
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	63.0%
ICU Level of Service	B
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
7: Joymar Dr & Tannery St

2028 FT AM
03/20/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	12	56	42	182	75	116	65	163	92	111	98	25
Future Volume (vph)	12	56	42	182	75	116	65	163	92	111	98	25
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	13	61	46	198	82	126	71	177	100	121	107	27
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	120	406	348	255								
Volume Left (vph)	13	198	71	121								
Volume Right (vph)	46	126	100	27								
Hadj (s)	-0.21	-0.05	-0.11	0.12								
Departure Headway (s)	6.6	6.0	6.0	6.4								
Degree Utilization, x	0.22	0.68	0.58	0.46								
Capacity (veh/h)	451	568	556	502								
Control Delay (s)	11.4	20.7	17.2	14.8								
Approach Delay (s)	11.4	20.7	17.2	14.8								
Approach LOS	B	C	C	B								
Intersection Summary												
Delay				17.3								
Level of Service				C								
Intersection Capacity Utilization				63.0%	ICU Level of Service							B
Analysis Period (min)				15								

Lanes, Volumes, Timings
8: Tannery St & Rutledge Road

2028 FT AM
03/20/2024



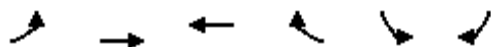
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	10	267	199	36	60	67
Future Volume (vph)	10	267	199	36	60	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.979		0.929	
Flt Protected		0.998			0.977	
Satd. Flow (prot)	0	1763	1787	0	1709	0
Flt Permitted		0.998			0.977	
Satd. Flow (perm)	0	1763	1787	0	1709	0
Link Speed (k/h)		40	40		40	
Link Distance (m)		90.1	107.5		111.8	
Travel Time (s)		8.1	9.7		10.1	
Confl. Peds. (#/hr)	96			96	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	9%	6%	1%	2%	2%
Adj. Flow (vph)	11	290	216	39	65	73
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	301	255	0	138	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.9	4.9		4.9	
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		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	36.5%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
8: Tannery St & Rutledge Road

2028 FT AM
03/20/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	10	267	199	36	60	67
Future Volume (Veh/h)	10	267	199	36	60	67
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	290	216	39	65	73
Pedestrians		1	1		96	
Lane Width (m)		3.7	3.7		3.7	
Walking Speed (m/s)		1.1	1.1		1.1	
Percent Blockage		0	0		9	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	351				644	332
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	351				644	332
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				83	89
cM capacity (veh/h)	1099				393	645
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	301	255	138			
Volume Left	11	0	65			
Volume Right	0	39	73			
cSH	1099	1700	496			
Volume to Capacity	0.01	0.15	0.28			
Queue Length 95th (m)	0.2	0.0	7.9			
Control Delay (s)	0.4	0.0	15.0			
Lane LOS	A		C			
Approach Delay (s)	0.4	0.0	15.0			
Approach LOS			C			
Intersection Summary						
Average Delay			3.2			
Intersection Capacity Utilization			36.5%		ICU Level of Service	A
Analysis Period (min)			15			

Lanes, Volumes, Timings
9: Broadway St/Crumbie St & Tannery St

2028 FT AM
03/20/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	33	281	85	19	200	7	58	37	25	15	41	23
Future Volume (vph)	33	281	85	19	200	7	58	37	25	15	41	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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												
Frt		0.971			0.996			0.972			0.961	
Flt Protected		0.996			0.996			0.976			0.991	
Satd. Flow (prot)	0	1785	0	0	1852	0	0	1795	0	0	1806	0
Flt Permitted		0.996			0.996			0.976			0.991	
Satd. Flow (perm)	0	1785	0	0	1852	0	0	1795	0	0	1806	0
Link Speed (k/h)		40			40			40			48	
Link Distance (m)		107.5			52.2			284.3			52.6	
Travel Time (s)		9.7			4.7			25.6			3.9	
Confl. Peds. (#/hr)	43		8	8		43	4		2	2		4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	5%	2%	2%	3%	2%	1%	2%	2%	1%	1%	2%
Adj. Flow (vph)	36	305	92	21	217	8	63	40	27	16	45	25
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	433	0	0	246	0	0	130	0	0	86	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)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
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
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

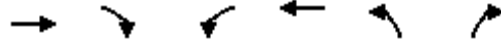
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	48.7%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
 9: Broadway St/Crumbie St & Tannery St

2028 FT AM
 03/20/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	33	281	85	19	200	7	58	37	25	15	41	23
Future Volume (Veh/h)	33	281	85	19	200	7	58	37	25	15	41	23
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	36	305	92	21	217	8	63	40	27	16	45	25
Pedestrians		4			2			8			43	
Lane Width (m)		3.7			3.7			3.7			3.7	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		0			0			1			4	
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	268			405			746	741	361	778	783	268
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	268			405			746	741	361	778	783	268
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			98			76	87	96	93	85	97
cM capacity (veh/h)	1244			1145			260	313	677	243	297	737
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	433	246	130	86								
Volume Left	36	21	63	16								
Volume Right	92	8	27	25								
cSH	1244	1145	317	342								
Volume to Capacity	0.03	0.02	0.41	0.25								
Queue Length 95th (m)	0.6	0.4	13.5	6.8								
Control Delay (s)	0.9	0.9	24.0	19.0								
Lane LOS	A	A	C	C								
Approach Delay (s)	0.9	0.9	24.0	19.0								
Approach LOS			C	C								
Intersection Summary												
Average Delay			6.0									
Intersection Capacity Utilization			48.7%		ICU Level of Service				A			
Analysis Period (min)			15									



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	53	11	26	146	69	35
Future Volume (vph)	53	11	26	146	69	35
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.977			0.955		
Flt Protected				0.993	0.968	
Satd. Flow (prot)	1840	0	0	1870	1741	0
Flt Permitted				0.993	0.968	
Satd. Flow (perm)	1840	0	0	1870	1741	0
Link Speed (k/h)	40			40	30	
Link Distance (m)	75.3			90.1	71.4	
Travel Time (s)	6.8			8.1	8.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	58	12	28	159	75	38
Shared Lane Traffic (%)						
Lane Group Flow (vph)	70	0	0	187	113	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	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)	14		24	24		14
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	28.4%
Analysis Period (min)	15
	ICU Level of Service A

HCM Unsignalized Intersection Capacity Analysis
 10: Site Access 1 & Tannery St

2028 FT AM
 03/20/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	→			←	↔	↔
Traffic Volume (veh/h)	53	11	26	146	69	35
Future Volume (Veh/h)	53	11	26	146	69	35
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	58	12	28	159	75	38
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			70		279	64
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			70		279	64
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		89	96
cM capacity (veh/h)			1531		698	1000
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	70	187	113			
Volume Left	0	28	75			
Volume Right	12	0	38			
cSH	1700	1531	777			
Volume to Capacity	0.04	0.02	0.15			
Queue Length 95th (m)	0.0	0.4	3.6			
Control Delay (s)	0.0	1.2	10.4			
Lane LOS		A	B			
Approach Delay (s)	0.0	1.2	10.4			
Approach LOS			B			
Intersection Summary						
Average Delay			3.8			
Intersection Capacity Utilization			28.4%	ICU Level of Service	A	
Analysis Period (min)			15			



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	56	51	20	33	6	145
Future Volume (vph)	56	51	20	33	6	145
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.936		0.916			
Flt Protected	0.974					0.998
Satd. Flow (prot)	1717	0	1725	0	0	1880
Flt Permitted	0.974					0.998
Satd. Flow (perm)	1717	0	1725	0	0	1880
Link Speed (k/h)	30		40			40
Link Distance (m)	78.9		166.1			145.8
Travel Time (s)	9.5		14.9			13.1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	61	55	22	36	7	158
Shared Lane Traffic (%)						
Lane Group Flow (vph)	116	0	58	0	0	165
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
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		14	24	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	25.4%
Analysis Period (min)	15
	ICU Level of Service A

HCM Unsignalized Intersection Capacity Analysis
 11: Joymar Dr & Site Access 2

2028 FT AM
 03/20/2024



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	56	51	20	33	6	145
Future Volume (Veh/h)	56	51	20	33	6	145
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)	61	55	22	36	7	158
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	212	40			58	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	212	40			58	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	92	95			100	
cM capacity (veh/h)	773	1031			1546	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	116	58	165			
Volume Left	61	0	7			
Volume Right	55	36	0			
cSH	877	1700	1546			
Volume to Capacity	0.13	0.03	0.00			
Queue Length 95th (m)	3.2	0.0	0.1			
Control Delay (s)	9.7	0.0	0.3			
Lane LOS	A		A			
Approach Delay (s)	9.7	0.0	0.3			
Approach LOS	A					
Intersection Summary						
Average Delay			3.5			
Intersection Capacity Utilization			25.4%	ICU Level of Service	A	
Analysis Period (min)			15			

Lanes, Volumes, Timings
1: Queen st & Thomas St

2028 FT PM
03/20/2024



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	208	187	167	466	429	307
Future Volume (vph)	208	187	167	466	429	307
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0	20.0	35.0			0.0
Storage Lanes	0	0	1			0
Taper Length (m)	0.0		55.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.90	0.89			0.97	
Frt		0.850			0.944	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1789	1585	1772	1865	1718	0
Flt Permitted	0.950		0.272			
Satd. Flow (perm)	1602	1404	507	1865	1718	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		203			67	
Link Speed (k/h)	50			40	40	
Link Distance (m)	168.1			211.1	113.7	
Travel Time (s)	12.1			19.0	10.2	
Confl. Peds. (#/hr)	38	35	47			47
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	3%	3%	3%	2%	2%
Adj. Flow (vph)	226	203	182	507	466	334
Shared Lane Traffic (%)						
Lane Group Flow (vph)	226	203	182	507	800	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)	4.9			4.9	4.9	
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
Number of Detectors	1	1	0	0	0	
Detector Template	Left			Thru	Thru	
Leading Detector (m)	8.5	8.5	0.0	0.0	0.0	
Trailing Detector (m)	-0.2	-0.5	0.0	0.0	0.0	
Detector 1 Position(m)	-0.2	-0.5	-0.5	0.0	0.0	
Detector 1 Size(m)	8.7	9.0	9.0	1.8	1.8	
Detector 1 Type	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	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Turn Type	Perm	Perm	Perm	NA	NA	
Protected Phases				6	2	
Permitted Phases	8	8	6	6	2	
Detector Phase	8	8	6	6	2	
Switch Phase						

Lanes, Volumes, Timings
1: Queen st & Thomas St

2028 FT PM
03/20/2024



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	26.5	26.5	28.5	28.5	28.5	
Total Split (s)	32.0	32.0	78.0	78.0	78.0	
Total Split (%)	29.1%	29.1%	70.9%	70.9%	70.9%	
Maximum Green (s)	26.5	26.5	71.5	71.5	71.5	
Yellow Time (s)	3.5	3.5	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	3.5	3.5	3.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.5	6.5	6.5	6.5	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	C-Max	C-Max	C-Max	
Walk Time (s)	10.0	10.0	10.0	10.0	10.0	
Flash Dont Walk (s)	10.0	10.0	12.0	12.0	12.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	
Act Effct Green (s)	20.4	20.4	77.6	77.6	77.6	
Actuated g/C Ratio	0.19	0.19	0.71	0.71	0.71	
v/c Ratio	0.76	0.48	0.51	0.39	0.65	
Control Delay	48.2	9.2	15.0	8.3	11.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	48.2	9.2	15.0	8.3	11.9	
LOS	D	A	B	A	B	
Approach Delay	29.8			10.0	11.9	
Approach LOS	C			B	B	

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 58 (53%), Referenced to phase 2:SBT and 6:NBTL, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.76
 Intersection Signal Delay: 15.2
 Intersection LOS: B
 Intersection Capacity Utilization 82.6%
 ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 1: Queen st & Thomas St



Queues
1: Queen st & Thomas St

2028 FT PM
03/20/2024



Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	226	203	182	507	800
v/c Ratio	0.76	0.48	0.51	0.39	0.65
Control Delay	48.2	9.2	15.0	8.3	11.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	48.2	9.2	15.0	8.3	11.9
Queue Length 50th (m)	35.1	10.3	14.7	36.2	69.9
Queue Length 95th (m)	51.6	20.9	39.0	62.6	126.0
Internal Link Dist (m)	144.1			187.1	89.7
Turn Bay Length (m)	20.0	20.0	35.0		
Base Capacity (vph)	385	492	357	1316	1232
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.59	0.41	0.51	0.39	0.65

Intersection Summary

Lanes, Volumes, Timings
2: Thomas St & Broadway St

2028 FT PM
03/20/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕			↕			↕	
Traffic Volume (vph)	117	388	5	0	463	47	4	1	2	25	0	129
Future Volume (vph)	117	388	5	0	463	47	4	1	2	25	0	129
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.999			0.986			0.961			0.887	
Flt Protected		0.989						0.972			0.992	
Satd. Flow (prot)	0	3484	0	0	3497	0	0	1759	0	0	1657	0
Flt Permitted		0.989						0.972			0.992	
Satd. Flow (perm)	0	3484	0	0	3497	0	0	1759	0	0	1657	0
Link Speed (k/h)		50			50			30			40	
Link Distance (m)		125.4			168.1			64.9			284.3	
Travel Time (s)		9.0			12.1			7.8			25.6	
Confl. Peds. (#/hr)	18		30	30		18						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	4%	2%	2%	3%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	127	422	5	0	503	51	4	1	2	27	0	140
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	554	0	0	554	0	0	7	0	0	167	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)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			1.6			4.9	
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
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	48.1%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
2: Thomas St & Broadway St

2028 FT PM
03/20/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔			↔↔			↔			↔	
Traffic Volume (veh/h)	117	388	5	0	463	47	4	1	2	25	0	129
Future Volume (Veh/h)	117	388	5	0	463	47	4	1	2	25	0	129
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	127	422	5	0	503	51	4	1	2	27	0	140
Pedestrians								30			18	
Lane Width (m)								3.7			3.7	
Walking Speed (m/s)								1.1			1.1	
Percent Blockage								3			2	
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)		125			168							
pX, platoon unblocked												
vC, conflicting volume	572			457			1100	1280	244	1014	1258	295
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	572			457			1100	1280	244	1014	1258	295
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	87			100			96	99	100	83	100	80
cM capacity (veh/h)	979			1068			112	136	735	163	141	689
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total	338	216	252	302	7	167						
Volume Left	127	0	0	0	4	27						
Volume Right	0	5	0	51	2	140						
cSH	979	1700	1068	1700	153	453						
Volume to Capacity	0.13	0.13	0.00	0.18	0.05	0.37						
Queue Length 95th (m)	3.1	0.0	0.0	0.0	1.0	11.7						
Control Delay (s)	4.3	0.0	0.0	0.0	29.6	17.5						
Lane LOS	A				D	C						
Approach Delay (s)	2.6		0.0		29.6	17.5						
Approach LOS					D	C						
Intersection Summary												
Average Delay			3.6									
Intersection Capacity Utilization			48.1%		ICU Level of Service				A			
Analysis Period (min)			15									



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗	↖	↘			↕	↗		↕	
Traffic Volume (vph)	6	418	104	44	569	6	283	1	92	3	0	10
Future Volume (vph)	6	418	104	44	569	6	283	1	92	3	0	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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			0.91		1.00			0.99	0.97		0.98	
Frt			0.850		0.998				0.850		0.894	
Flt Protected		0.999		0.950				0.953			0.989	
Satd. Flow (prot)	0	1846	1601	1789	1878	0	0	1761	1601	0	1639	0
Flt Permitted		0.991		0.417				0.717			0.944	
Satd. Flow (perm)	0	1831	1450	785	1878	0	0	1314	1559	0	1561	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)			113								30	
Link Speed (k/h)		50			50			40			30	
Link Distance (m)		129.3			125.4			171.6			40.7	
Travel Time (s)		9.3			9.0			15.4			4.9	
Confl. Peds. (#/hr)	22		22	22		22	4		7	7		4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	4%	2%	2%	2%	2%	4%	2%	2%	2%	2%	2%
Adj. Flow (vph)	7	454	113	48	618	7	308	1	100	3	0	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	461	113	48	625	0	0	309	100	0	14	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			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
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	0	0	1	0		1	1	1	1	1	
Detector Template	Left	Thru	Right		Thru		Left			Left		
Leading Detector (m)	6.1	0.0	0.0	21.8	0.0		6.1	6.0	6.0	6.1	8.8	
Trailing Detector (m)	0.0	0.0	0.0	12.8	0.0		0.0	-3.0	-3.0	0.0	-0.2	
Detector 1 Position(m)	0.0	0.0	0.0	12.8	0.0		0.0	-3.0	-3.0	0.0	-0.2	
Detector 1 Size(m)	6.1	1.8	6.1	9.0	1.8		6.1	9.0	9.0	6.1	9.0	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2			2			4			4	
Permitted Phases	2		2	2			4		4	4		
Detector Phase	2	2	2	2	2		4	4	4	4	4	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0		8.0	8.0	8.0	8.0	8.0	
Minimum Split (s)	25.0	25.0	25.0	25.0	25.0		25.0	25.0	25.0	25.0	25.0	
Total Split (s)	30.0	30.0	30.0	30.0	30.0		80.0	80.0	80.0	80.0	80.0	

Lanes, Volumes, Timings
 3: Streetsville Go Parking Lot/Private Access & Thomas St

2028 FT PM
 03/20/2024



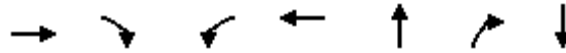
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)	27.3%	27.3%	27.3%	27.3%	27.3%		72.7%	72.7%	72.7%	72.7%	72.7%	
Maximum Green (s)	24.0	24.0	24.0	24.0	24.0		74.0	74.0	74.0	74.0	74.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)		6.0	6.0	6.0	6.0			6.0	6.0		6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max		None	None	None	None	None	
Walk Time (s)	8.0	8.0	8.0	8.0	8.0		8.0	8.0	8.0	8.0	8.0	
Flash Dont Walk (s)	8.0	8.0	8.0	8.0	8.0		8.0	8.0	8.0	8.0	8.0	
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0	0	0	0	
Act Effect Green (s)		62.8	62.8	62.8	62.8			35.2	35.2		35.2	
Actuated g/C Ratio		0.57	0.57	0.57	0.57			0.32	0.32		0.32	
v/c Ratio		0.44	0.13	0.11	0.58			0.74	0.20		0.03	
Control Delay		15.8	2.9	8.8	13.9			42.7	25.3		2.3	
Queue Delay		0.0	0.0	0.0	0.0			0.0	0.0		0.0	
Total Delay		15.8	2.9	8.8	13.9			42.7	25.3		2.3	
LOS		B	A	A	B			D	C		A	
Approach Delay		13.3			13.5			38.5			2.3	
Approach LOS		B			B			D			A	

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 10 (9%), Referenced to phase 2:EBWB, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.74
 Intersection Signal Delay: 19.5
 Intersection Capacity Utilization 69.0%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service C

Splits and Phases: 3: Streetsville Go Parking Lot/Private Access & Thomas St





Lane Group	EBT	EBR	WBL	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	461	113	48	625	309	100	14
v/c Ratio	0.44	0.13	0.11	0.58	0.74	0.20	0.03
Control Delay	15.8	2.9	8.8	13.9	42.7	25.3	2.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.8	2.9	8.8	13.9	42.7	25.3	2.3
Queue Length 50th (m)	47.0	0.0	2.2	68.9	54.5	14.4	0.0
Queue Length 95th (m)	72.4	6.7	m7.3	142.5	66.6	20.7	1.5
Internal Link Dist (m)	105.3			101.4	147.6		16.7
Turn Bay Length (m)							
Base Capacity (vph)	1045	876	448	1072	883	1048	1059
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.13	0.11	0.58	0.35	0.10	0.01

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lanes, Volumes, Timings
4: Thomas St & Joymar Dr

2028 FT PM
03/20/2024



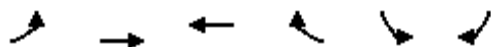
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕↕	↕↔		↘	↘
Traffic Volume (vph)	263	503	793	73	38	221
Future Volume (vph)	263	503	793	73	38	221
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0			0.0	10.0	0.0
Storage Lanes	0			0	1	1
Taper Length (m)	7.6				25.0	
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt			0.987			0.850
Flt Protected		0.983			0.950	
Satd. Flow (prot)	0	3418	3470	0	1789	1601
Flt Permitted		0.983			0.950	
Satd. Flow (perm)	0	3418	3470	0	1789	1601
Link Speed (k/h)		50	50		40	
Link Distance (m)		164.8	129.3		166.1	
Travel Time (s)		11.9	9.3		14.9	
Confl. Peds. (#/hr)	13					
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	6%	4%	2%	2%	2%
Adj. Flow (vph)	286	547	862	79	41	240
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	833	941	0	41	240
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.9	4.9		4.9	
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		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	59.1%
Analysis Period (min)	15
	ICU Level of Service B

HCM Unsignalized Intersection Capacity Analysis
4: Thomas St & Joymar Dr

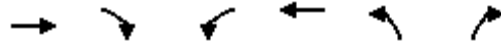
2028 FT PM
03/20/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔↑	↔↔		↔	↔
Traffic Volume (veh/h)	263	503	793	73	38	221
Future Volume (Veh/h)	263	503	793	73	38	221
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	286	547	862	79	41	240
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)		273	129			
pX, platoon unblocked					0.96	
vC, conflicting volume	954				1760	484
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	954				1704	484
tC, single (s)	4.2				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	59				11	54
cM capacity (veh/h)	701				46	522
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	SB 2
Volume Total	468	365	575	366	41	240
Volume Left	286	0	0	0	41	0
Volume Right	0	0	0	79	0	240
cSH	701	1700	1700	1700	46	522
Volume to Capacity	0.41	0.21	0.34	0.22	0.89	0.46
Queue Length 95th (m)	13.9	0.0	0.0	0.0	25.3	16.7
Control Delay (s)	10.7	0.0	0.0	0.0	236.4	17.6
Lane LOS	B				F	C
Approach Delay (s)	6.0		0.0		49.5	
Approach LOS					E	
Intersection Summary						
Average Delay			9.2			
Intersection Capacity Utilization			59.1%		ICU Level of Service	B
Analysis Period (min)			15			

Lanes, Volumes, Timings
5: HillSide Drive & Thomas St

2028 FT PM
03/20/2024



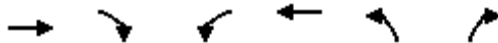
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑↑	
Traffic Volume (vph)	705	53	53	967	32	62
Future Volume (vph)	705	53	53	967	32	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt	0.989				0.911	
Flt Protected				0.997	0.983	
Satd. Flow (prot)	3329	0	0	3440	1692	0
Flt Permitted				0.997	0.983	
Satd. Flow (perm)	3329	0	0	3440	1692	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	108.5			164.8	111.9	
Travel Time (s)	8.1			12.4	8.4	
Confl. Peds. (#/hr)		13	13			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	9%	1%	2%	6%	1%	2%
Adj. Flow (vph)	766	58	58	1051	35	67
Shared Lane Traffic (%)						
Lane Group Flow (vph)	824	0	0	1109	102	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)		97	97		97	97
Sign Control	Free			Free	Stop	

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
5: HillSide Drive & Thomas St

2028 FT PM
03/20/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑↑	
Traffic Volume (veh/h)	705	53	53	967	32	62
Future Volume (Veh/h)	705	53	53	967	32	62
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	766	58	58	1051	35	67
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)	109			294		
pX, platoon unblocked			0.92		0.92	0.92
vC, conflicting volume			837		1450	425
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			660		1323	214
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			93		72	91
cM capacity (veh/h)			843		127	722
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	
Volume Total	511	313	408	701	102	
Volume Left	0	0	58	0	35	
Volume Right	0	58	0	0	67	
cSH	1700	1700	843	1700	276	
Volume to Capacity	0.30	0.18	0.07	0.41	0.37	
Queue Length 95th (m)	0.0	0.0	1.5	0.0	11.4	
Control Delay (s)	0.0	0.0	2.1	0.0	25.5	
Lane LOS	A			D		
Approach Delay (s)	0.0		0.8	25.5		
Approach LOS				D		
Intersection Summary						
Average Delay			1.7			
Intersection Capacity Utilization			65.1%	ICU Level of Service		C
Analysis Period (min)			15			

Lanes, Volumes, Timings
6: McFarren Blvd/Gaffney Dr & Thomas St

2028 FT PM
03/20/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	31	654	28	96	856	39	24	15	78	21	16	15
Future Volume (vph)	31	654	28	96	856	39	24	15	78	21	16	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		35.0	30.0		0.0	25.0		0.0	0.0		0.0
Storage Lanes	1		1	1		0	1		0	0		0
Taper Length (m)	30.0			45.0			35.0			2.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.94	0.99	1.00		0.99	0.99			0.99	
Frt			0.850		0.994			0.874			0.961	
Flt Protected	0.950			0.950			0.950				0.980	
Satd. Flow (prot)	1789	3349	1617	1789	3392	0	1789	1637	0	0	1764	0
Flt Permitted	0.295			0.354			0.860				0.821	
Satd. Flow (perm)	553	3349	1528	660	3392	0	1609	1637	0	0	1476	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			64		8			85			16	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		165.0			108.5			146.4			138.4	
Travel Time (s)		12.4			8.1			11.0			10.4	
Confl. Peds. (#/hr)	9		15	15		9	7		4	4		7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	9%	1%	2%	7%	2%	2%	2%	1%	2%	2%	2%
Adj. Flow (vph)	34	711	30	104	930	42	26	16	85	23	17	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	34	711	30	104	972	0	26	101	0	0	56	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)	97		97	97		97	97		97	97		97
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	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	
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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
6: McFarren Blvd/Gaffney Dr & Thomas St

2028 FT PM
03/20/2024

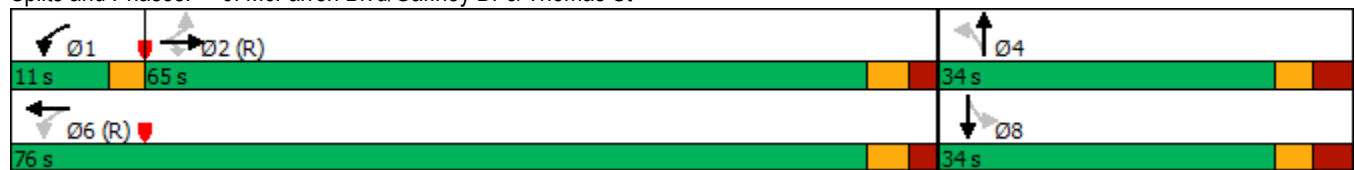


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			4				8
Permitted Phases	2		2	6			4			8		
Detector Phase	2	2	2	1	6		4	4		8		8
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	7.0	10.0		10.0	10.0		10.0		10.0
Minimum Split (s)	29.0	29.0	29.0	10.0	29.0		38.5	38.5		38.5		38.5
Total Split (s)	65.0	65.0	65.0	11.0	76.0		34.0	34.0		34.0		34.0
Total Split (%)	59.1%	59.1%	59.1%	10.0%	69.1%		30.9%	30.9%		30.9%		30.9%
Maximum Green (s)	59.0	59.0	59.0	8.0	70.0		27.5	27.5		27.5		27.5
Yellow Time (s)	3.5	3.5	3.5	3.0	3.5		3.0	3.0		3.0		3.0
All-Red Time (s)	2.5	2.5	2.5	0.0	2.5		3.5	3.5		3.5		3.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0				0.0
Total Lost Time (s)	6.0	6.0	6.0	3.0	6.0		6.5	6.5				6.5
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?	Yes	Yes	Yes	Yes								
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0		3.0
Recall Mode	C-Max	C-Max	C-Max	None	C-Max		None	None		None		None
Walk Time (s)	10.0	10.0	10.0		10.0		10.0	10.0		10.0		10.0
Flash Dont Walk (s)	13.0	13.0	13.0		13.0		22.0	22.0		22.0		22.0
Pedestrian Calls (#/hr)	0	0	0		0		0	0		0		0
Act Effct Green (s)	76.9	76.9	76.9	90.1	87.1		10.4	10.4				10.4
Actuated g/C Ratio	0.70	0.70	0.70	0.82	0.79		0.09	0.09				0.09
v/c Ratio	0.09	0.30	0.03	0.17	0.36		0.17	0.44				0.36
Control Delay	6.3	6.8	0.2	2.0	3.2		48.3	19.8				42.5
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0				0.0
Total Delay	6.3	6.8	0.2	2.0	3.2		48.3	19.8				42.5
LOS	A	A	A	A	A		D	B				D
Approach Delay		6.5			3.1			25.7				42.5
Approach LOS		A			A			C				D

Intersection Summary

Area Type:	Other
Cycle Length:	110
Actuated Cycle Length:	110
Offset:	0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle:	80
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.44
Intersection Signal Delay:	6.9
Intersection LOS:	A
Intersection Capacity Utilization:	62.0%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 6: McFarren Blvd/Gaffney Dr & Thomas St



Queues
6: McFarren Blvd/Gaffney Dr & Thomas St

2028 FT PM
03/20/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	34	711	30	104	972	26	101	56
v/c Ratio	0.09	0.30	0.03	0.17	0.36	0.17	0.44	0.36
Control Delay	6.3	6.8	0.2	2.0	3.2	48.3	19.8	42.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.3	6.8	0.2	2.0	3.2	48.3	19.8	42.5
Queue Length 50th (m)	1.9	24.4	0.0	2.3	20.0	4.8	3.0	7.5
Queue Length 95th (m)	5.4	35.2	0.6	m4.3	26.4	12.5	17.2	18.6
Internal Link Dist (m)		141.0			84.5		122.4	114.4
Turn Bay Length (m)	30.0		35.0	30.0		25.0		
Base Capacity (vph)	386	2341	1087	622	2686	402	473	381
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	0.09	0.30	0.03	0.17	0.36	0.06	0.21	0.15

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lanes, Volumes, Timings
7: Joymar Dr & Tannery St

2028 FT PM
03/20/2024



















Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	1	1	3	163	1	172	1	142	196	93	123	1
Future Volume (vph)	1	1	3	163	1	172	1	142	196	93	123	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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												
Frt		0.919			0.931			0.922			0.999	
Flt Protected		0.990			0.976						0.979	
Satd. Flow (prot)	0	1714	0	0	1711	0	0	1744	0	0	1868	0
Flt Permitted		0.990			0.976						0.979	
Satd. Flow (perm)	0	1714	0	0	1711	0	0	1744	0	0	1868	0
Link Speed (k/h)		40			40			40			40	
Link Distance (m)		53.6			75.3			145.8			123.6	
Travel Time (s)		4.8			6.8			13.1			11.1	
Confl. Peds. (#/hr)	13		4	4		13	19		3	3		19
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	1%	2%	0%	1%	2%
Adj. Flow (vph)	1	1	3	177	1	187	1	154	213	101	134	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	5	0	0	365	0	0	368	0	0	236	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)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			4.9			4.9			4.9	
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
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	69.2%
ICU Level of Service	C
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
7: Joymar Dr & Tannery St

2028 FT PM
03/20/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	1	1	3	163	1	172	1	142	196	93	123	1
Future Volume (vph)	1	1	3	163	1	172	1	142	196	93	123	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	1	3	177	1	187	1	154	213	101	134	1
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	5	365	368	236								
Volume Left (vph)	1	177	1	101								
Volume Right (vph)	3	187	213	1								
Hadj (s)	-0.29	-0.18	-0.32	0.09								
Departure Headway (s)	5.9	5.3	5.0	5.6								
Degree Utilization, x	0.01	0.54	0.51	0.37								
Capacity (veh/h)	482	638	675	601								
Control Delay (s)	9.0	14.3	13.2	11.8								
Approach Delay (s)	9.0	14.3	13.2	11.8								
Approach LOS	A	B	B	B								
Intersection Summary												
Delay			13.2									
Level of Service			B									
Intersection Capacity Utilization			69.2%	ICU Level of Service	C							
Analysis Period (min)			15									

Lanes, Volumes, Timings
8: Tannery St & Rutledge Road

2028 FT PM
03/20/2024



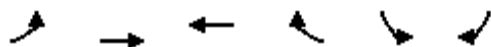
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↔		↘	↙
Traffic Volume (vph)	50	132	238	51	21	47
Future Volume (vph)	50	132	238	51	21	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.976		0.907	
Flt Protected		0.986			0.985	
Satd. Flow (prot)	0	1857	1838	0	1683	0
Flt Permitted		0.986			0.985	
Satd. Flow (perm)	0	1857	1838	0	1683	0
Link Speed (k/h)		40	40		40	
Link Distance (m)		90.1	107.5		111.8	
Travel Time (s)		8.1	9.7		10.1	
Confl. Peds. (#/hr)	16			16	2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	143	259	55	23	51
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	197	314	0	74	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.9	4.9		4.9	
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		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	39.7%
Analysis Period (min)	15
	ICU Level of Service A

HCM Unsignalized Intersection Capacity Analysis
8: Tannery St & Rutledge Road

2028 FT PM
03/20/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	
Traffic Volume (veh/h)	50	132	238	51	21	47
Future Volume (Veh/h)	50	132	238	51	21	47
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	54	143	259	55	23	51
Pedestrians			2		16	
Lane Width (m)			3.7		3.7	
Walking Speed (m/s)			1.1		1.1	
Percent Blockage			0		2	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	330				556	302
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	330				556	302
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	96				95	93
cM capacity (veh/h)	1210				462	726
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	197	314	74			
Volume Left	54	0	23			
Volume Right	0	55	51			
cSH	1210	1700	616			
Volume to Capacity	0.04	0.18	0.12			
Queue Length 95th (m)	1.0	0.0	2.8			
Control Delay (s)	2.5	0.0	11.6			
Lane LOS	A		B			
Approach Delay (s)	2.5	0.0	11.6			
Approach LOS			B			
Intersection Summary						
Average Delay			2.3			
Intersection Capacity Utilization			39.7%	ICU Level of Service		A
Analysis Period (min)			15			

Lanes, Volumes, Timings
 9: Broadway St/Crumbie St & Tannery St

2028 FT PM
 03/20/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	41	119	27	28	210	21	51	54	45	14	53	55
Future Volume (vph)	41	119	27	28	210	21	51	54	45	14	53	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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												
Frt		0.981			0.989			0.959			0.939	
Flt Protected		0.989			0.995			0.983			0.994	
Satd. Flow (prot)	0	1827	0	0	1853	0	0	1776	0	0	1758	0
Flt Permitted		0.989			0.995			0.983			0.994	
Satd. Flow (perm)	0	1827	0	0	1853	0	0	1776	0	0	1758	0
Link Speed (k/h)		40			40			40			48	
Link Distance (m)		107.5			52.2			284.3			52.6	
Travel Time (s)		9.7			4.7			25.6			3.9	
Confl. Peds. (#/hr)	10		15	15		10	5		11	11		5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	45	129	29	30	228	23	55	59	49	15	58	60
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	203	0	0	281	0	0	163	0	0	133	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)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
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
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

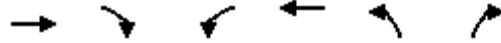
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	40.1%
Analysis Period (min)	15
	ICU Level of Service A

HCM Unsignalized Intersection Capacity Analysis
 9: Broadway St/Crumbie St & Tannery St

2028 FT PM
 03/20/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	41	119	27	28	210	21	51	54	45	14	53	55
Future Volume (Veh/h)	41	119	27	28	210	21	51	54	45	14	53	55
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	45	129	29	30	228	23	55	59	49	15	58	60
Pedestrians		5			11			15			10	
Lane Width (m)		3.7			3.7			3.7			3.7	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		0			1			1			1	
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	261			173			642	570	170	632	572	254
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	261			173			642	570	170	632	572	254
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			98			81	85	94	95	85	92
cM capacity (veh/h)	1291			1383			292	398	852	302	396	773
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	203	281	163	133								
Volume Left	45	30	55	15								
Volume Right	29	23	49	60								
cSH	1291	1383	414	486								
Volume to Capacity	0.03	0.02	0.39	0.27								
Queue Length 95th (m)	0.8	0.5	12.9	7.7								
Control Delay (s)	2.0	1.0	19.2	15.2								
Lane LOS	A	A	C	C								
Approach Delay (s)	2.0	1.0	19.2	15.2								
Approach LOS			C	C								
Intersection Summary												
Average Delay			7.5									
Intersection Capacity Utilization			40.1%		ICU Level of Service				A			
Analysis Period (min)			15									



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	122	66	46	116	43	24
Future Volume (vph)	122	66	46	116	43	24
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t	0.953			0.952		
Fl _t Protected				0.986	0.969	
Satd. Flow (prot)	1795	0	0	1857	1737	0
Fl _t Permitted				0.986	0.969	
Satd. Flow (perm)	1795	0	0	1857	1737	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	75.3			90.1	71.4	
Travel Time (s)	5.6			6.8	5.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	133	72	50	126	47	26
Shared Lane Traffic (%)						
Lane Group Flow (vph)	205	0	0	176	73	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	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)	97		97	97		97
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	32.9%
Analysis Period (min)	15
	ICU Level of Service A

HCM Unsignalized Intersection Capacity Analysis
 10: Site Access 1 & Tannery St

2028 FT PM
 03/20/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	→			←	↙	↘
Traffic Volume (veh/h)	122	66	46	116	43	24
Future Volume (Veh/h)	122	66	46	116	43	24
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	133	72	50	126	47	26
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			205		395	169
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			205		395	169
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			96		92	97
cM capacity (veh/h)			1366		588	875
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	205	176	73			
Volume Left	0	50	47			
Volume Right	72	0	26			
cSH	1700	1366	665			
Volume to Capacity	0.12	0.04	0.11			
Queue Length 95th (m)	0.0	0.8	2.6			
Control Delay (s)	0.0	2.4	11.1			
Lane LOS		A	B			
Approach Delay (s)	0.0	2.4	11.1			
Approach LOS			B			
Intersection Summary						
Average Delay			2.7			
Intersection Capacity Utilization			32.9%	ICU Level of Service	A	
Analysis Period (min)			15			



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	26	36	128	69	28	59
Future Volume (vph)	26	36	128	69	28	59
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.921		0.953			
Flt Protected	0.980					0.984
Satd. Flow (prot)	1700	0	1795	0	0	1853
Flt Permitted	0.980					0.984
Satd. Flow (perm)	1700	0	1795	0	0	1853
Link Speed (k/h)	48		48			48
Link Distance (m)	78.9		166.1			145.8
Travel Time (s)	5.9		12.5			10.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	28	39	139	75	30	64
Shared Lane Traffic (%)						
Lane Group Flow (vph)	67	0	214	0	0	94
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
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)	97	97		97	97	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	29.2%
Analysis Period (min)	15
	ICU Level of Service A

HCM Unsignalized Intersection Capacity Analysis
 11: Joymar Dr & Site Access 2

2028 FT PM
 03/20/2024



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	26	36	128	69	28	59
Future Volume (Veh/h)	26	36	128	69	28	59
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)	28	39	139	75	30	64
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	300	176			214	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	300	176			214	
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	95			98	
cM capacity (veh/h)	676	867			1356	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	67	214	94			
Volume Left	28	0	30			
Volume Right	39	75	0			
cSH	775	1700	1356			
Volume to Capacity	0.09	0.13	0.02			
Queue Length 95th (m)	2.0	0.0	0.5			
Control Delay (s)	10.1	0.0	2.6			
Lane LOS	B		A			
Approach Delay (s)	10.1	0.0	2.6			
Approach LOS	B					
Intersection Summary						
Average Delay			2.4			
Intersection Capacity Utilization			29.2%		ICU Level of Service	A
Analysis Period (min)	15					

Appendix K

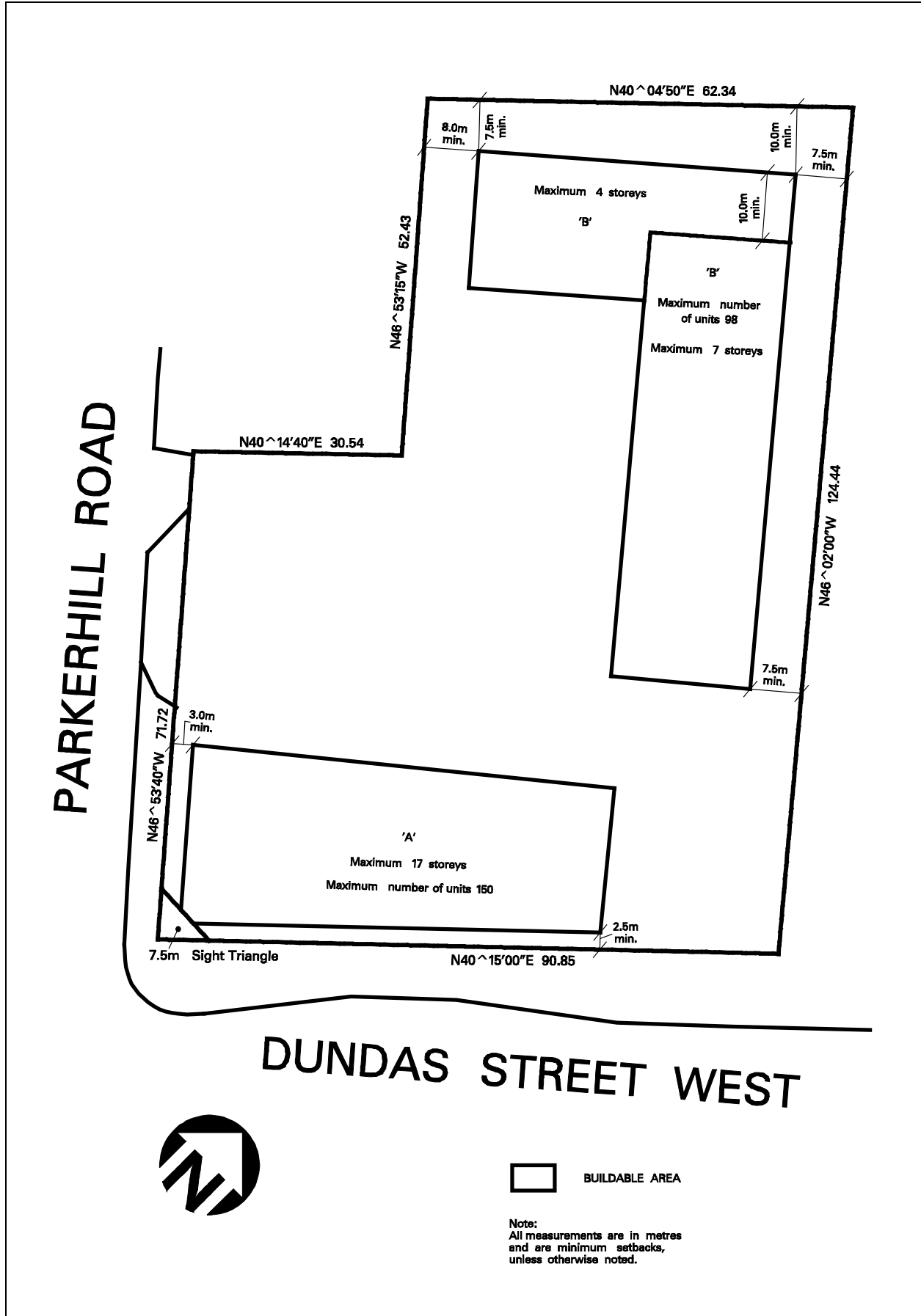
Relevant Excerpts from Parking Study

Part 4 - Residential Zones

4.15.5.14	Exception: RA4-14	Map # 21	By-law: 0174-2017
<p>In a RA4-14 zone the permitted uses and applicable regulations shall be as specified for a RA4 zone except that the following uses/regulations shall apply:</p>			
Regulations			
4.15.5.14.1	Minimum floor space index - apartment zone		0.9
4.15.5.14.2	Maximum floor space index - apartment zone		1.4
4.15.5.14.3	Maximum height		13 storeys

4.15.5.15	Exception: RA4-15	Map # 22	By-law: 0174-2017, 0208-2022
<p>In a RA4-15 zone the permitted uses and applicable regulations shall be as specified for a RA4 zone except that the following uses/regulations shall apply:</p>			
Additional Permitted Uses			
4.15.5.15.1	(1) Restaurant and take-out restaurant accessory to an apartment		
Regulations			
4.15.5.15.2	Maximum number of dwelling units per hectare		247
4.15.5.15.3	Minimum floor space index - apartment zone		1.5
4.15.5.15.4	Maximum floor space index - apartment zone		2.9
4.15.5.15.5	Maximum gross floor area - non-residential used for accessory uses		1 200 m ²
4.15.5.15.6	Accessory uses shall only be located within the first storey of the apartment in Buildable Area 'A' identified on Schedule RA4-15 of this Exception		
4.15.5.15.7	Minimum number of resident parking spaces per one-bedroom apartment dwelling unit		0.56
4.15.5.15.8	Minimum number of resident parking spaces per two-bedroom apartment dwelling unit		0.66
4.15.5.15.9	Minimum number of resident parking spaces per three-bedroom apartment dwelling unit		0.70
4.15.5.15.10	Minimum number of visitor parking spaces per apartment dwelling unit		0.20
4.15.5.15.11	Minimum number of resident parking spaces per one-bedroom retirement dwelling unit		0.40
4.15.5.15.12	Minimum number of resident parking spaces per two-bedroom retirement dwelling unit		0.90
4.15.5.15.13	Minimum number of visitor parking spaces per retirement dwelling unit		0.10
4.15.5.15.14	Minimum number of parking spaces per 100 m ² gross floor area - non-residential of an accessory retail store		3.5

Part 4 - Residential Zones



Appendix L

ITE Trip Generation

Multifamily Housing (High-Rise) Not Close to Rail Transit (222)

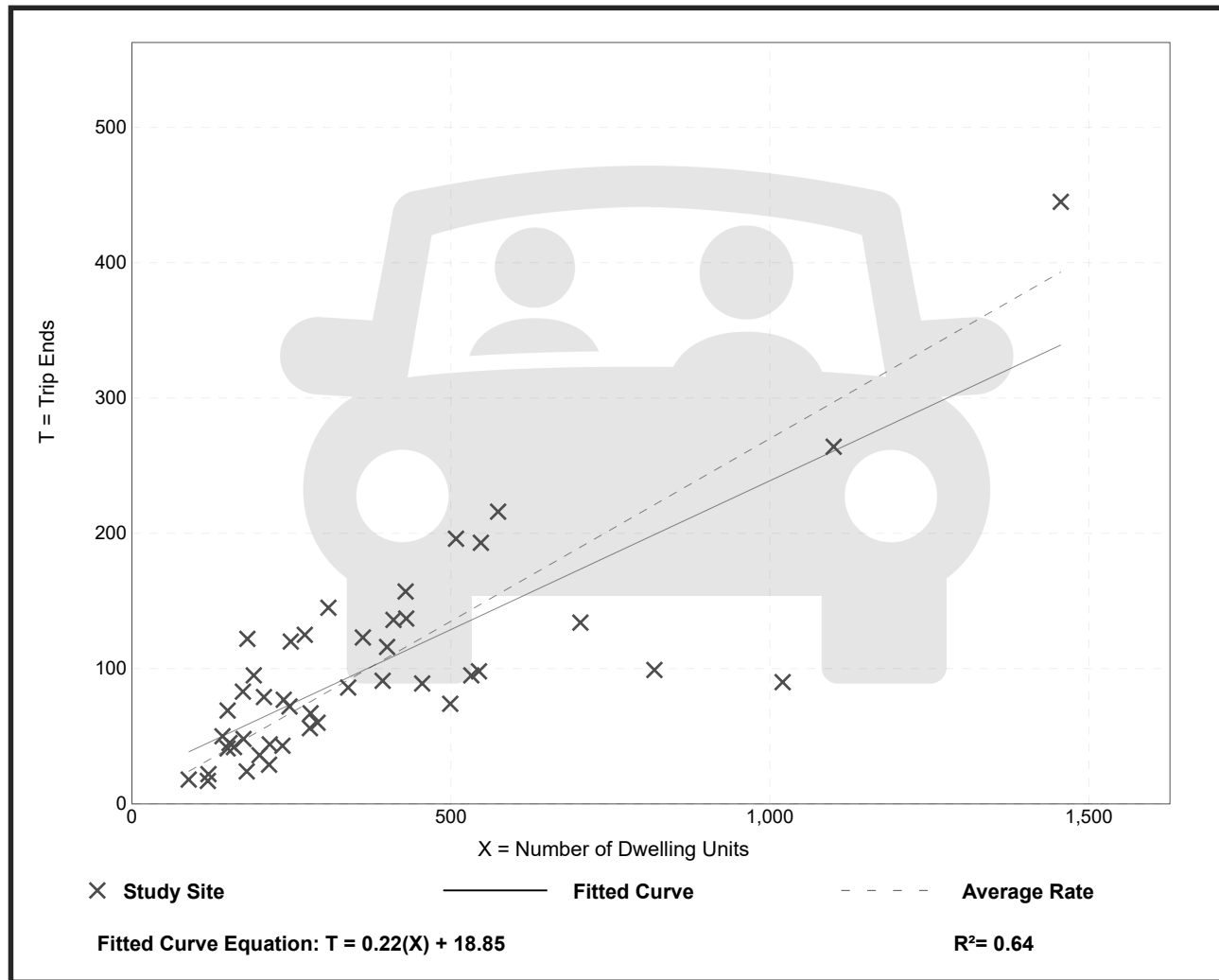
Vehicle Trip Ends vs: Dwelling Units
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.

Setting/Location: General Urban/Suburban
 Number of Studies: 45
 Avg. Num. of Dwelling Units: 372
 Directional Distribution: 26% entering, 74% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.27	0.09 - 0.67	0.11

Data Plot and Equation



Multifamily Housing (High-Rise) Not Close to Rail Transit (222)

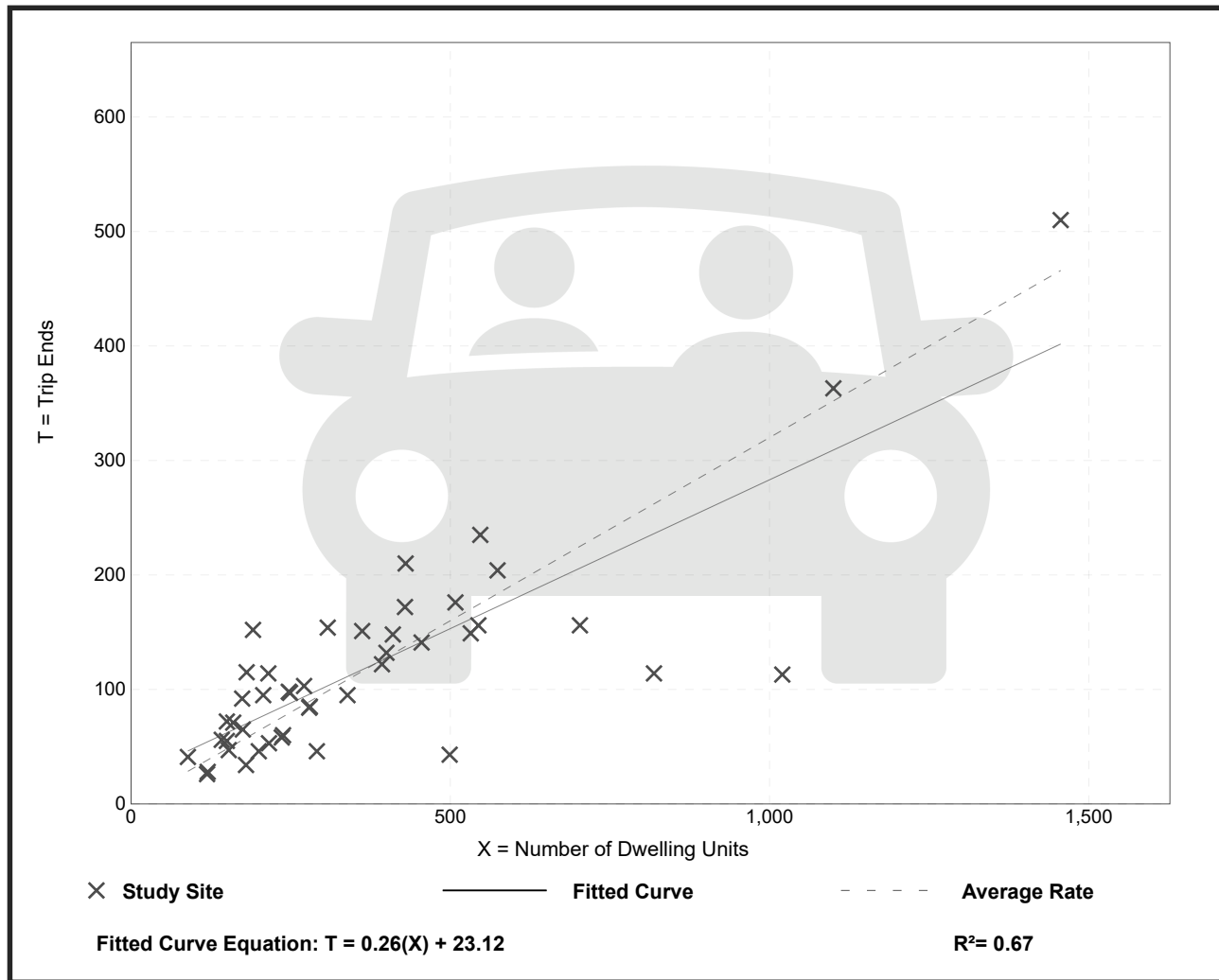
Vehicle Trip Ends vs: Dwelling Units
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.

Setting/Location: General Urban/Suburban
 Number of Studies: 45
 Avg. Num. of Dwelling Units: 372
 Directional Distribution: 62% entering, 38% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.32	0.09 - 0.80	0.13

Data Plot and Equation



Appendix M

TTS Analysis

Appendix N

2028 Future Total Detailed Capacity Analysis

Lanes, Volumes, Timings
1: Queen st & Thomas St

2028 FT AM
03/20/2024



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	264	162	133	372	391	197
Future Volume (vph)	264	162	133	372	391	197
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0	20.0	35.0			0.0
Storage Lanes	0	0	1			0
Taper Length (m)	0.0		55.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.97	1.00		0.99	
Frt		0.850			0.955	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1722	1512	1772	1746	1630	0
Flt Permitted	0.950		0.343			
Satd. Flow (perm)	1700	1467	638	1746	1630	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		176			41	
Link Speed (k/h)	50			40	40	
Link Distance (m)	168.1			211.1	113.7	
Travel Time (s)	12.1			19.0	10.2	
Confl. Peds. (#/hr)	5	4	9			9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	6%	8%	3%	10%	14%	7%
Adj. Flow (vph)	287	176	145	404	425	214
Shared Lane Traffic (%)						
Lane Group Flow (vph)	287	176	145	404	639	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)	4.9			4.9	4.9	
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
Number of Detectors	1	1	0	0	0	
Detector Template	Left			Thru	Thru	
Leading Detector (m)	8.5	8.5	0.0	0.0	0.0	
Trailing Detector (m)	-0.2	-0.5	0.0	0.0	0.0	
Detector 1 Position(m)	-0.2	-0.5	-0.5	0.0	0.0	
Detector 1 Size(m)	8.7	9.0	9.0	1.8	1.8	
Detector 1 Type	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	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Turn Type	Perm	Perm	Perm	NA	NA	
Protected Phases				6	2	
Permitted Phases	8	8	6	6	2	
Detector Phase	8	8	6	6	2	
Switch Phase						

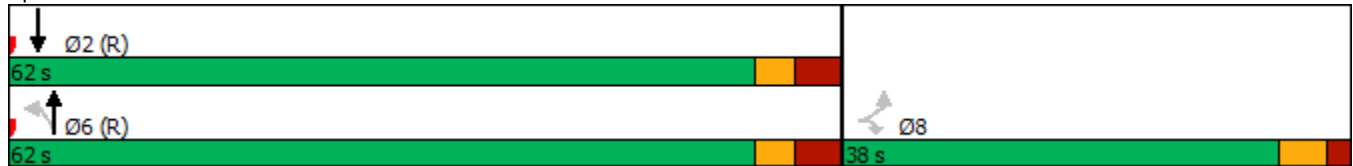


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	26.5	26.5	28.5	28.5	28.5	
Total Split (s)	38.0	38.0	62.0	62.0	62.0	
Total Split (%)	38.0%	38.0%	62.0%	62.0%	62.0%	
Maximum Green (s)	32.5	32.5	55.5	55.5	55.5	
Yellow Time (s)	3.5	3.5	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	3.5	3.5	3.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.5	6.5	6.5	6.5	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	C-Max	C-Max	C-Max	
Walk Time (s)	10.0	10.0	10.0	10.0	10.0	
Flash Dont Walk (s)	10.0	10.0	12.0	12.0	12.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	
Act Effct Green (s)	22.3	22.3	65.7	65.7	65.7	
Actuated g/C Ratio	0.22	0.22	0.66	0.66	0.66	
v/c Ratio	0.76	0.38	0.35	0.35	0.59	
Control Delay	43.3	4.7	12.1	9.7	12.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	43.3	4.7	12.1	9.7	12.9	
LOS	D	A	B	A	B	
Approach Delay	28.6			10.4	12.9	
Approach LOS	C			B	B	

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 70 (70%), Referenced to phase 2:SBT and 6:NBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.76
 Intersection Signal Delay: 16.5
 Intersection LOS: B
 Intersection Capacity Utilization 71.5%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 1: Queen st & Thomas St



Queues
1: Queen st & Thomas St

2028 FT AM
03/20/2024



Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	287	176	145	404	639
v/c Ratio	0.76	0.38	0.35	0.35	0.59
Control Delay	43.3	4.7	12.1	9.7	12.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	43.3	4.7	12.1	9.7	12.9
Queue Length 50th (m)	49.4	5.3	10.4	28.9	53.4
Queue Length 95th (m)	69.2	4.3	26.8	55.5	104.1
Internal Link Dist (m)	144.1			187.1	89.7
Turn Bay Length (m)	20.0	20.0	35.0		
Base Capacity (vph)	552	595	419	1146	1084
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.52	0.30	0.35	0.35	0.59

Intersection Summary

Lanes, Volumes, Timings
2: Thomas St & Broadway St

2028 FT AM
03/20/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕			↕			↕	
Traffic Volume (vph)	104	413	4	2	319	49	2	0	2	29	1	77
Future Volume (vph)	104	413	4	2	319	49	2	0	2	29	1	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.999			0.980			0.932			0.903	
Flt Protected		0.990						0.976			0.987	
Satd. Flow (prot)	0	3363	0	0	3263	0	0	1713	0	0	1679	0
Flt Permitted		0.990						0.976			0.987	
Satd. Flow (perm)	0	3363	0	0	3263	0	0	1713	0	0	1679	0
Link Speed (k/h)		50			50			30			40	
Link Distance (m)		125.4			168.1			64.9			284.3	
Travel Time (s)		9.0			12.1			7.8			25.6	
Confl. Peds. (#/hr)	11		15	15		11	1		1	1		1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	9%	2%	2%	11%	1%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	113	449	4	2	347	53	2	0	2	32	1	84
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	566	0	0	402	0	0	4	0	0	117	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)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			1.6			4.9	
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
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	43.2%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
2: Thomas St & Broadway St

2028 FT AM
03/20/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔			↔↔			↔			↔	
Traffic Volume (veh/h)	104	413	4	2	319	49	2	0	2	29	1	77
Future Volume (Veh/h)	104	413	4	2	319	49	2	0	2	29	1	77
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	113	449	4	2	347	53	2	0	2	32	1	84
Pedestrians		1			1			15			11	
Lane Width (m)		3.7			3.7			3.7			3.7	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		0			0			1			1	
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)		125			168							
pX, platoon unblocked												
vC, conflicting volume	411			468			955	1107	242	842	1082	212
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	411			468			955	1107	242	842	1082	212
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	90			100			99	100	100	86	99	89
cM capacity (veh/h)	1140			1075			169	183	747	230	189	784
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total	338	228	176	226	4	117						
Volume Left	113	0	2	0	2	32						
Volume Right	0	4	0	53	2	84						
cSH	1140	1700	1075	1700	276	465						
Volume to Capacity	0.10	0.13	0.00	0.13	0.01	0.25						
Queue Length 95th (m)	2.3	0.0	0.0	0.0	0.3	6.9						
Control Delay (s)	3.5	0.0	0.1	0.0	18.3	15.3						
Lane LOS	A		A		C	C						
Approach Delay (s)	2.1		0.0		18.3	15.3						
Approach LOS					C	C						
Intersection Summary												
Average Delay			2.8									
Intersection Capacity Utilization			43.2%		ICU Level of Service				A			
Analysis Period (min)			15									

Lanes, Volumes, Timings
 3: Streetsville Go Parking Lot/Private Access & Thomas St

2028 FT AM
 03/20/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗	↖	↗			↕	↗		↕	
Traffic Volume (vph)	0	340	473	85	219	0	188	1	64	0	0	2
Future Volume (vph)	0	340	473	85	219	0	188	1	64	0	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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			0.96	0.99				1.00	0.97		0.98	
Frt			0.850						0.850		0.865	
Flt Protected				0.950				0.953				
Satd. Flow (prot)	0	1762	1555	1789	1746	0	0	1795	1585	0	1604	0
Flt Permitted				0.505				0.727				
Satd. Flow (perm)	0	1762	1491	942	1746	0	0	1364	1537	0	1604	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)			514								661	
Link Speed (k/h)		50			50			40			30	
Link Distance (m)		129.3			125.4			171.6			40.7	
Travel Time (s)		9.3			9.0			15.4			4.9	
Confl. Peds. (#/hr)	20		7	7		20	2		10	10		2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	9%	5%	2%	10%	2%	2%	2%	3%	2%	2%	2%
Adj. Flow (vph)	0	370	514	92	238	0	204	1	70	0	0	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	370	514	92	238	0	0	205	70	0	2	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			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
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	0	0	1	0		1	1	1	1	1	
Detector Template	Left	Thru	Right		Thru		Left			Left		
Leading Detector (m)	6.1	0.0	0.0	21.8	0.0		6.1	6.0	6.0	6.1	8.8	
Trailing Detector (m)	0.0	0.0	0.0	12.8	0.0		0.0	-3.0	-3.0	0.0	-0.2	
Detector 1 Position(m)	0.0	0.0	0.0	12.8	0.0		0.0	-3.0	-3.0	0.0	-0.2	
Detector 1 Size(m)	6.1	1.8	6.1	9.0	1.8		6.1	9.0	9.0	6.1	9.0	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
Turn Type		NA	Perm	pm+pt	NA		Perm	NA	pm+ov		NA	
Protected Phases		2		1	2			4	1		4	
Permitted Phases	2		2	2			4		4	4		
Detector Phase	2	2	2	1	2		4	4	1	4	4	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	5.0	8.0		8.0	8.0	5.0	8.0	8.0	
Minimum Split (s)	25.0	25.0	25.0	9.5	25.0		25.0	25.0	9.5	25.0	25.0	
Total Split (s)	52.0	52.0	52.0	20.0	52.0		28.0	28.0	20.0	28.0	28.0	

Lanes, Volumes, Timings
 3: Streetsville Go Parking Lot/Private Access & Thomas St

2028 FT AM
 03/20/2024



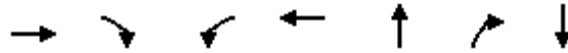
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)	52.0%	52.0%	52.0%	20.0%	52.0%		28.0%	28.0%	20.0%	28.0%	28.0%	
Maximum Green (s)	46.0	46.0	46.0	17.0	46.0		22.0	22.0	17.0	22.0	22.0	
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0		4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	0.0	2.0		2.0	2.0	0.0	2.0	2.0	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)		6.0	6.0	3.0	6.0			6.0	3.0		6.0	
Lead/Lag	Lag	Lag	Lag	Lead	Lag				Lead			
Lead-Lag Optimize?	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	3.0	3.0	
Recall Mode	C-Max	C-Max	C-Max	None	C-Max		None	None	None	None	None	
Walk Time (s)	8.0	8.0	8.0		8.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)	8.0	8.0	8.0		8.0		8.0	8.0		8.0	8.0	
Pedestrian Calls (#/hr)	0	0	0		0		0	0		0	0	
Act Effct Green (s)		61.5	61.5	69.8	61.5			18.8	28.1		18.8	
Actuated g/C Ratio		0.62	0.62	0.70	0.62			0.19	0.28		0.19	
v/c Ratio		0.34	0.46	0.13	0.22			0.80	0.16		0.00	
Control Delay		7.0	3.4	2.5	7.2			61.1	24.2		0.0	
Queue Delay		0.0	0.0	0.0	0.0			0.0	0.0		0.0	
Total Delay		7.0	3.4	2.5	7.2			61.1	24.2		0.0	
LOS		A	A	A	A			E	C		A	
Approach Delay		4.9			5.9			51.7				
Approach LOS		A			A			D				

Intersection Summary

Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	100
Offset:	11 (11%), Referenced to phase 2:EBWB, Start of Green
Natural Cycle:	60
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.80
Intersection Signal Delay:	13.7
Intersection LOS:	B
Intersection Capacity Utilization:	65.5%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 3: Streetsville Go Parking Lot/Private Access & Thomas St





Lane Group	EBT	EBR	WBL	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	370	514	92	238	205	70	2
v/c Ratio	0.34	0.46	0.13	0.22	0.80	0.16	0.00
Control Delay	7.0	3.4	2.5	7.2	61.1	24.2	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.0	3.4	2.5	7.2	61.1	24.2	0.0
Queue Length 50th (m)	25.1	7.8	2.8	22.1	34.5	8.8	0.0
Queue Length 95th (m)	53.3	53.4	m2.5	25.2	#60.1	17.1	0.0
Internal Link Dist (m)	105.3			101.4	147.6		16.7
Turn Bay Length (m)							
Base Capacity (vph)	1083	1114	823	1073	300	604	868
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.34	0.46	0.11	0.22	0.68	0.12	0.00

Intersection Summary

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

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lanes, Volumes, Timings
4: Thomas St & Joymar Dr

2028 FT AM
03/20/2024



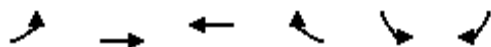
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕↕	↕↕		↘	↘
Traffic Volume (vph)	180	783	348	64	37	293
Future Volume (vph)	180	783	348	64	37	293
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0			0.0	10.0	0.0
Storage Lanes	0			0	1	1
Taper Length (m)	7.6				25.0	
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt			0.977			0.850
Flt Protected		0.991			0.950	
Satd. Flow (prot)	0	3279	3229	0	1807	1512
Flt Permitted		0.991			0.950	
Satd. Flow (perm)	0	3279	3229	0	1807	1512
Link Speed (k/h)		50	50		40	
Link Distance (m)		164.8	129.3		166.1	
Travel Time (s)		11.9	9.3		14.9	
Confl. Peds. (#/hr)	10			10	2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	12%	12%	2%	1%	8%
Adj. Flow (vph)	196	851	378	70	40	318
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1047	448	0	40	318
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.9	4.9		4.9	
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		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	52.5%
Analysis Period (min)	15
	ICU Level of Service A

HCM Unsignalized Intersection Capacity Analysis
 4: Thomas St & Joymar Dr

2028 FT AM
 03/20/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔↕	↕↔		↕	↕
Traffic Volume (veh/h)	180	783	348	64	37	293
Future Volume (Veh/h)	180	783	348	64	37	293
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	196	851	378	70	40	318
Pedestrians			2		10	
Lane Width (m)			3.7		3.7	
Walking Speed (m/s)			1.1		1.1	
Percent Blockage			0		1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (m)		273	129			
pX, platoon unblocked					0.91	
vC, conflicting volume	458				1242	234
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	458				1072	234
tC, single (s)	4.2				6.8	7.1
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.4
p0 queue free %	82				75	57
cM capacity (veh/h)	1082				160	743
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	SB 2
Volume Total	480	567	252	196	40	318
Volume Left	196	0	0	0	40	0
Volume Right	0	0	0	70	0	318
cSH	1082	1700	1700	1700	160	743
Volume to Capacity	0.18	0.33	0.15	0.12	0.25	0.43
Queue Length 95th (m)	4.6	0.0	0.0	0.0	6.6	15.1
Control Delay (s)	4.9	0.0	0.0	0.0	34.8	13.4
Lane LOS	A				D	B
Approach Delay (s)	2.2		0.0		15.8	
Approach LOS					C	
Intersection Summary						
Average Delay			4.3			
Intersection Capacity Utilization			52.5%		ICU Level of Service	A
Analysis Period (min)			15			



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑↑	
Traffic Volume (vph)	923	20	30	619	42	43
Future Volume (vph)	923	20	30	619	42	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt	0.997				0.932	
Flt Protected				0.998	0.976	
Satd. Flow (prot)	3199	0	0	3158	1713	0
Flt Permitted				0.998	0.976	
Satd. Flow (perm)	3199	0	0	3158	1713	0
Link Speed (k/h)	50			50	40	
Link Distance (m)	108.5			164.8	111.9	
Travel Time (s)	7.8			11.9	10.1	
Confl. Peds. (#/hr)		3	3			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	14%	3%	2%	16%	3%	1%
Adj. Flow (vph)	1003	22	33	673	46	47
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1025	0	0	706	93	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)		14	24		24	14
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	50.9%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
5: HillSide Drive & Thomas St

2028 FT AM
03/20/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↘↘	
Traffic Volume (veh/h)	923	20	30	619	42	43
Future Volume (Veh/h)	923	20	30	619	42	43
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1003	22	33	673	46	47
Pedestrians					3	
Lane Width (m)					3.7	
Walking Speed (m/s)					1.1	
Percent Blockage					0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)	109			294		
pX, platoon unblocked				0.89	0.89	0.89
vC, conflicting volume				1028	1420	516
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol				782	1222	206
tC, single (s)				4.1	6.9	6.9
tC, 2 stage (s)						
tF (s)				2.2	3.5	3.3
p0 queue free %				96	68	93
cM capacity (veh/h)				737	144	713
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	
Volume Total	669	356	257	449	93	
Volume Left	0	0	33	0	46	
Volume Right	0	22	0	0	47	
cSH	1700	1700	737	1700	242	
Volume to Capacity	0.39	0.21	0.04	0.26	0.38	
Queue Length 95th (m)	0.0	0.0	1.0	0.0	12.0	
Control Delay (s)	0.0	0.0	1.8	0.0	28.9	
Lane LOS				A	D	
Approach Delay (s)	0.0		0.6		28.9	
Approach LOS					D	
Intersection Summary						
Average Delay				1.7		
Intersection Capacity Utilization				50.9%	ICU Level of Service	A
Analysis Period (min)				15		

Lanes, Volumes, Timings
6: McFarren Blvd/Gaffney Dr & Thomas St

2028 FT AM
03/20/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↖	↖	↗		↖	↗			↕	
Traffic Volume (vph)	9	837	21	64	581	16	22	5	75	23	11	29
Future Volume (vph)	9	837	21	64	581	16	22	5	75	23	11	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		35.0	30.0		0.0	25.0		0.0	0.0		0.0
Storage Lanes	1		1	1		0	1		0	0		0
Taper Length (m)	30.0			45.0			35.0			2.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.95	0.99	1.00		0.98	0.97			0.98	
Frt			0.850		0.996			0.859			0.937	
Flt Protected	0.950			0.950			0.950				0.982	
Satd. Flow (prot)	1807	3202	1512	1789	3014	0	1807	1562	0	0	1706	0
Flt Permitted	0.405			0.281			0.848				0.844	
Satd. Flow (perm)	763	3202	1433	526	3014	0	1580	1562	0	0	1454	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			71		5			82			32	
Link Speed (k/h)		50			50			40			40	
Link Distance (m)		165.0			108.5			146.4			138.4	
Travel Time (s)		11.9			7.8			13.2			12.5	
Confl. Peds. (#/hr)	11		15	15		11	24		27	27		24
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	14%	8%	2%	21%	2%	1%	2%	2%	2%	2%	2%
Adj. Flow (vph)	10	910	23	70	632	17	24	5	82	25	12	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	10	910	23	70	649	0	24	87	0	0	69	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	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	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	
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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
6: McFarren Blvd/Gaffney Dr & Thomas St

2028 FT AM
03/20/2024

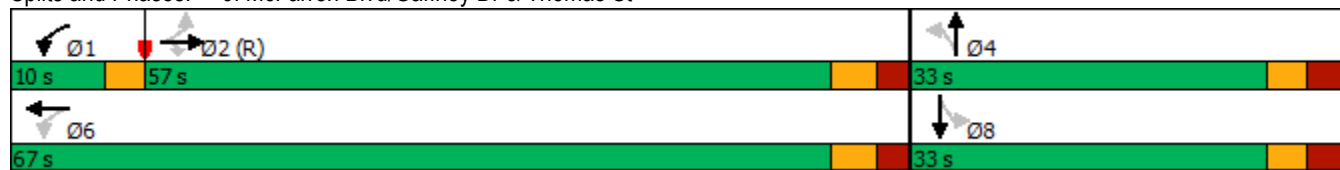


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			4				8
Permitted Phases	2		2	6			4			8		
Detector Phase	2	2	2	1	6		4	4		8		8
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	7.0	10.0		10.0	10.0		10.0		10.0
Minimum Split (s)	29.0	29.0	29.0	10.0	29.0		38.5	38.5		33.0		33.0
Total Split (s)	57.0	57.0	57.0	10.0	67.0		33.0	33.0		33.0		33.0
Total Split (%)	57.0%	57.0%	57.0%	10.0%	67.0%		33.0%	33.0%		33.0%		33.0%
Maximum Green (s)	51.0	51.0	51.0	7.0	61.0		26.5	26.5		26.5		26.5
Yellow Time (s)	3.5	3.5	3.5	3.0	3.5		3.0	3.0		3.0		3.0
All-Red Time (s)	2.5	2.5	2.5	0.0	2.5		3.5	3.5		3.5		3.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0				0.0
Total Lost Time (s)	6.0	6.0	6.0	3.0	6.0		6.5	6.5				6.5
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?	Yes	Yes	Yes	Yes								
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0		3.0
Recall Mode	C-Max	C-Max	C-Max	None	Max		None	None		None		None
Walk Time (s)	10.0	10.0	10.0		10.0		10.0	10.0		10.0		10.0
Flash Dont Walk (s)	13.0	13.0	13.0		13.0		22.0	22.0		22.0		22.0
Pedestrian Calls (#/hr)	0	0	0		0		0	0		0		0
Act Effct Green (s)	73.5	73.5	73.5	83.4	81.6		10.4	10.4				10.4
Actuated g/C Ratio	0.74	0.74	0.74	0.83	0.82		0.10	0.10				0.10
v/c Ratio	0.02	0.39	0.02	0.13	0.26		0.15	0.37				0.38
Control Delay	5.9	7.3	0.0	3.5	4.5		42.6	15.3				31.7
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0				0.0
Total Delay	5.9	7.3	0.0	3.5	4.5		42.6	15.3				31.7
LOS	A	A	A	A	A		D	B				C
Approach Delay		7.1			4.4			21.2				31.7
Approach LOS		A			A			C				C

Intersection Summary

Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	100
Offset:	79 (79%), Referenced to phase 2:EBTL, Start of Green
Natural Cycle:	80
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.39
Intersection Signal Delay:	7.8
Intersection LOS:	A
Intersection Capacity Utilization:	62.7%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 6: McFarren Blvd/Gaffney Dr & Thomas St



Queues
6: McFarren Blvd/Gaffney Dr & Thomas St

2028 FT AM
03/20/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	10	910	23	70	649	24	87	69
v/c Ratio	0.02	0.39	0.02	0.13	0.26	0.15	0.37	0.38
Control Delay	5.9	7.3	0.0	3.5	4.5	42.6	15.3	31.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.9	7.3	0.0	3.5	4.5	42.6	15.3	31.7
Queue Length 50th (m)	0.5	34.5	0.0	2.0	17.1	4.0	0.8	6.2
Queue Length 95th (m)	2.2	48.4	0.0	m6.1	29.0	10.8	13.3	17.9
Internal Link Dist (m)		141.0			84.5		122.4	114.4
Turn Bay Length (m)	30.0		35.0	30.0		25.0		
Base Capacity (vph)	561	2354	1072	527	2459	418	474	408
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	0.02	0.39	0.02	0.13	0.26	0.06	0.18	0.17

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lanes, Volumes, Timings
7: Joymar Dr & Tannery St

2028 FT AM
03/20/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	12	56	42	182	75	116	65	163	92	111	98	25
Future Volume (vph)	12	56	42	182	75	116	65	163	92	111	98	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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												
Frt		0.948			0.958			0.961			0.986	
Flt Protected		0.995			0.976			0.990			0.977	
Satd. Flow (prot)	0	1812	0	0	1756	0	0	1801	0	0	1756	0
Flt Permitted		0.995			0.976			0.990			0.977	
Satd. Flow (perm)	0	1812	0	0	1756	0	0	1801	0	0	1756	0
Link Speed (k/h)		40			40			40			40	
Link Distance (m)		53.6			75.3			145.8			123.6	
Travel Time (s)		4.8			6.8			13.1			11.1	
Confl. Peds. (#/hr)	115		6	6		115	32		5	5		32
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	3%	1%	2%	1%	2%	1%	6%	6%	0%
Adj. Flow (vph)	13	61	46	198	82	126	71	177	100	121	107	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	120	0	0	406	0	0	348	0	0	255	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)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			4.9			4.9			4.9	
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
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	63.0%
ICU Level of Service	B
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
7: Joymar Dr & Tannery St

2028 FT AM
03/20/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	12	56	42	182	75	116	65	163	92	111	98	25
Future Volume (vph)	12	56	42	182	75	116	65	163	92	111	98	25
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	13	61	46	198	82	126	71	177	100	121	107	27

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	120	406	348	255
Volume Left (vph)	13	198	71	121
Volume Right (vph)	46	126	100	27
Hadj (s)	-0.21	-0.05	-0.11	0.12
Departure Headway (s)	6.6	6.0	6.0	6.4
Degree Utilization, x	0.22	0.68	0.58	0.46
Capacity (veh/h)	451	568	556	502
Control Delay (s)	11.4	20.7	17.2	14.8
Approach Delay (s)	11.4	20.7	17.2	14.8
Approach LOS	B	C	C	B

Intersection Summary

Delay	17.3
Level of Service	C
Intersection Capacity Utilization	63.0%
ICU Level of Service	B
Analysis Period (min)	15

Lanes, Volumes, Timings
8: Tannery St & Rutledge Road

2028 FT AM
03/20/2024



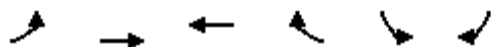
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	10	267	199	36	60	67
Future Volume (vph)	10	267	199	36	60	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.979		0.929	
Flt Protected		0.998			0.977	
Satd. Flow (prot)	0	1763	1787	0	1709	0
Flt Permitted		0.998			0.977	
Satd. Flow (perm)	0	1763	1787	0	1709	0
Link Speed (k/h)		40	40		40	
Link Distance (m)		90.1	107.5		111.8	
Travel Time (s)		8.1	9.7		10.1	
Confl. Peds. (#/hr)	96			96	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	9%	6%	1%	2%	2%
Adj. Flow (vph)	11	290	216	39	65	73
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	301	255	0	138	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.9	4.9		4.9	
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		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	36.5%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
8: Tannery St & Rutledge Road

2028 FT AM
03/20/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↔		↕	
Traffic Volume (veh/h)	10	267	199	36	60	67
Future Volume (Veh/h)	10	267	199	36	60	67
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	290	216	39	65	73
Pedestrians		1	1		96	
Lane Width (m)		3.7	3.7		3.7	
Walking Speed (m/s)		1.1	1.1		1.1	
Percent Blockage		0	0		9	
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	351				644	332
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	351				644	332
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				83	89
cM capacity (veh/h)	1099				393	645
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	301	255	138			
Volume Left	11	0	65			
Volume Right	0	39	73			
cSH	1099	1700	496			
Volume to Capacity	0.01	0.15	0.28			
Queue Length 95th (m)	0.2	0.0	7.9			
Control Delay (s)	0.4	0.0	15.0			
Lane LOS	A		C			
Approach Delay (s)	0.4	0.0	15.0			
Approach LOS			C			
Intersection Summary						
Average Delay			3.2			
Intersection Capacity Utilization			36.5%		ICU Level of Service	A
Analysis Period (min)			15			

Lanes, Volumes, Timings
 9: Broadway St/Crumbie St & Tannery St

2028 FT AM
 03/20/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	33	281	85	19	200	7	58	37	25	15	41	23
Future Volume (vph)	33	281	85	19	200	7	58	37	25	15	41	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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												
Frt		0.971			0.996			0.972			0.961	
Flt Protected		0.996			0.996			0.976			0.991	
Satd. Flow (prot)	0	1785	0	0	1852	0	0	1795	0	0	1806	0
Flt Permitted		0.996			0.996			0.976			0.991	
Satd. Flow (perm)	0	1785	0	0	1852	0	0	1795	0	0	1806	0
Link Speed (k/h)		40			40			40			48	
Link Distance (m)		107.5			52.2			284.3			52.6	
Travel Time (s)		9.7			4.7			25.6			3.9	
Confl. Peds. (#/hr)	43		8	8		43	4		2	2		4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	5%	2%	2%	3%	2%	1%	2%	2%	1%	1%	2%
Adj. Flow (vph)	36	305	92	21	217	8	63	40	27	16	45	25
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	433	0	0	246	0	0	130	0	0	86	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)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
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
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

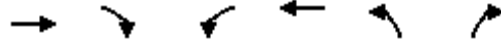
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	48.7%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
 9: Broadway St/Crumbie St & Tannery St

2028 FT AM
 03/20/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	33	281	85	19	200	7	58	37	25	15	41	23
Future Volume (Veh/h)	33	281	85	19	200	7	58	37	25	15	41	23
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	36	305	92	21	217	8	63	40	27	16	45	25
Pedestrians		4			2			8			43	
Lane Width (m)		3.7			3.7			3.7			3.7	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		0			0			1			4	
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	268			405			746	741	361	778	783	268
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	268			405			746	741	361	778	783	268
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			98			76	87	96	93	85	97
cM capacity (veh/h)	1244			1145			260	313	677	243	297	737
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	433	246	130	86								
Volume Left	36	21	63	16								
Volume Right	92	8	27	25								
cSH	1244	1145	317	342								
Volume to Capacity	0.03	0.02	0.41	0.25								
Queue Length 95th (m)	0.6	0.4	13.5	6.8								
Control Delay (s)	0.9	0.9	24.0	19.0								
Lane LOS	A	A	C	C								
Approach Delay (s)	0.9	0.9	24.0	19.0								
Approach LOS			C	C								
Intersection Summary												
Average Delay			6.0									
Intersection Capacity Utilization			48.7%		ICU Level of Service				A			
Analysis Period (min)			15									



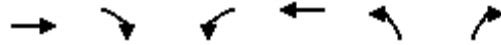
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	53	11	26	146	69	35
Future Volume (vph)	53	11	26	146	69	35
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.977			0.955		
Flt Protected				0.993	0.968	
Satd. Flow (prot)	1840	0	0	1870	1741	0
Flt Permitted				0.993	0.968	
Satd. Flow (perm)	1840	0	0	1870	1741	0
Link Speed (k/h)	40			40	30	
Link Distance (m)	75.3			90.1	71.4	
Travel Time (s)	6.8			8.1	8.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	58	12	28	159	75	38
Shared Lane Traffic (%)						
Lane Group Flow (vph)	70	0	0	187	113	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	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)	14		24	24		14
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	28.4%
Analysis Period (min)	15
	ICU Level of Service A

HCM Unsignalized Intersection Capacity Analysis
 10: Site Access 1 & Tannery St

2028 FT AM
 03/20/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	→			←	↘	↙
Traffic Volume (veh/h)	53	11	26	146	69	35
Future Volume (Veh/h)	53	11	26	146	69	35
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	58	12	28	159	75	38
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			70		279	64
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			70		279	64
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		89	96
cM capacity (veh/h)			1531		698	1000
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	70	187	113			
Volume Left	0	28	75			
Volume Right	12	0	38			
cSH	1700	1531	777			
Volume to Capacity	0.04	0.02	0.15			
Queue Length 95th (m)	0.0	0.4	3.6			
Control Delay (s)	0.0	1.2	10.4			
Lane LOS		A	B			
Approach Delay (s)	0.0	1.2	10.4			
Approach LOS			B			
Intersection Summary						
Average Delay			3.8			
Intersection Capacity Utilization			28.4%	ICU Level of Service	A	
Analysis Period (min)			15			



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	56	51	20	33	6	145
Future Volume (vph)	56	51	20	33	6	145
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.936		0.916			
Flt Protected	0.974					0.998
Satd. Flow (prot)	1717	0	1725	0	0	1880
Flt Permitted	0.974					0.998
Satd. Flow (perm)	1717	0	1725	0	0	1880
Link Speed (k/h)	30		40			40
Link Distance (m)	78.9		166.1			145.8
Travel Time (s)	9.5		14.9			13.1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	61	55	22	36	7	158
Shared Lane Traffic (%)						
Lane Group Flow (vph)	116	0	58	0	0	165
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
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		14	24	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	25.4%
Analysis Period (min)	15
	ICU Level of Service A

HCM Unsignalized Intersection Capacity Analysis
 11: Joymar Dr & Site Access 2

2028 FT AM
 03/20/2024



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	56	51	20	33	6	145
Future Volume (Veh/h)	56	51	20	33	6	145
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)	61	55	22	36	7	158
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None		None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	212	40			58	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	212	40			58	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	92	95			100	
cM capacity (veh/h)	773	1031			1546	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	116	58	165			
Volume Left	61	0	7			
Volume Right	55	36	0			
cSH	877	1700	1546			
Volume to Capacity	0.13	0.03	0.00			
Queue Length 95th (m)	3.2	0.0	0.1			
Control Delay (s)	9.7	0.0	0.3			
Lane LOS	A		A			
Approach Delay (s)	9.7	0.0	0.3			
Approach LOS	A					
Intersection Summary						
Average Delay			3.5			
Intersection Capacity Utilization		25.4%		ICU Level of Service		A
Analysis Period (min)			15			

Lanes, Volumes, Timings
1: Queen st & Thomas St

2028 FT PM
03/20/2024



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	208	187	167	466	429	307
Future Volume (vph)	208	187	167	466	429	307
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0	20.0	35.0			0.0
Storage Lanes	0	0	1			0
Taper Length (m)	0.0		55.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.90	0.89			0.97	
Frt		0.850			0.944	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1789	1585	1772	1865	1718	0
Flt Permitted	0.950		0.272			
Satd. Flow (perm)	1602	1404	507	1865	1718	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		203			67	
Link Speed (k/h)	50			40	40	
Link Distance (m)	168.1			211.1	113.7	
Travel Time (s)	12.1			19.0	10.2	
Confl. Peds. (#/hr)	38	35	47			47
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	3%	3%	3%	2%	2%
Adj. Flow (vph)	226	203	182	507	466	334
Shared Lane Traffic (%)						
Lane Group Flow (vph)	226	203	182	507	800	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)	4.9			4.9	4.9	
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
Number of Detectors	1	1	0	0	0	
Detector Template	Left			Thru	Thru	
Leading Detector (m)	8.5	8.5	0.0	0.0	0.0	
Trailing Detector (m)	-0.2	-0.5	0.0	0.0	0.0	
Detector 1 Position(m)	-0.2	-0.5	-0.5	0.0	0.0	
Detector 1 Size(m)	8.7	9.0	9.0	1.8	1.8	
Detector 1 Type	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	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Turn Type	Perm	Perm	Perm	NA	NA	
Protected Phases				6	2	
Permitted Phases	8	8	6	6	2	
Detector Phase	8	8	6	6	2	
Switch Phase						

Lanes, Volumes, Timings
1: Queen st & Thomas St

2028 FT PM
03/20/2024



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	26.5	26.5	28.5	28.5	28.5	
Total Split (s)	32.0	32.0	78.0	78.0	78.0	
Total Split (%)	29.1%	29.1%	70.9%	70.9%	70.9%	
Maximum Green (s)	26.5	26.5	71.5	71.5	71.5	
Yellow Time (s)	3.5	3.5	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	3.5	3.5	3.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.5	5.5	6.5	6.5	6.5	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	C-Max	C-Max	C-Max	
Walk Time (s)	10.0	10.0	10.0	10.0	10.0	
Flash Dont Walk (s)	10.0	10.0	12.0	12.0	12.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	
Act Effct Green (s)	20.4	20.4	77.6	77.6	77.6	
Actuated g/C Ratio	0.19	0.19	0.71	0.71	0.71	
v/c Ratio	0.76	0.48	0.51	0.39	0.65	
Control Delay	48.2	9.2	15.0	8.3	11.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	48.2	9.2	15.0	8.3	11.9	
LOS	D	A	B	A	B	
Approach Delay	29.8			10.0	11.9	
Approach LOS	C			B	B	

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 58 (53%), Referenced to phase 2:SBT and 6:NBTL, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.76
 Intersection Signal Delay: 15.2
 Intersection LOS: B
 Intersection Capacity Utilization 82.6%
 ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 1: Queen st & Thomas St



Queues

2028 FT PM

1: Queen st & Thomas St

03/20/2024



Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	226	203	182	507	800
v/c Ratio	0.76	0.48	0.51	0.39	0.65
Control Delay	48.2	9.2	15.0	8.3	11.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	48.2	9.2	15.0	8.3	11.9
Queue Length 50th (m)	35.1	10.3	14.7	36.2	69.9
Queue Length 95th (m)	51.6	20.9	39.0	62.6	126.0
Internal Link Dist (m)	144.1			187.1	89.7
Turn Bay Length (m)	20.0	20.0	35.0		
Base Capacity (vph)	385	492	357	1316	1232
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.59	0.41	0.51	0.39	0.65

Intersection Summary

Lanes, Volumes, Timings
2: Thomas St & Broadway St

2028 FT PM
03/20/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕			↕			↕	
Traffic Volume (vph)	117	388	5	0	463	47	4	1	2	25	0	129
Future Volume (vph)	117	388	5	0	463	47	4	1	2	25	0	129
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.999			0.986			0.961			0.887	
Flt Protected		0.989						0.972			0.992	
Satd. Flow (prot)	0	3484	0	0	3497	0	0	1759	0	0	1657	0
Flt Permitted		0.989						0.972			0.992	
Satd. Flow (perm)	0	3484	0	0	3497	0	0	1759	0	0	1657	0
Link Speed (k/h)		50			50			30			40	
Link Distance (m)		125.4			168.1			64.9			284.3	
Travel Time (s)		9.0			12.1			7.8			25.6	
Confl. Peds. (#/hr)	18		30	30		18						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	4%	2%	2%	3%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	127	422	5	0	503	51	4	1	2	27	0	140
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	554	0	0	554	0	0	7	0	0	167	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)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			1.6			4.9	
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
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	48.1%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
2: Thomas St & Broadway St

2028 FT PM
03/20/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔			↔↔			↔			↔	
Traffic Volume (veh/h)	117	388	5	0	463	47	4	1	2	25	0	129
Future Volume (Veh/h)	117	388	5	0	463	47	4	1	2	25	0	129
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	127	422	5	0	503	51	4	1	2	27	0	140
Pedestrians								30			18	
Lane Width (m)								3.7			3.7	
Walking Speed (m/s)								1.1			1.1	
Percent Blockage								3			2	
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)		125			168							
pX, platoon unblocked												
vC, conflicting volume	572			457			1100	1280	244	1014	1258	295
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	572			457			1100	1280	244	1014	1258	295
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	87			100			96	99	100	83	100	80
cM capacity (veh/h)	979			1068			112	136	735	163	141	689
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total	338	216	252	302	7	167						
Volume Left	127	0	0	0	4	27						
Volume Right	0	5	0	51	2	140						
cSH	979	1700	1068	1700	153	453						
Volume to Capacity	0.13	0.13	0.00	0.18	0.05	0.37						
Queue Length 95th (m)	3.1	0.0	0.0	0.0	1.0	11.7						
Control Delay (s)	4.3	0.0	0.0	0.0	29.6	17.5						
Lane LOS	A				D	C						
Approach Delay (s)	2.6		0.0		29.6	17.5						
Approach LOS					D	C						
Intersection Summary												
Average Delay			3.6									
Intersection Capacity Utilization			48.1%		ICU Level of Service				A			
Analysis Period (min)			15									



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗	↖	↘			↕	↗		↕	
Traffic Volume (vph)	6	418	104	44	569	6	283	1	92	3	0	10
Future Volume (vph)	6	418	104	44	569	6	283	1	92	3	0	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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			0.91		1.00			0.99	0.97		0.98	
Frt			0.850		0.998				0.850		0.894	
Flt Protected		0.999		0.950				0.953			0.989	
Satd. Flow (prot)	0	1846	1601	1789	1878	0	0	1761	1601	0	1639	0
Flt Permitted		0.991		0.417				0.717			0.944	
Satd. Flow (perm)	0	1831	1450	785	1878	0	0	1314	1559	0	1561	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)			113								30	
Link Speed (k/h)		50			50			40			30	
Link Distance (m)		129.3			125.4			171.6			40.7	
Travel Time (s)		9.3			9.0			15.4			4.9	
Confl. Peds. (#/hr)	22		22	22		22	4		7	7		4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	4%	2%	2%	2%	2%	4%	2%	2%	2%	2%	2%
Adj. Flow (vph)	7	454	113	48	618	7	308	1	100	3	0	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	461	113	48	625	0	0	309	100	0	14	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			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
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	0	0	1	0		1	1	1	1	1	
Detector Template	Left	Thru	Right		Thru		Left			Left		
Leading Detector (m)	6.1	0.0	0.0	21.8	0.0		6.1	6.0	6.0	6.1	8.8	
Trailing Detector (m)	0.0	0.0	0.0	12.8	0.0		0.0	-3.0	-3.0	0.0	-0.2	
Detector 1 Position(m)	0.0	0.0	0.0	12.8	0.0		0.0	-3.0	-3.0	0.0	-0.2	
Detector 1 Size(m)	6.1	1.8	6.1	9.0	1.8		6.1	9.0	9.0	6.1	9.0	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2			2			4			4	
Permitted Phases	2		2	2			4		4	4		
Detector Phase	2	2	2	2	2		4	4	4	4	4	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0		8.0	8.0	8.0	8.0	8.0	
Minimum Split (s)	25.0	25.0	25.0	25.0	25.0		25.0	25.0	25.0	25.0	25.0	
Total Split (s)	30.0	30.0	30.0	30.0	30.0		80.0	80.0	80.0	80.0	80.0	

Lanes, Volumes, Timings
 3: Streetsville Go Parking Lot/Private Access & Thomas St

2028 FT PM
 03/20/2024



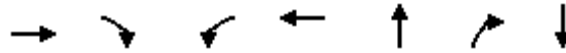
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)	27.3%	27.3%	27.3%	27.3%	27.3%		72.7%	72.7%	72.7%	72.7%	72.7%	
Maximum Green (s)	24.0	24.0	24.0	24.0	24.0		74.0	74.0	74.0	74.0	74.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)		6.0	6.0	6.0	6.0			6.0	6.0		6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max	C-Max	C-Max	C-Max		None	None	None	None	None	
Walk Time (s)	8.0	8.0	8.0	8.0	8.0		8.0	8.0	8.0	8.0	8.0	
Flash Dont Walk (s)	8.0	8.0	8.0	8.0	8.0		8.0	8.0	8.0	8.0	8.0	
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0	0	0	0	
Act Effct Green (s)		62.8	62.8	62.8	62.8			35.2	35.2		35.2	
Actuated g/C Ratio		0.57	0.57	0.57	0.57			0.32	0.32		0.32	
v/c Ratio		0.44	0.13	0.11	0.58			0.74	0.20		0.03	
Control Delay		15.8	2.9	8.8	13.9			42.7	25.3		2.3	
Queue Delay		0.0	0.0	0.0	0.0			0.0	0.0		0.0	
Total Delay		15.8	2.9	8.8	13.9			42.7	25.3		2.3	
LOS		B	A	A	B			D	C		A	
Approach Delay		13.3			13.5			38.5			2.3	
Approach LOS		B			B			D			A	

Intersection Summary

Area Type:	Other
Cycle Length:	110
Actuated Cycle Length:	110
Offset:	10 (9%), Referenced to phase 2:EBWB, Start of Green
Natural Cycle:	60
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.74
Intersection Signal Delay:	19.5
Intersection LOS:	B
Intersection Capacity Utilization:	69.0%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 3: Streetsville Go Parking Lot/Private Access & Thomas St





Lane Group	EBT	EBR	WBL	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	461	113	48	625	309	100	14
v/c Ratio	0.44	0.13	0.11	0.58	0.74	0.20	0.03
Control Delay	15.8	2.9	8.8	13.9	42.7	25.3	2.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.8	2.9	8.8	13.9	42.7	25.3	2.3
Queue Length 50th (m)	47.0	0.0	2.2	68.9	54.5	14.4	0.0
Queue Length 95th (m)	72.4	6.7	m7.3	142.5	66.6	20.7	1.5
Internal Link Dist (m)	105.3			101.4	147.6		16.7
Turn Bay Length (m)							
Base Capacity (vph)	1045	876	448	1072	883	1048	1059
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.13	0.11	0.58	0.35	0.10	0.01

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lanes, Volumes, Timings
4: Thomas St & Joymar Dr

2028 FT PM
03/20/2024



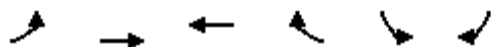
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕↕	↕↕		↘	↘
Traffic Volume (vph)	263	503	793	73	38	221
Future Volume (vph)	263	503	793	73	38	221
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0			0.0	10.0	0.0
Storage Lanes	0			0	1	1
Taper Length (m)	7.6				25.0	
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt			0.987			0.850
Flt Protected		0.983			0.950	
Satd. Flow (prot)	0	3418	3470	0	1789	1601
Flt Permitted		0.983			0.950	
Satd. Flow (perm)	0	3418	3470	0	1789	1601
Link Speed (k/h)		50	50		40	
Link Distance (m)		164.8	129.3		166.1	
Travel Time (s)		11.9	9.3		14.9	
Confl. Peds. (#/hr)	13					
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	6%	4%	2%	2%	2%
Adj. Flow (vph)	286	547	862	79	41	240
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	833	941	0	41	240
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.9	4.9		4.9	
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		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	59.1%
Analysis Period (min)	15
	ICU Level of Service B

HCM Unsignalized Intersection Capacity Analysis
4: Thomas St & Joymar Dr

2028 FT PM
03/20/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕↕	↕↔		↗	↗
Traffic Volume (veh/h)	263	503	793	73	38	221
Future Volume (Veh/h)	263	503	793	73	38	221
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	286	547	862	79	41	240
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)		273	129			
pX, platoon unblocked					0.96	
vC, conflicting volume	954				1760	484
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	954				1704	484
tC, single (s)	4.2				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	59				11	54
cM capacity (veh/h)	701				46	522
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	SB 2
Volume Total	468	365	575	366	41	240
Volume Left	286	0	0	0	41	0
Volume Right	0	0	0	79	0	240
cSH	701	1700	1700	1700	46	522
Volume to Capacity	0.41	0.21	0.34	0.22	0.89	0.46
Queue Length 95th (m)	13.9	0.0	0.0	0.0	25.3	16.7
Control Delay (s)	10.7	0.0	0.0	0.0	236.4	17.6
Lane LOS	B				F	C
Approach Delay (s)	6.0		0.0		49.5	
Approach LOS					E	
Intersection Summary						
Average Delay			9.2			
Intersection Capacity Utilization			59.1%		ICU Level of Service	B
Analysis Period (min)			15			

Lanes, Volumes, Timings
5: HillSide Drive & Thomas St

2028 FT PM
03/20/2024



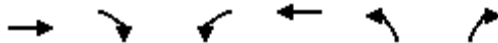
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑↑	
Traffic Volume (vph)	705	53	53	967	32	62
Future Volume (vph)	705	53	53	967	32	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt	0.989				0.911	
Flt Protected				0.997	0.983	
Satd. Flow (prot)	3329	0	0	3440	1692	0
Flt Permitted				0.997	0.983	
Satd. Flow (perm)	3329	0	0	3440	1692	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	108.5			164.8	111.9	
Travel Time (s)	8.1			12.4	8.4	
Confl. Peds. (#/hr)		13	13			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	9%	1%	2%	6%	1%	2%
Adj. Flow (vph)	766	58	58	1051	35	67
Shared Lane Traffic (%)						
Lane Group Flow (vph)	824	0	0	1109	102	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)		97	97		97	97
Sign Control	Free			Free	Stop	

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
5: HillSide Drive & Thomas St

2028 FT PM
03/20/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑↑	
Traffic Volume (veh/h)	705	53	53	967	32	62
Future Volume (Veh/h)	705	53	53	967	32	62
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	766	58	58	1051	35	67
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)	109			294		
pX, platoon unblocked			0.92		0.92	0.92
vC, conflicting volume			837		1450	425
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			660		1323	214
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			93		72	91
cM capacity (veh/h)			843		127	722
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	
Volume Total	511	313	408	701	102	
Volume Left	0	0	58	0	35	
Volume Right	0	58	0	0	67	
cSH	1700	1700	843	1700	276	
Volume to Capacity	0.30	0.18	0.07	0.41	0.37	
Queue Length 95th (m)	0.0	0.0	1.5	0.0	11.4	
Control Delay (s)	0.0	0.0	2.1	0.0	25.5	
Lane LOS	A			D		
Approach Delay (s)	0.0		0.8	25.5		
Approach LOS				D		
Intersection Summary						
Average Delay			1.7			
Intersection Capacity Utilization			65.1%	ICU Level of Service	C	
Analysis Period (min)			15			

Lanes, Volumes, Timings
6: McFarren Blvd/Gaffney Dr & Thomas St

2028 FT PM
03/20/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	31	654	28	96	856	39	24	15	78	21	16	15
Future Volume (vph)	31	654	28	96	856	39	24	15	78	21	16	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		35.0	30.0		0.0	25.0		0.0	0.0		0.0
Storage Lanes	1		1	1		0	1		0	0		0
Taper Length (m)	30.0			45.0			35.0			2.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.94	0.99	1.00		0.99	0.99			0.99	
Frt			0.850		0.994			0.874			0.961	
Flt Protected	0.950			0.950			0.950				0.980	
Satd. Flow (prot)	1789	3349	1617	1789	3392	0	1789	1637	0	0	1764	0
Flt Permitted	0.295			0.354			0.860				0.821	
Satd. Flow (perm)	553	3349	1528	660	3392	0	1609	1637	0	0	1476	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			64		8			85			16	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		165.0			108.5			146.4			138.4	
Travel Time (s)		12.4			8.1			11.0			10.4	
Confl. Peds. (#/hr)	9		15	15		9	7		4	4		7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	9%	1%	2%	7%	2%	2%	2%	1%	2%	2%	2%
Adj. Flow (vph)	34	711	30	104	930	42	26	16	85	23	17	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	34	711	30	104	972	0	26	101	0	0	56	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)	97		97	97		97	97		97	97		97
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	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	
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
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
6: McFarren Blvd/Gaffney Dr & Thomas St

2028 FT PM
03/20/2024

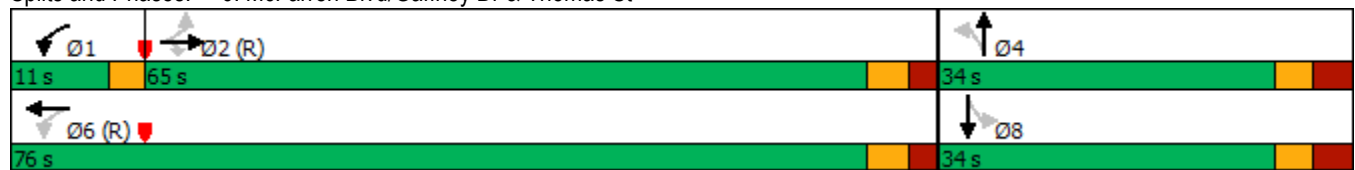


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		2		1	6			4				8
Permitted Phases	2		2	6			4			8		
Detector Phase	2	2	2	1	6		4	4		8		8
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	7.0	10.0		10.0	10.0		10.0		10.0
Minimum Split (s)	29.0	29.0	29.0	10.0	29.0		38.5	38.5		38.5		38.5
Total Split (s)	65.0	65.0	65.0	11.0	76.0		34.0	34.0		34.0		34.0
Total Split (%)	59.1%	59.1%	59.1%	10.0%	69.1%		30.9%	30.9%		30.9%		30.9%
Maximum Green (s)	59.0	59.0	59.0	8.0	70.0		27.5	27.5		27.5		27.5
Yellow Time (s)	3.5	3.5	3.5	3.0	3.5		3.0	3.0		3.0		3.0
All-Red Time (s)	2.5	2.5	2.5	0.0	2.5		3.5	3.5		3.5		3.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0				0.0
Total Lost Time (s)	6.0	6.0	6.0	3.0	6.0		6.5	6.5				6.5
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?	Yes	Yes	Yes	Yes								
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0		3.0
Recall Mode	C-Max	C-Max	C-Max	None	C-Max		None	None		None		None
Walk Time (s)	10.0	10.0	10.0		10.0		10.0	10.0		10.0		10.0
Flash Dont Walk (s)	13.0	13.0	13.0		13.0		22.0	22.0		22.0		22.0
Pedestrian Calls (#/hr)	0	0	0		0		0	0		0		0
Act Effct Green (s)	76.9	76.9	76.9	90.1	87.1		10.4	10.4				10.4
Actuated g/C Ratio	0.70	0.70	0.70	0.82	0.79		0.09	0.09				0.09
v/c Ratio	0.09	0.30	0.03	0.17	0.36		0.17	0.44				0.36
Control Delay	6.3	6.8	0.2	2.0	3.2		48.3	19.8				42.5
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0				0.0
Total Delay	6.3	6.8	0.2	2.0	3.2		48.3	19.8				42.5
LOS	A	A	A	A	A		D	B				D
Approach Delay		6.5			3.1			25.7				42.5
Approach LOS		A			A			C				D

Intersection Summary

Area Type:	Other
Cycle Length:	110
Actuated Cycle Length:	110
Offset:	0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle:	80
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.44
Intersection Signal Delay:	6.9
Intersection LOS:	A
Intersection Capacity Utilization:	62.0%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 6: McFarren Blvd/Gaffney Dr & Thomas St



Queues
6: McFarren Blvd/Gaffney Dr & Thomas St

2028 FT PM
03/20/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	34	711	30	104	972	26	101	56
v/c Ratio	0.09	0.30	0.03	0.17	0.36	0.17	0.44	0.36
Control Delay	6.3	6.8	0.2	2.0	3.2	48.3	19.8	42.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.3	6.8	0.2	2.0	3.2	48.3	19.8	42.5
Queue Length 50th (m)	1.9	24.4	0.0	2.3	20.0	4.8	3.0	7.5
Queue Length 95th (m)	5.4	35.2	0.6	m4.3	26.4	12.5	17.2	18.6
Internal Link Dist (m)		141.0			84.5		122.4	114.4
Turn Bay Length (m)	30.0		35.0	30.0		25.0		
Base Capacity (vph)	386	2341	1087	622	2686	402	473	381
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	0.09	0.30	0.03	0.17	0.36	0.06	0.21	0.15

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lanes, Volumes, Timings
7: Joymar Dr & Tannery St

2028 FT PM
03/20/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	1	1	3	163	1	172	1	142	196	93	123	1
Future Volume (vph)	1	1	3	163	1	172	1	142	196	93	123	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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												
Frt		0.919			0.931			0.922			0.999	
Flt Protected		0.990			0.976						0.979	
Satd. Flow (prot)	0	1714	0	0	1711	0	0	1744	0	0	1868	0
Flt Permitted		0.990			0.976						0.979	
Satd. Flow (perm)	0	1714	0	0	1711	0	0	1744	0	0	1868	0
Link Speed (k/h)		40			40			40			40	
Link Distance (m)		53.6			75.3			145.8			123.6	
Travel Time (s)		4.8			6.8			13.1			11.1	
Confl. Peds. (#/hr)	13		4	4		13	19		3	3		19
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	1%	2%	0%	1%	2%
Adj. Flow (vph)	1	1	3	177	1	187	1	154	213	101	134	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	5	0	0	365	0	0	368	0	0	236	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)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			4.9			4.9			4.9	
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
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	69.2%
ICU Level of Service	C
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
 7: Joymar Dr & Tannery St

2028 FT PM
 03/20/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	1	1	3	163	1	172	1	142	196	93	123	1
Future Volume (vph)	1	1	3	163	1	172	1	142	196	93	123	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	1	3	177	1	187	1	154	213	101	134	1
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	5	365	368	236								
Volume Left (vph)	1	177	1	101								
Volume Right (vph)	3	187	213	1								
Hadj (s)	-0.29	-0.18	-0.32	0.09								
Departure Headway (s)	5.9	5.3	5.0	5.6								
Degree Utilization, x	0.01	0.54	0.51	0.37								
Capacity (veh/h)	482	638	675	601								
Control Delay (s)	9.0	14.3	13.2	11.8								
Approach Delay (s)	9.0	14.3	13.2	11.8								
Approach LOS	A	B	B	B								
Intersection Summary												
Delay			13.2									
Level of Service			B									
Intersection Capacity Utilization			69.2%	ICU Level of Service	C							
Analysis Period (min)			15									

Lanes, Volumes, Timings
8: Tannery St & Rutledge Road

2028 FT PM
03/20/2024



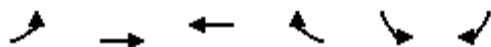
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	
Traffic Volume (vph)	50	132	238	51	21	47
Future Volume (vph)	50	132	238	51	21	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.976		0.907	
Flt Protected		0.986			0.985	
Satd. Flow (prot)	0	1857	1838	0	1683	0
Flt Permitted		0.986			0.985	
Satd. Flow (perm)	0	1857	1838	0	1683	0
Link Speed (k/h)		40	40		40	
Link Distance (m)		90.1	107.5		111.8	
Travel Time (s)		8.1	9.7		10.1	
Confl. Peds. (#/hr)	16			16	2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	143	259	55	23	51
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	197	314	0	74	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.7	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.9	4.9		4.9	
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		Free	Free		Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	39.7%
Analysis Period (min)	15
	ICU Level of Service A

HCM Unsignalized Intersection Capacity Analysis
8: Tannery St & Rutledge Road

2028 FT PM
03/20/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	
Traffic Volume (veh/h)	50	132	238	51	21	47
Future Volume (Veh/h)	50	132	238	51	21	47
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	54	143	259	55	23	51
Pedestrians			2		16	
Lane Width (m)			3.7		3.7	
Walking Speed (m/s)			1.1		1.1	
Percent Blockage			0		2	
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	330				556	302
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	330				556	302
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	96				95	93
cM capacity (veh/h)	1210				462	726
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	197	314	74			
Volume Left	54	0	23			
Volume Right	0	55	51			
cSH	1210	1700	616			
Volume to Capacity	0.04	0.18	0.12			
Queue Length 95th (m)	1.0	0.0	2.8			
Control Delay (s)	2.5	0.0	11.6			
Lane LOS	A		B			
Approach Delay (s)	2.5	0.0	11.6			
Approach LOS			B			
Intersection Summary						
Average Delay			2.3			
Intersection Capacity Utilization			39.7%	ICU Level of Service		A
Analysis Period (min)			15			

Lanes, Volumes, Timings
 9: Broadway St/Crumbie St & Tannery St

2028 FT PM
 03/20/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	41	119	27	28	210	21	51	54	45	14	53	55
Future Volume (vph)	41	119	27	28	210	21	51	54	45	14	53	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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												
Frt		0.981			0.989			0.959			0.939	
Flt Protected		0.989			0.995			0.983			0.994	
Satd. Flow (prot)	0	1827	0	0	1853	0	0	1776	0	0	1758	0
Flt Permitted		0.989			0.995			0.983			0.994	
Satd. Flow (perm)	0	1827	0	0	1853	0	0	1776	0	0	1758	0
Link Speed (k/h)		40			40			40			48	
Link Distance (m)		107.5			52.2			284.3			52.6	
Travel Time (s)		9.7			4.7			25.6			3.9	
Confl. Peds. (#/hr)	10		15	15		10	5		11	11		5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	45	129	29	30	228	23	55	59	49	15	58	60
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	203	0	0	281	0	0	163	0	0	133	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)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
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
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	40.1%
Analysis Period (min)	15
	ICU Level of Service A

HCM Unsignalized Intersection Capacity Analysis
 9: Broadway St/Crumbie St & Tannery St

2028 FT PM
 03/20/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	41	119	27	28	210	21	51	54	45	14	53	55
Future Volume (Veh/h)	41	119	27	28	210	21	51	54	45	14	53	55
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	45	129	29	30	228	23	55	59	49	15	58	60
Pedestrians		5			11			15			10	
Lane Width (m)		3.7			3.7			3.7			3.7	
Walking Speed (m/s)		1.1			1.1			1.1			1.1	
Percent Blockage		0			1			1			1	
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	261			173			642	570	170	632	572	254
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	261			173			642	570	170	632	572	254
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			98			81	85	94	95	85	92
cM capacity (veh/h)	1291			1383			292	398	852	302	396	773
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	203	281	163	133								
Volume Left	45	30	55	15								
Volume Right	29	23	49	60								
cSH	1291	1383	414	486								
Volume to Capacity	0.03	0.02	0.39	0.27								
Queue Length 95th (m)	0.8	0.5	12.9	7.7								
Control Delay (s)	2.0	1.0	19.2	15.2								
Lane LOS	A	A	C	C								
Approach Delay (s)	2.0	1.0	19.2	15.2								
Approach LOS			C	C								
Intersection Summary												
Average Delay			7.5									
Intersection Capacity Utilization			40.1%		ICU Level of Service				A			
Analysis Period (min)			15									



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	122	66	46	116	43	24
Future Volume (vph)	122	66	46	116	43	24
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t	0.953			0.952		
Fl _t Protected				0.986	0.969	
Satd. Flow (prot)	1795	0	0	1857	1737	0
Fl _t Permitted				0.986	0.969	
Satd. Flow (perm)	1795	0	0	1857	1737	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	75.3			90.1	71.4	
Travel Time (s)	5.6			6.8	5.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	133	72	50	126	47	26
Shared Lane Traffic (%)						
Lane Group Flow (vph)	205	0	0	176	73	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	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)	97		97	97		97
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	32.9%
Analysis Period (min)	15
	ICU Level of Service A

HCM Unsignalized Intersection Capacity Analysis
 10: Site Access 1 & Tannery St

2028 FT PM
 03/20/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	→			←	↙	↘
Traffic Volume (veh/h)	122	66	46	116	43	24
Future Volume (Veh/h)	122	66	46	116	43	24
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	133	72	50	126	47	26
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			205		395	169
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			205		395	169
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			96		92	97
cM capacity (veh/h)			1366		588	875
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	205	176	73			
Volume Left	0	50	47			
Volume Right	72	0	26			
cSH	1700	1366	665			
Volume to Capacity	0.12	0.04	0.11			
Queue Length 95th (m)	0.0	0.8	2.6			
Control Delay (s)	0.0	2.4	11.1			
Lane LOS		A	B			
Approach Delay (s)	0.0	2.4	11.1			
Approach LOS			B			
Intersection Summary						
Average Delay			2.7			
Intersection Capacity Utilization			32.9%	ICU Level of Service	A	
Analysis Period (min)			15			



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	26	36	128	69	28	59
Future Volume (vph)	26	36	128	69	28	59
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.921		0.953			
Flt Protected	0.980					0.984
Satd. Flow (prot)	1700	0	1795	0	0	1853
Flt Permitted	0.980					0.984
Satd. Flow (perm)	1700	0	1795	0	0	1853
Link Speed (k/h)	48		48			48
Link Distance (m)	78.9		166.1			145.8
Travel Time (s)	5.9		12.5			10.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	28	39	139	75	30	64
Shared Lane Traffic (%)						
Lane Group Flow (vph)	67	0	214	0	0	94
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
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)	97	97		97	97	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	29.2%
Analysis Period (min)	15
	ICU Level of Service A

HCM Unsignalized Intersection Capacity Analysis
 11: Joymar Dr & Site Access 2

2028 FT PM
 03/20/2024



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	26	36	128	69	28	59
Future Volume (Veh/h)	26	36	128	69	28	59
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)	28	39	139	75	30	64
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	300	176			214	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	300	176			214	
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	95			98	
cM capacity (veh/h)	676	867			1356	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	67	214	94			
Volume Left	28	0	30			
Volume Right	39	75	0			
cSH	775	1700	1356			
Volume to Capacity	0.09	0.13	0.02			
Queue Length 95th (m)	2.0	0.0	0.5			
Control Delay (s)	10.1	0.0	2.6			
Lane LOS	B		A			
Approach Delay (s)	10.1	0.0	2.6			
Approach LOS	B					
Intersection Summary						
Average Delay			2.4			
Intersection Capacity Utilization			29.2%		ICU Level of Service	A
Analysis Period (min)			15			

Appendix O

Signal Warrant

TRAFFIC SIGNAL WARRANTS - JUSTIFICATION 7 (PROJECTED VOLUMES)

GENERAL INFORMATION

FUTURE WEEKDAY PEAK HOUR

Analyst	Aarzo D	Jurisdiction	City of Mississauga
Agency or Company	Crozier	Date	15/03/2024
Analysis Period	2028 Future Total	East-West Street	Thomas Street
Flow Conditions	Restricted flow (urban)	North-South Street	Joymar Drive
'T' Intersection	Yes	Major Street	East-West
Existing Intersection	Yes	Approach lanes per direction	2 Major Street
		Approach lanes per direction	1 Minor Street
Additional Comments			

Justification 1: Minimum Vehicle Volumes

JUSTIFIED

No

Justification	Guidance Approach Lanes				Compliance			120% Satisfied
	1 Lanes		2 or More Lanes		Sectional		Entire %	
Flow Conditions	Free Flow	Restricted Flow	Free Flow	Restricted Flow	Average Hourly Volumes	%		
A. Vehicle volume, all approaches				900	899	67%	67%	No
B. Vehicle volume, along minor streets				170	147	58%	58%	No

Justification 2: Delay To Cross Traffic

JUSTIFIED

No

Justification	Guidance Approach Lanes				Compliance			120% Satisfied
	1 Lanes		2 or More Lanes ¹		Sectional		Entire %	
Flow Conditions	Free Flow	Restricted Flow	Free Flow	Restricted Flow	Average Hourly Volumes	%		
A. Vehicle volume, major street				900	752	56%	56%	No
B. Combined vehicle and pedestrian volume crossing artery from minor streets				170	52	20%	20%	No

CONCLUSION

The results of the calculations show that justifications are **not met**.

Therefore traffic control signal is **not justified at this intersection for the horizon year 2028 Future Total**

Appendix P

City of Mississauga Zoning By-Law Excerpts

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3.1.1.12 Electric Vehicle Ready Parking Spaces

3.1.1.12.1 **Electric vehicle ready parking spaces** shall be provided in accordance with Table 3.1.1.12 - Minimum Required Number of Electric Vehicle Ready Parking Spaces. (0117-2022)

Table 3.1.1.12 - Minimum Required Number of Electric Vehicle Ready Parking Spaces

Column A		B
Line 1.0	TYPE OF USE	MINIMUM NUMBER OF REQUIRED ELECTRIC VEHICLE READY PARKING SPACES
2.0	Detached Dwelling, Linked Dwelling, Semi-Detached, Street Townhouse, Duplex, Triplex, Back to Back and Stacked Townhouse	1.0 of the required parking spaces with an exclusive use garage
3.0	Condominium and Rental Apartment , resident parking	20% of the total required parking spaces or 1.0 space, whichever is greater
4.0	Condominium and Rental Apartment , visitor parking	10% of the total required parking spaces or 1.0 space, whichever is greater
5.0	Back to back and stacked townhouse , without exclusive use garage and/or driveway	20% of the total required parking spaces or 1.0 space, whichever is greater
6.0	Non-residential uses identified in Table 3.1.2.2 of this By-law, with a parking structure with 10 or more parking spaces	10% of the total required parking spaces or 1.0 space, whichever is greater

3.1.1.12.2 Notwithstanding Sentence 3.1.1.12.1 of this By-law, required **electric vehicle ready parking spaces** shall only be required for the construction of new **buildings**, or portions thereof, effective June 8, 2023.

3.1.1.12.3 Notwithstanding Sentence 3.1.1.12.1 of this By-law, **electric vehicle ready parking spaces** shall not be required for **transitional housing**.

3.1.1.12.4 Notwithstanding Sentence 3.1.1.12.2 of this By-law, **electric vehicle ready parking spaces** shall not be required for any additions to an **existing building** that adds three or less **dwelling units**.

3.1.2 Required Number of Parking Spaces

3.1.2.1 Required Number of Parking Spaces for Residential Uses

3.1.2.1.1 Off-street **parking spaces** for residential **uses** shall be provided in accordance with Table 3.1.2.1 - Required Number of Off-Street Parking Spaces for Residential Uses. (0117-2022)

Table 3.1.2.1 - Required Number of Off-Street Parking Spaces for Residential Uses
(0207-2008), (0297-2013), (0174-2017), (0179-2018), (0181-2018/LPAT Order 2019 February 15), (0111-2019/LPAT Order 2021 March 09), (0018-2021), (0117-2022), (0213-2022)

Column A		B	C	D	E	F
Line 1.0	TYPE OF USE	UNIT OF MEASUREMENT	PRECINCT 1	PRECINCT 2	PRECINCT 3	PRECINCT 4
2.0	Condominium Apartment	resident spaces per unit	0.8	0.9	1.0	1.1
		visitor spaces per unit	0.2	0.2	0.2	0.2
3.0	Rental Apartment	resident spaces per unit	0.8	0.8	0.9	1.0
		visitor spaces per unit	0.2	0.2	0.2	0.2
4.0	Public authority dwelling unit or dwelling unit provided by a non-profit housing provider in a rental apartment	resident spaces per unit	0.4	0.6	0.65	0.7
		visitor spaces per unit	0.2	0.2	0.2	0.2
5.0	Apartment (within CC1 to CC4 zones)	0.8 resident spaces per unit 0.15 visitor spaces per unit ⁽¹⁾				
6.0	Detached Dwelling, Linked Dwelling, Semi-Detached, Street Townhouse	spaces per unit	2.0	2.0	2.0	2.0
7.0	Condominium Detached Dwelling, Condominium Semi-Detached, Condominium Townhouse, Detached Dwelling on a CEC - Road, Semi-Detached on a CEC - Road, Townhouse on a CEC - Road	resident spaces per unit	2.0	2.0	2.0	2.0
		visitor spaces per unit	0.25	0.25	0.25	0.25
8.0	Duplex, Triplex	spaces per unit	1.25	1.25	1.25	1.25
9.0	Dwelling units located above a commercial development with a maximum height of three storeys	spaces per unit	1.0	1.0	1.0	1.0
10.0	Group Home	spaces per unit	2.0	2.0	2.0	2.0
11.0	Back to Back and Stacked Townhouse without exclusive use garage and driveway	resident spaces per unit	1.0	1.1	1.3	1.5
		visitor spaces per unit	0.25	0.25	0.25	0.25

Table 3.1.2.1 continued on next page

Column	A	B	C	D	E	F
Line 1.0	TYPE OF USE	UNIT OF MEASUREMENT	PRECINCT 1	PRECINCT 2	PRECINCT 3	PRECINCT 4
Table 3.1.2.1 continued from previous page						
12.0	Back to Back and Stacked Townhouse with exclusive use garage and driveway	resident spaces per unit	2.0	2.0	2.0	2.0
		visitor spaces per unit	0.25	0.25	0.25	0.25
13.0	Long-Term Care Building	spaces per bed	0.33	0.33	0.33	0.33
14.0	Retirement Building	spaces per unit	0.5	0.5	0.5	0.5
15.0	Public authority dwelling unit or dwelling unit provided by a non-profit housing provider in a retirement building	spaces per unit	0.25	0.35	0.35	0.35
16.0	Transitional Housing	spaces per unit or sleeping rooms, whichever is greater	0.1	0.1	0.1	0.1
17.0	All other housing forms not identified above with more than two dwelling units	resident spaces per unit	2.0	2.0	2.0	2.0
		visitor spaces per unit	0.25	0.25	0.25	0.25

NOTES: (1) See Sentence 3.1.2.1.2 of this By-law.
(2) *deleted by 0117-2022*

3.1.2.1.2 Visitor **parking spaces** shall not be required for an **apartment** legally **existing** within CC1 to CC4 zones for which a building permit has been issued on or before May 29, 2009. *(0207-2008), (0174-2017), (0018-2021), (0117-2022)*

3.1.2.1.3 Shared Arrangement for Residential Visitor and Non-Residential Parking Component

For the purpose of Article 3.1.2.1 of this By-law, a shared parking arrangement may be used for the calculation of required residential visitor/non-residential parking in accordance with the following:
(0117-2022)

the greater of

- (1) Visitor spaces per unit in accordance with applicable regulations contained in Table 3.1.2.1 of this By-law;
- or
- (2) Parking required for all non-residential **uses**, located in the same **building** or on the same **lot** as the residential **use**, except **banquet hall/conference centre/convention centre, entertainment establishment, overnight accommodation, place of religious assembly, recreational establishment and restaurant over 220 m² GFA - non-residential.**

Parking for **banquet hall/conference centre/convention centre, entertainment establishment, overnight accommodation, place of religious assembly, recreational establishment and restaurant over 220 m² GFA - non-residential** shall not be included in the above shared parking arrangement and shall be provided in accordance with applicable regulations contained in Table 3.1.2.2 of this By-law.

3.1.2.1.4 Notwithstanding the regulations contained in Table 3.1.2.1 of this By-law, the required number of off-street **parking spaces** for **dwelling units** that are **affordable ownership housing units** or **affordable rental housing units** located within the Inclusionary Zoning Overlay Area boundaries identified on Schedule B of Part 13 of this By-law shall be subject to a parking rate of:
(0213-2022)

- (1) Precinct 1: 50% of the required number of **parking spaces** for the corresponding residential **uses** as otherwise required pursuant to this By-law;
- (2) Precincts 2, 3 and 4: 70% of the required number of **parking spaces** for the corresponding residential **use** as otherwise required pursuant to this By-law.

3.1.2.2 Required Number of Parking Spaces for Non-Residential Uses

Off-street **parking spaces** for non-residential **uses** shall be provided in accordance with Table 3.1.2.2. - Required Number of Off-Street Parking Spaces for Non-Residential Uses. (0117-2022)

Table 3.1.2.2 - Required Number of Off-Street Parking Spaces for Non-Residential Uses
(0358-2007), (0207-2008), (0325-2008), (0379-2009), (0308-2011), (0190-2014), (0050-2013/LPAT Order 2020 June 08), (0018-2015), (0055-2015), (0212-2015), (0111-2019/LPAT Order 2021 March 09), (0018-2021), (0117-2022)

Column A		B	C	D	E	F
Line 1.0	TYPE OF USE	UNIT OF MEASUREMENT	PRECINCT 1	PRECINCT 2	PRECINCT 3	PRECINCT 4
2.0	Active Recreational Use	spaces per 100 m ² GFA - non-residential, except for an arena or a marina	4.5	4.5	4.5	4.5
3.0	Adult Entertainment Establishment	spaces per 100 m ² GFA - non-residential	16.3	16.3	16.3	16.3
4.0	Animal Services:					
4.1	Animal Boarding Establishment	spaces per 100 m ² GFA - non-residential	3.0	3.0	3.6	3.6
4.2	Animal Care Establishment	spaces per 100 m ² GFA - non-residential	3.0	3.0	4.0	5.0
5.0	Arena	space per four seats of permanent fixed seating ⁽¹⁾	1.0	1.0	1.0	1.0
6.0	Art Gallery, Museum	spaces per 100 m ² GFA - non-residential	3.0	3.0	3.6	3.6
7.0	Banquet Hall/ Conference Centre/ Convention Centre	spaces per 100 m ² GFA - non-residential	10.8	10.8	10.8	10.8
8.0	Commercial School	spaces per 100 m ² GFA - non-residential	5.0	5.0	5.0	5.0
9.0	Community Centre	spaces per 100 m ² GFA - non-residential, except for an arena	4.5	4.5	4.5	4.5
10.0	Composting Facility	spaces per 100 m ² GFA - non-residential up to 2 325 m ² GFA - non-residential;	1.6	1.6	1.6	1.6
		and				
		spaces per 100 m ² GFA - non-residential between 2 325 m ² and 9 300 m ² GFA - non-residential;	1.1	1.1	1.1	1.1
		and				
		spaces per 100 m ² GFA - non-residential over 9 300 m ² GFA - non-residential.	0.6	0.6	0.6	0.6

Table 3.1.2.2 continued on next page

Part 3 - Parking, Loading and Stacking Lane Regulations

Column A		B	C	D	E	F
Line 1.0	TYPE OF USE	UNIT OF MEASUREMENT	PRECINCT 1	PRECINCT 2	PRECINCT 3	PRECINCT 4
Table 3.1.2.2 continued from previous page						
34.0	Office:					
34.1	Office ⁽⁶⁾	spaces per 100 m ² GFA - non-residential	2.0	2.5	2.8	3.0
		Where the non-office uses, including medical office , in an office building , are greater than 10% of the total GFA - non-residential of the office building , separate parking will be required for all of such uses in accordance with the regulations contained in Table 3.1.2.2 of this By-law.				
34.2	Medical Office, Medical Office - Restricted	spaces per 100 m ² GFA - non-residential	3.8	4.0	4.5	5.5
35.0	Overnight Accommodation	space per guest room;	0.8	0.8	0.8	0.8
		plus spaces per 100 m ² GFA - non-residential used for public use areas including meeting rooms, conference rooms, recreational facilities, dining and lounge areas and other commercial facilities, but excluding bedrooms, kitchens, laundry rooms, washrooms, lobbies, hallways, elevators, stairways and recreational facilities directly related to the function of the overnight accommodation .	10.0	10.0	10.0	10.0
36.0	Pilot Plant, Prototype Production Facility	spaces per 100 m ² GFA - non-residential up to 2 325 m ² GFA - non-residential ;	1.6	1.6	1.6	1.6
		and spaces per 100 m ² GFA - non-residential between 2 325 m ² and 9 300 m ² GFA - non-residential ;	1.1	1.1	1.1	1.1
		and spaces per 100 m ² GFA - non-residential over 9 300 m ² GFA - non-residential .	0.6	0.6	0.6	0.6

Table 3.1.2.2 continued on next page

Part 3 - Parking, Loading and Stacking Lane Regulations

Column A		B	C	D	E	F
Line 1.0	TYPE OF USE	UNIT OF MEASUREMENT	PRECINCT 1	PRECINCT 2	PRECINCT 3	PRECINCT 4
Table 3.1.2.2 continued from previous page						
37.0	Place of Religious Assembly	space per 4.5 seats for permanent fixed seating ⁽¹⁾ ;	1.0	1.0	1.0	1.0
		plus				
		spaces for any non-fixed moveable seating per 100 m ² GFA - non-residential , all in the worship area ;	27.1	27.1	27.1	27.1
		or				
		spaces for all non-fixed moveable seating per 100 m ² GFA - non-residential , in the worship area ;	27.1	27.1	27.1	27.1
or						
		spaces per 100 m ² GFA - non-residential , whichever is greater.	10.0	10.0	10.0	10.0
<p>Where the worship area of a place of religious assembly includes permanent fixed seating or non-fixed moveable seating for clergy, leaders, choirs, or musicians, such seating or area shall be included in the calculation of seating for the purpose of calculating required parking.</p> <p>Where a community/multi-use hall is equal to or less than the gross floor area of the worship area, no additional parking shall be required for that use.</p>						
38.0	Power Generating Facility	space per staff on duty with a minimum of 2.0 spaces	1.0	1.0	1.0	1.0
39.0	Private Club	spaces per 100 m ² GFA - non-residential	4.5	4.5	4.5	4.5
40.0	Recreational Establishment	spaces per 100 m ² GFA - non-residential , except for an arena	4.5	4.5	4.5	4.5
41.0	Repair Establishment	spaces per 100 m ² GFA - non-residential	3.0	3.0	4.0	5.0
42.0	Retail Centre:					
42.1	Retail Centre (Less than or equal to 2 000 m ² GFA - non-residential)	spaces per 100 m ² GFA - non-residential	3.0	3.0	3.5	4.3
		Parking for restaurant and convenience restaurant over 220 m ² GFA - non-residential , place of religious assembly , funeral establishment , overnight accommodation , banquet hall/ conference centre/convention centre and entertainment establishment uses will be provided in accordance with the applicable regulations contained in Table 3.1.2.2 of this By-law.				
42.2	Retail Centre (Greater than 2 000 m ² GFA - non-residential)	spaces per 100 m ² GFA - non-residential	3.8	3.8	4.5	5.4

Table 3.1.2.2 continued on next page

Part 3 - Parking, Loading and Stacking Lane Regulations

Column A		B	C	D	E	F
Line 1.0	TYPE OF USE	UNIT OF MEASUREMENT	PRECINCT 1	PRECINCT 2	PRECINCT 3	PRECINCT 4
Table 3.1.2.2 continued from previous page						
43.0	Retail Store	spaces per 100 m ² GFA - non-residential	3.0	3.0	4.0	5.0
44.0	Restaurants:					
44.1	Convenience Restaurant	spaces per 100 m ² GFA - non-residential				
		Less than or equal to 220 m ² GFA - non-residential	3.0	3.0	4.0	5.0
		Over 220 m ² GFA - non-residential plus a stacking lane ⁽²⁾	6.0	6.0	9.0	9.0
44.2	Restaurant	spaces per 100 m ² GFA - non-residential				
		Less than or equal to 220 m ² GFA - non-residential	3.0	3.0	4.0	5.0
		Over 220 m ² GFA - non-residential	6.0	6.0	9.0	9.0
44.3	Take-out Restaurant	spaces per 100 m ² GFA - non-residential	3.0	3.0	4.0	5.0
45.0	Schools:					
45.1	College, University	spaces per 100 m ² GFA - non-residential used for academic purposes;	1.1	1.1	1.1	1.1
		plus spaces per resident student and/or staff.	0.15	0.15	0.15	0.15
45.2	Public/Private School (up to and including Grade 8)	space per 100 m ² GFA - non-residential (excluding portables)	1.0	1.0	1.0	1.0
		plus spaces per portable classroom ⁽³⁾	1.0	1.0	1.0	1.0
45.3	Public/Private School (Grade 9 and above)	spaces per 100 m ² GFA - non-residential (excluding portables)	1.5	1.5	1.5	1.5
		plus spaces per portable classroom ⁽³⁾	1.0	1.0	1.0	1.0
46.0	Science and Technology Facility	spaces per 100 m ² GFA - non-residential	2.0	2.5	2.8	3.0
47.0	Self Storage Facility	spaces per 100 m ² GFA - non-residential (exclusive of storage parking)	0.25	0.25	0.25	0.25

Table 3.1.2.2 continued on next page

3.1.2.2.3 For the purpose of Article 3.1.2.2 of this By-law, a **warehouse/distribution facility, wholesaling facility** (multiple-occupancy **building**) is a **building(s)** occupied by more than one occupant located on one **lot**, where the primary function of all occupants is warehousing, distribution or wholesaling. (0379-2009), (0018-2021)

3.1.2.2.4 For the purpose of Article 3.1.2.2 of this By-law, where a single occupant **office building** includes a **manufacturing, warehouse/distribution and/or wholesaling facility** component and the **GFA - non-residential** of the **manufacturing, warehouse/distribution and/or wholesaling facility** component is greater than 10% of the total **GFA - non-residential** of the **building**, parking for the **manufacturing, warehouse/distribution and/or wholesaling facility** component shall be calculated in accordance with the applicable **manufacturing, warehouse/distribution and/or wholesaling facility** (single occupancy) regulations contained in Table 3.1.2.2 of this By-law. (0308-2011), (0018-2021)

3.1.2.3 C4 Zone Parking Requirement

For the purpose of Article 3.1.2.2 of this By-law, off-street **parking spaces** for non-residential **uses** in C4 zones shall be provided in accordance with Precinct 1 requirements in Table 3.1.2.2 of this By-law. (0117-2022)

3.1.2.4 Mixed Use Development Shared Parking

A shared parking formula may be used for the calculation of required parking for a mixed use development. A mixed use development means the following: (0379-2009), (0174-2017), (0018-2021), (0117-2022)

- (1) Non-office **uses** in an **office or medical office building** or group of **buildings** on the same **lot**;
- (2) **Office or medical office** space in a **building** or group of **buildings** on the same **lot** primarily occupied by retail **uses**;
- (3) A **building** or group of **buildings** on the same **lot** containing a mix of **office or medical office, commercial uses and dwelling units**;
- (4) Non-residential **uses** in an **apartment**.

Shared parking is to be calculated in compliance with Table 3.1.2.4 - Mixed Use Development Shared Parking Formula.

The initial step in determining required parking for a mixed use development is to calculate the parking requirement for each **use** in the development as if these **uses** were free-standing **buildings**. The parking requirement for each **use** is then multiplied by the percent of the peak period for each time period (i.e. noon), contained in Table 3.1.2.4 - Mixed Use Development Shared Parking Formula. Each column is totalled for weekday and weekend. The highest figure obtained from all time periods shall become the required parking for the mixed use development.

Table 3.1.2.4 - Mixed Use Development Shared Parking Formula ⁽²⁾
(0379-2009), (0111-2019/LPAT Order 2021 March 09), (0018-2021), (0117-2022)

Column	A	B	C	D	E
Line 1.0	TYPE OF USE	PERCENTAGE OF PEAK PERIOD (WEEKDAY)			
		Morning	Noon	Afternoon	Evening
1.1	Office/Medical Office/Financial Institution	100	90	95	10
1.2	Retail Centre/ Retail Store/Service Establishment	80	90	90	90
1.3	Restaurant/ Convenience Restaurant/ Take-out Restaurant	20	100	30	100
1.4	Overnight Accommodation	70	70	70	100
1.5	Residential - Resident ⁽¹⁾	90	65	90	100
	Residential - Visitor	20	20	60	100

Table 3.1.2.4 continued on next page

Column	A	B	C	D	E
Line 1.0	TYPE OF USE	PERCENTAGE OF PEAK PERIOD (WEEKDAY)			
Table 3.1.2.4 continued from previous page					
2.0	TYPE OF USE	PERCENTAGE OF PEAK PERIOD (SATURDAY)			
		Morning	Noon	Afternoon	Evening
2.1	Office/Medical Office/Financial Institution	10	10	10	10
2.2	Retail Centre/ Retail Store/Service Establishment	80	100	100	70
2.3	Restaurant/ Convenience Restaurant/ Take-out Restaurant	20	100	50	100
2.4	Overnight Accommodation	70	70	70	100
2.5	Residential - Resident ⁽¹⁾ Residential - Visitor	90 20	65 20	90 60	100 100

NOTES: (1) See Sentence 3.1.2.4.1 of this By-law.
 (2) See Sentence 3.1.1.1.7 of this By-law.

3.1.2.4.1 For the purpose of Article 3.1.2.4 of this By-law, the calculation for residential **uses** shall exclude **retirement buildings** and **long-term care buildings**. (0174-2017), (0111-2019/ LPAT Order 2021 March 09), (0117-2022)

3.1.3 Accessible Parking Spaces

3.1.3.1 Required Number of Accessible Parking Spaces

3.1.3.1A **Accessible parking spaces** for non-residential **uses** shall be provided in compliance with Table 3.1.3.1 - Accessible Parking Regulations. (0144-2016)

3.1.3.1B **Accessible parking spaces** for residential **uses** shall only apply to the total number of visitor **parking spaces** required and shall be provided in compliance with Table 3.1.3.1 - Accessible Parking Regulations. (0144-2016)

Table 3.1.3.1 - Accessible Parking Regulations
 (0190-2014), (0144-2016), (0018-2021)

Column	A	B	C
Line 1.0	TOTAL NUMBER OF REQUIRED NON-RESIDENTIAL PARKING SPACES	TOTAL NUMBER OF REQUIRED VISITOR PARKING SPACES	MINIMUM NUMBER OF REQUIRED ACCESSIBLE PARKING SPACES
2.0	1-12	1-12	1.0 space ⁽¹⁾
3.0	13-100	13-100	4% of the total ⁽¹⁾⁽²⁾
4.0	101-200	101-200	1.0 space plus 3% of the total ⁽²⁾
5.0	201-1 000	201-1 000	2.0 spaces plus 2% of the total ⁽²⁾
6.0	1 001 and greater	1 001 and greater	11.0 spaces plus 1% of the total ⁽²⁾

NOTES: (1) See Sentence 3.1.3.1.1 of this By-law.
 (2) See Sentence 3.1.3.1.2 of this By-law.
 (3) *deleted by 0018-2021.*

3.1.3.1.1 Where only one **accessible parking space** is required, a Type A **accessible parking space** shall be provided. (0018-2021)

3.1.3.1.2 Where more than one **accessible parking space** is required:
(0018-2021)

- (1) if an even number of **accessible parking spaces** is required, an equal number of Type A and Type B **accessible parking spaces** must be provided;
- (2) if an odd number of **accessible parking spaces** is required, an equal number of Type A and Type B **accessible parking spaces** must be provided and the odd space may be a Type B **accessible parking space**.

See Illustration No. 15 - Section 1.3 - Illustrations

3.1.3.1.3 Where a shared parking arrangement is used for the calculation of required visitor/ non-residential parking, the required **accessible parking space** requirement will be calculated on either the visitor component or non-residential component. (0144-2016), (0018-2021)

3.1.3.2 Location of Accessible Parking Spaces

Accessible parking spaces shall be provided and maintained on the same **lot** in proximity to the main entrances to a **building** or **structure**.

3.1.3.3 *deleted by 0117-2022*

3.1.4 Loading Regulations

3.1.4.1 Loading Space Regulations

Loading spaces shall be required for the following **uses**:

- (1) **Retail Store**
- (2) Retail Centre (0379-2009)
- (3) **Office**
- (4) **Medical Office**
- (5) **Overnight Accommodation**
- (6) **Restaurant**
- (7) **Convenience Restaurant**
- (8) **Manufacturing Facility**
- (9) **Warehouse/Distribution Facility**
- (10) **Wholesaling Facility**

3.1.4.2 Required Number of Loading Spaces for Office and/or Medical Office Buildings

Where required for **office** and/or **medical office uses**, **loading spaces** shall be provided in accordance with Table 3.1.4.2 - Required Number of Loading Spaces for Office and/or Medical Office Buildings.

Table 3.1.4.2 - Required Number of Loading Spaces for Office and/or Medical Office Buildings
(0297-2013)

Column A		Column B
Line	GROSS FLOOR AREA - NON-RESIDENTIAL OF BUILDING	MINIMUM NUMBER OF OFF - STREET LOADING SPACES
1.0	Less than or equal to 2 350 m ²	None Required
2.0	Greater than 2 350 m ² but less than or equal to 11 600 m ²	1.0 space
3.0	Greater than 11 600 m ²	1.0 space plus 1.0 additional space for each 9 300 m ² gross floor area - non-residential or portion thereof
4.0		

3.1.5.1.3 A **stacking lane** associated with a **financial institution** shall be measured from a point located 2.0 m beyond the middle of the drive-through bank machine.

3.1.5.1.4 A **stacking lane** associated with a **motor vehicle wash facility - commercial motor vehicle** or **motor vehicle wash facility - restricted** shall be measured from the entrance to the wash bay. (0379-2009)

3.1.6 Bicycle Parking Regulations (0118-2022)

3.1.6.1 General Bicycle Parking Regulations

3.1.6.1.1 Notwithstanding Articles 3.1.6.5 and 3.1.6.6 of this By-law, required off-street **bicycle parking spaces** shall only be required for the construction of new **buildings** or portions thereof, effective June 8, 2023.

3.1.6.1.2 Notwithstanding Article 3.1.6.5 of this By-law, **bicycle parking spaces** shall not be required for residential **uses** with less than 20 **dwelling units**.

3.1.6.1.3 Notwithstanding Article 3.1.6.6 of this By-law, **bicycle parking spaces** shall not be required for non-residential **uses** with less than 1 000 m² of **gross floor area - non-residential**.

3.1.6.2 Location of Bicycle Parking

3.1.6.2.1 A **bicycle parking space** shall be located on the same **lot** as the **use** for which it is required.

3.1.6.2.2 Required **bicycle parking spaces** shall not be located in a **dwelling unit**, storage locker or on a **balcony**.

3.1.6.3 Bicycle Parking Space Dimensions

3.1.6.3.1 A **bicycle parking space** is to be provided in either the following sizes:

- (1) minimum length of 1.8 m, a minimum width of 0.6 m, and a minimum vertical clearance from the ground of 1.9 m; or,
- (2) minimum clearance from the wall of 1.2 m, minimum width of 0.6 m, and a minimum vertical clearance from the ground of 1.9 m.

See Illustration No. 18 - Section 1.3 Illustrations

3.1.6.3.2 Notwithstanding Sentence 3.1.6.3.1 of this By-law, a **bicycle parking space - stacked** shall have a minimum vertical clearance of 1.2 m.

3.1.6.4 Bicycle Parking Aisles

3.1.6.4.1 The minimum **bicycle parking aisle** width shall be 1.5 m.

3.1.6.4.2 Access to and from **bicycle parking spaces** shall be provided by unobstructed on-site **driveways** or **bicycle parking aisles**.

3.1.6.5 Required Number of Bicycle Parking Spaces

3.1.6.5.1 Required Number of Bicycle Parking Spaces for Residential Uses

Off-street **bicycle parking spaces** for residential **uses** shall be provided in accordance with Table 3.1.6.5.1 - Required Number of Bicycle Parking Spaces for Residential Uses.

Table 3.1.6.5.1 - Required Number of Bicycle Parking Spaces for Residential Uses

Column A		B	C
Line 1.0	TYPE OF USE	BICYCLE PARKING - CLASS A	BICYCLE PARKING - CLASS B
2.0	Apartment and stacked townhouse without exclusive garages	0.6 spaces per unit	The greater of 0.05 spaces per unit or 6.0 spaces
3.0	Apartment and stacked townhouse without exclusive garages (within CC1 to CC4 and CCO zones)	0.8 spaces per unit	The greater of 0.1 spaces per unit or 6.0 spaces
4.0	Long-Term Care Building	0.2 spaces per 100 m ² GFA - residential	0.2 spaces per 100 m ² GFA - residential
5.0	Long-Term Care Building (within CC1 to CC4 and CCO zones)	0.3 spaces per 100 m ² GFA - residential	0.3 spaces per 100 m ² GFA - residential
6.0	Retirement Building	0.3 spaces per unit	The greater of 0.03 spaces per unit or 6.0 spaces
7.0	Retirement Building (within CC1 to CC4 and CCO zones)	0.4 spaces per unit	The greater of 0.05 spaces per unit or 6.0 spaces

3.1.6.6 Required Number of Bicycle Parking Spaces for Non-Residential Uses

Off-street **bicycle parking spaces** for non-residential **uses** shall be provided in accordance with Table 3.1.6.6 - Required Number of Bicycle Parking Spaces for Non-Residential Uses.

Table 3.1.6.6 - Required Number of Bicycle Parking Spaces for Non-Residential Uses

Column A		B	C
Line 1.0	TYPE OF USE	BICYCLE PARKING - CLASS A	BICYCLE PARKING - CLASS B
2.0	Active Recreational Use, Community Centre, Hospital, Library, Place of Religious Assembly, and Recreational Establishment	0.1 spaces per 100 m ² GFA - non-residential	0.1 spaces per 100 m ² GFA - non-residential
3.0	Active Recreational Use, Community Centre, Hospital, Library, Place of Religious Assembly, and Recreational Establishment (within CC1 to CC4 and CCO zones)	0.3 spaces per 100 m ² GFA - non-residential	0.3 spaces per 100 m ² GFA - non-residential

Table 3.1.6.6 continued on next page

Part 3 - Parking, Loading and Stacking Lane Regulations

Column A		B	C
Line 1.0	TYPE OF USE	BICYCLE PARKING - CLASS A	BICYCLE PARKING - CLASS B
Table 3.1.6.6 continued from previous page			
4.0	College, University	1.0 spaces per 100 m ² GFA - non-residential	1.2 spaces per 100 m ² GFA - non-residential
5.0	College, University (within CC1 to CC4 and CCO zones)	1.0 spaces per 100 m ² GFA - non-residential	1.2 spaces per 100 m ² GFA - non-residential
6.0	Contractor's Yard, Essential Emergency Service, Power Generating Facility, Self Storage Facility, Utilities (Electric Transformer and Distribution Facility, Sewage Treatment Plant, Utility Building, Water Treatment Facility) and Waste Transfer Station	n/a	2.0 spaces
7.0	Education and Training Facility, Financial Institution, Manufacturing Facility, Science and Technology Facility, Warehouse/Distribution Facility, and Wholesaling Facility	0.1 spaces per 100 m ² GFA - non-residential	2.0 spaces
8.0	Education and Training Facility, Financial Institution, Manufacturing Facility, Science and Technology Facility, Warehouse/Distribution Facility, and Wholesaling Facility (within CC1 to CC4 and CCO zones)	0.15 spaces per 100 m ² GFA - non-residential	0.15 spaces per 100 m ² GFA - non-residential
9.0	Entertainment Establishment, Restaurant, Convenience Restaurant, Take-out Restaurant Retail Centre, Retail Store, and Service Establishment	0.15 spaces per 100 m ² GFA - non-residential	0.2 spaces per 100 m ² GFA - non-residential
10.0	Entertainment Establishment, Restaurant, Convenience Restaurant, Take-out Restaurant, Retail Centre, Retail Store, and Service Establishment (within CC1 to CC4 and CCO zones)	0.15 spaces per 100 m ² GFA - non-residential	0.3 spaces per 100 m ² GFA - non-residential
11.0	Medical Office and Medical Office - Restricted	0.1 spaces per 100 m ² GFA - non-residential	0.1 spaces per 100 m ² GFA - non-residential
12.0	Medical Office and Medical Office - Restricted (within CC1 to CC4 and CCO zones)	0.15 spaces per 100 m ² GFA - non-residential	0.2 spaces per 100 m ² GFA - non-residential
13.0	Office	0.1 spaces per 100 m ² GFA - non-residential	0.1 spaces per 100 m ² GFA - non-residential
14.0	Office (within CC1 to CC4 and CCO zones)	0.2 spaces per 100 m ² GFA - non-residential	0.15 spaces per 100 m ² GFA - non-residential
15.0	Public/Private School	0.1 spaces per 100 m ² GFA - non-residential	0.4 spaces per 100 m ² GFA - non-residential
16.0	Public/Private School (within CC1 to CC4 and CCO zones)	0.1 spaces per 100 m ² GFA - non-residential	0.4 spaces per 100 m ² GFA - non-residential

Table 3.1.6.6 continued on next page

Part 3 - Parking, Loading and Stacking Lane Regulations

Column A		B	C
Line 1.0	TYPE OF USE	BICYCLE PARKING - CLASS A	BICYCLE PARKING - CLASS B
Table 3.1.6.6 continued from previous page			
17.0	All other non-residential uses	0.05 spaces per 100 m ² GFA - non-residential	0.1 spaces per 100 m ² GFA - non-residential
18.0	All other non-residential uses (within CC1 to CC4 and CCO zones)	0.05 spaces per 100 m ² GFA - non-residential	0.1 spaces per 100 m ² GFA - non-residential

Appendix Q

ITE Parking Demand Rate

Multifamily Housing - 2+ BR (High-Rise) - Close to Rail Transit (222)

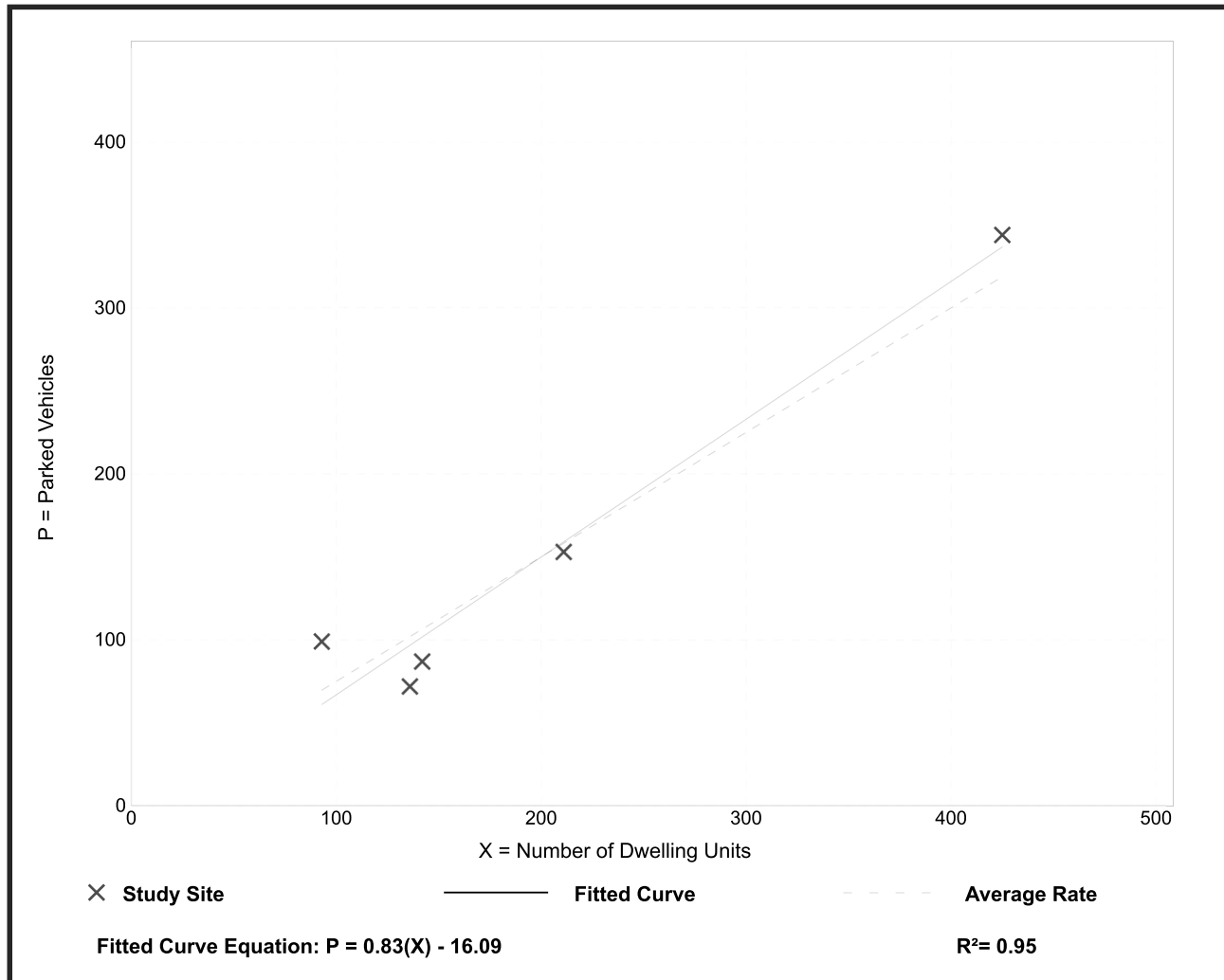
Peak Period Parking Demand vs: Dwelling Units
On a: Weekday (Monday - Friday)
Setting/Location: Dense Multi-Use Urban
 Number of Studies: 5
 Avg. Num. of Dwelling Units: 201

Peak Period Parking Demand per Dwelling Unit

Average Rate	Range of Rates	33rd / 85th Percentile	95% Confidence Interval	Standard Deviation (Coeff. of Variation)
0.75	0.53 - 1.06	0.61 / 1.06	***	0.16 (21%)

Data Plot and Equation

Caution – Small Sample Size



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Appendix R

Modal Split

TTS Modal Split

GTA Zones	Transit excluding GO rail	Cycle	Auto driver	GO rail only	Joint GO rail and local transit	Auto passenger	Taxi passenger	Walk
3602	549	147	5877	311	131	913	103	1214
3604	753	178	5848	337	256	854	0	456
3715	310	15	3953	284	176	637	0	403
3718	159	0	3054	107	61	863	33	157
3836	57	0	933	0	20	196	0	0
Total	1828	340	19665	1039	644	3463	136	2230
Percentage Split	6%	1%	67%	4%	2%	12%	0%	8%