



Traffic Impact Study

1656 Green Lane, East Gwillimbury Toyota Automotive Dealership

October 2024 | Project # 100534

NewRoads Automotive Group

c/o Weston Consulting



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1 INTRODUCTION

1.1 Scope and Objective

T.Y. Lin International Canada Inc. (TYLin) was retained by NewRoads Automotive Group, Weston Consulting to conduct a Traffic Impact Study in support of the proposed Toyota Automotive Dealership development at 1656 Green Lane East in the Town of East Gwillimbury, York Region. The proposed site will include a total gross floor area (GFA) of 49,754 ft², including both interior spaces and aftersales areas, with approximately 567 parking spaces provided.

The study includes a traffic operations analysis and a review of the site plan from a transportation perspective. The purpose of this study is to project the traffic volumes anticipated to be generated by the proposed development during weekday AM and PM peak periods, assess the impact of this traffic on the existing and future roadway network, recommend any necessary improvements, and confirm that the site plan is consistent with Town and Regional standards. A detailed scope was submitted by TYLin to the Town of East Gwillimbury ("the Town"), the Regional Municipality of York ("York Region"), and the Ministry of Transportation of Ontario ("MTO") staff for review and comment. Correspondence with the review agencies is included in **Appendix A**.

2 SITE CHARACTERISTICS

2.1 Study Environment

The subject property is located on the north side of Green Lane, at the northwest corner of Green Lane East and Harry Walker Parkway North, in the Town of East Gwillimbury. The property occupies 7.09 acres (2.87 hectares) and is municipally known as 1656 Green Lane East, East Gwillimbury. Currently, the land is vacant and undeveloped. The proposed development involves the construction of a Toyota Automotive Dealership with corresponding at-grade parking.

The proposed site and surrounding road network are illustrated in **Figure 2-1**.

Figure 2-1 Site Location



2.2 Development Context

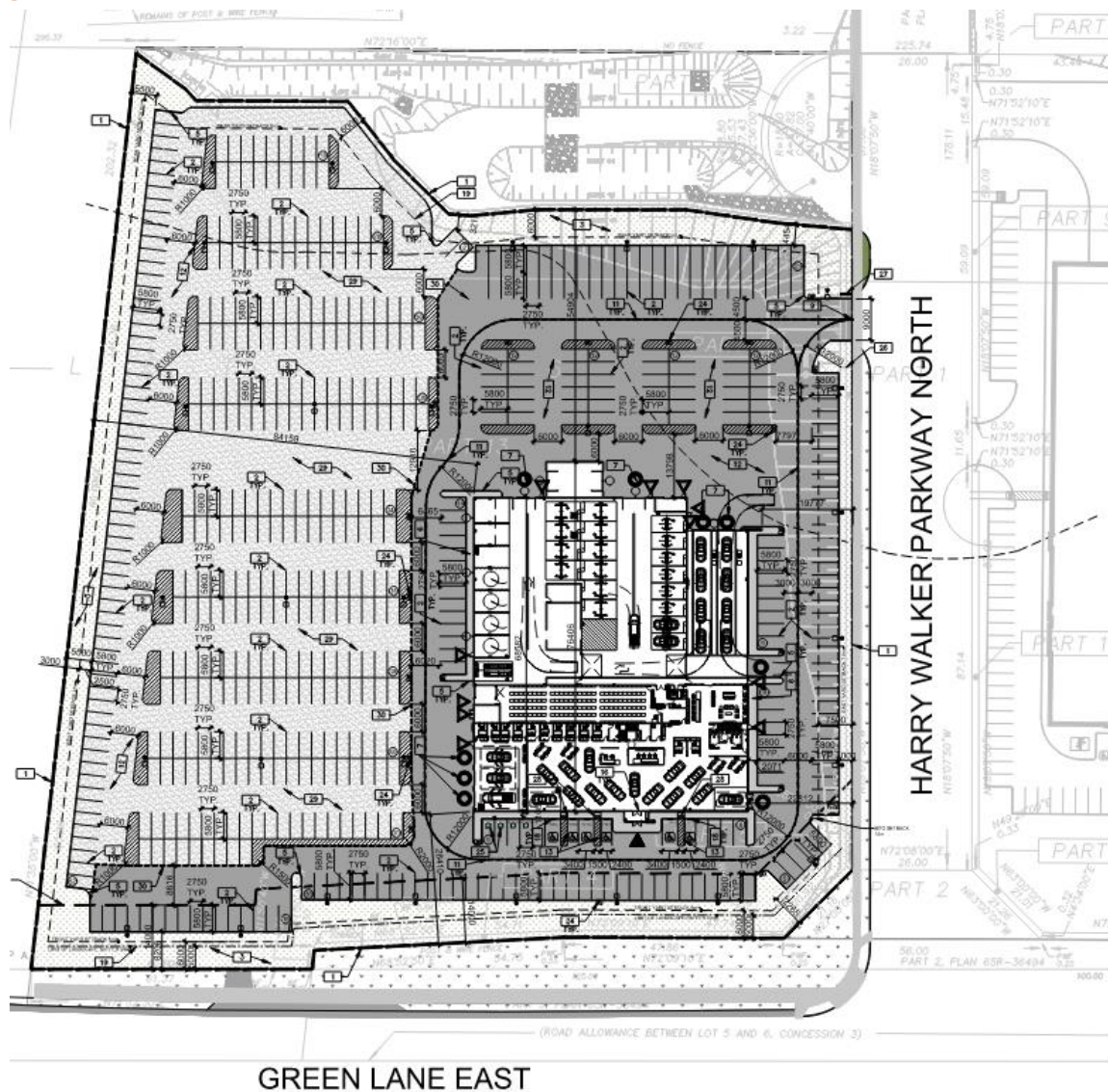
The site is approximately rectangular in shape and primarily consists of agricultural land. It is governed by the provincial Zoning Order O. Reg. 451/20, which restricts all uses except those permitted in the "Employment General (M2) Zone" under the Town of East Gwillimbury Zoning By-law 2018-043, including motor vehicle sales or rental establishments and accessory uses related to these functions.

The proposed development is generally bordered by Leslie Street to the west, Highway 404 to the east, and Green Lane East to the south. It is located west of the proposed Harry Walker Parkway extension, north of Green Lane East. The development plan includes the construction of a Toyota Automotive Dealership, with a total gross floor area (GFA) of 49,754 ft², including both interior spaces and aftersales areas.

Access to the proposed development is planned via a full-movement entrance onto the extension of Harry Walker Parkway, north of Green Lane East.

The proposed draft site plan, showing the development and site access point, is illustrated in **Figure 2-2** and is included in full in **Appendix B**.

Figure 2-2 Site Plan





2.3 Study Area Intersections

The following existing intersections have been included in the study area:

- ▶ Green Lane East and Harry Walker Parkway
- ▶ Green Lane East and Leslie Street
- ▶ Green Lane East and Highway 404 South East-West Off-Ramp
- ▶ Green Lane East and Highway 404 North East-West Off-Ramp / Carpool Parking Lot Access
- ▶ Future Site Access & Harry Walker Parkway

3 EXISTING CONDITIONS

3.1 Road Network

The following describes the existing road network within the study area.

Green Lane East (York Regional Road 19) is a major east-west arterial roadway that extends from Bathurst Street in the west to Woodbine Avenue in the east, under the jurisdiction of York Region. Between Leslie Street and Harry Walker Parkway, Green Lane features a five-lane undivided cross-section, with two eastbound lanes, two westbound lanes, and a center two-way left-turn lane. West of Harry Walker Parkway, up to the Highway 404 Northbound off-ramp, Green Lane transitions to a four-lane divided cross-section, with two eastbound and two westbound lanes separated by a concrete curb median. Auxiliary left-turn lanes are provided at the intersections with Leslie Street, Harry Walker Parkway, and the MTO Carpool parking lot access, all of which are signalized. Auxiliary right-turn lanes are also present at the intersections with Leslie Street and Harry Walker Parkway. Green Lane provides on-ramps to Highway 404 Northbound and Southbound in both eastbound and westbound directions. Additionally, there are two off-ramps from Highway 404, one from the northbound direction and one from the southbound direction allowing access to Green Lane in both eastbound and westbound directions.

Leslie Street (York Regional Road 12) is a major north-south arterial roadway that extends from Metro Road North in the Town of Georgina to Steeles Avenue in the City of Markham, also under the jurisdiction of York Region. South of Green Lane East, Leslie Street features a five-lane undivided cross-section, with two northbound lanes, two southbound lanes, and a center two-way left-turn lane. North of Green Lane East, Leslie Street transitions to a four-lane divided cross-section, with two northbound lanes and two southbound lanes separated by a concrete curb median. Approximately 100 meters north of Green Lane East, the cross-section reduces to one northbound and one southbound lane. Auxiliary left- and right-turn lanes are present at the intersection with Green Lane East.

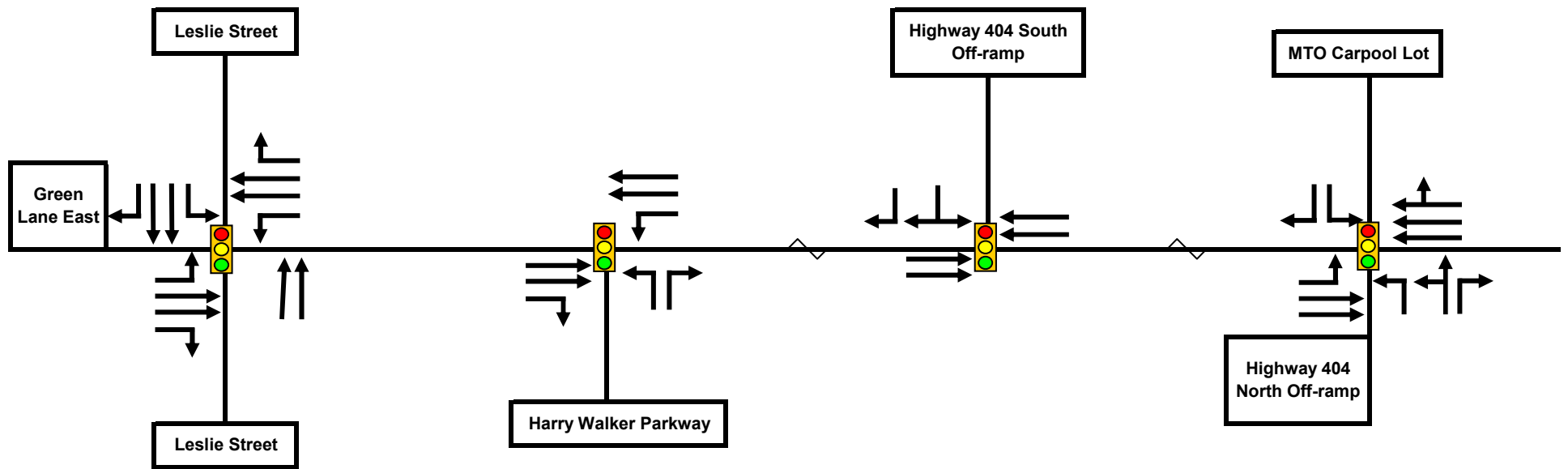
Harry Walker Parkway North is a north-south collector road that extends from Green Lane East in the north to Mulock Drive in the Town of Newmarket in the south. South of Green Lane East, there is signage indicating that the road is unassumed; from this point to Ringwell Drive, it falls within the limits of the Town of East Gwillimbury. The roadway has a two-lane cross-section with a posted speed limit of 50 km/h. Currently, there are no official auxiliary turn lanes at its signalized intersection with Green Lane East.

Highway 404 is a north-south 400-series highway extending from Woodbine Avenue in the Town of East Gwillimbury to Highway 401 and the Don Valley Parkway in the City of Toronto. The highway and its interchange facilities are under the jurisdiction of the Ministry of Transportation of Ontario.



(MTO). At Green Lane, Highway 404 forms a Parclo A4 interchange, with two off-ramps, one from the northbound direction and one from the southbound direction providing access to Green Lane in both eastbound and westbound directions. The interchange also includes four on-ramps, allowing access to Highway 404 Northbound and Southbound from both eastbound and westbound Green Lane.

The existing lane configuration for the study network is shown in **Figure 3-1**, which includes the assumed exclusive left and right turning lanes at Harry Walker Parkway.



3.2 Transit Network

Based on the recent YRT System map, there is one York Region transit route operating along Leslie Street within the vicinity of the site. Nearby, GO regional rail and bus transit is available.

3.2.1 GO Regional Transit

The nearest regional rail station, East Gwillimbury GO Station (**Figure 3-2**), is located approximately 2 km west of the site, or about a 4-minute drive away. The station is serviced by the Barrie GO train line, which provides hourly regional rail service during peak hours between Union Station in Toronto and Allandale Waterfront Station in Barrie. Additionally, the station is serviced by regional bus routes 65/65B (Newmarket-Toronto), which runs between East Gwillimbury GO Station and Toronto Union Station, and 68/68B (Barrie-Newmarket), which runs between Aurora GO Station and the Barrie Bus Terminal.

Figure 3-2 GO Transit Network



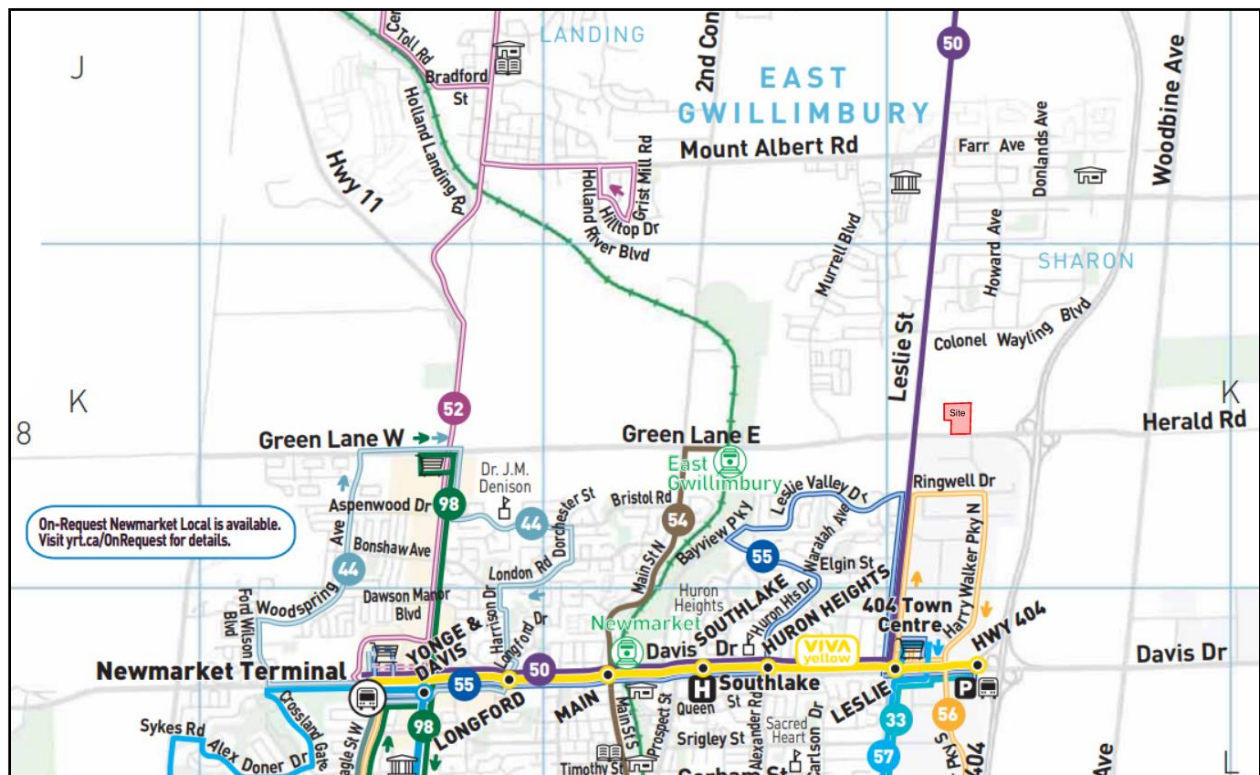
3.2.2 York Region Transit

Within the study area, there is one York Region Transit (YRT) bus stop servicing Route 50 Queensway, located at Leslie Street and Green Lane. Route 50 primarily runs in a north-south direction, operating between Newmarket Terminal in the south, along Davis Drive, Leslie Street, The Queensway South, and Metro Road North, to High Street at Burke Street in the Town of Georgina in the north. On weekdays, Route 50 operates from 6:12 a.m. to 11:17 p.m., with

frequencies of 24 minutes during the a.m. peak hours and 34 minutes during the p.m. peak hours. On Saturdays, the route operates from 6:35 a.m. to 11:16 p.m. with a frequency of 45 minutes, and on Sundays, it runs from 6:00 a.m. to 11:40 p.m. with a frequency of 60 minutes.

Additionally, YRT Route 56 Gorham-Eagle westbound operates on weekdays during rush hours between 6:44 a.m. to 6:32 p.m. with a 10-minute frequency, with a stop at Ringwell Drive and Harry Walker Parkway, located south of the subject site.

Figure 3-3 York Regional Transit Services



3.3 Pedestrian & Cycling Network

Green Lane features a sidewalk on the south side between Leslie Street and Harry Walker Parkway, separated from the road by a concrete curb. West of Leslie Street and east of Harry Walker Parkway on the south side, as well as along the entire north side of Green Lane, there is a narrow-paved boulevard separated from the road by a concrete curb, but no sidewalk is present.

Marked crosswalks with pedestrian signals are provided along Green Lane at several key intersections: all legs at Leslie Street, the east and south legs at Harry Walker Parkway, and the north, south, and east legs of the Highway 404 Northbound off-ramp and MTO Carpool lot intersection. However, there are no crosswalks at the Highway 404 Southbound off-ramp intersection, across any of the Highway 404 on-ramps, or on the west legs of the Harry Walker Parkway and Highway 404

Northbound off-ramp and MTO Carpool lot intersections.

South of Green Lane, Leslie Street has sidewalks on both sides: the west side adjacent to the road and separated by a curb, and the east side separated by a curb and grassy median. North of Green Lane, Leslie Street has a narrow-paved boulevard separated from the road by a concrete curb, which transitions into a paved shoulder (without a curb) approximately 115 meters north of the intersection.

Harry Walker Parkway has a sidewalk on the west side of the road only, separated from the road by a grassy boulevard and curb.

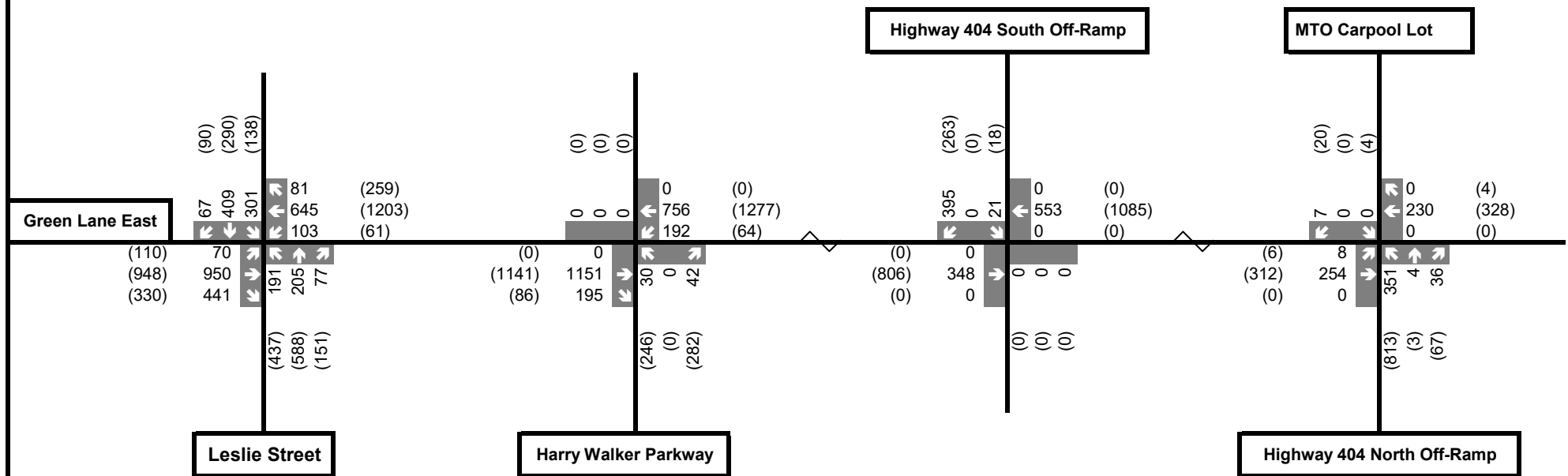
Currently, there are no trails or dedicated cycling facilities within the study area.

3.4 Existing Traffic Volumes

Turning movement count (TMC) data, collected by TYLin on August 27, 2024, was obtained for the following intersections:

- ▶ Green Lane East and Harry Walker Parkway
- ▶ Green Lane East and Leslie Street
- ▶ Green Lane East and Highway 404 South East-West Off-Ramp
- ▶ Green Lane East and Highway 404 North East-West Off-Ramp / Carpool Parking Lot Access

The signal timing plans (STP) for all these intersections were provided by York Region. Existing traffic volumes are illustrated in **Figure 3-4**. The turning movement counts are detailed in **Appendix C**, and the signal timing plans are included in **Appendix D**.



4 FUTURE CONDITIONS

4.1 Background Growth

The annual traffic growth rates along the corridors within the study area were based on the following studies:

- ▶ **Transportation Impact Study (TYLin, 2023):** 18368 Leslie Street, Industrial Development
- ▶ **Transportation Impact Study (TYLin, 2022):** 1656 Green Lane East, Industrial Development
- ▶ **Transportation Impact Study (TMIG, 2022):** Woodbine Employment Lands, Industrial Development

For all planning horizons, a 2.0% annual growth rate was applied to traffic volumes on Green Lane and both Highway 404 off-ramps to account for additional corridor growth. A 1.5% annual growth rate was applied to traffic volumes on Leslie Street.

4.2 Horizon Years

As per York Region Transportation Mobility Plan Guidelines, a development such as the one proposed for the subject site requires an analysis of future background and future total traffic at five-year horizon from the year of opening. As such, horizon years of 2024 (anticipated opening), 2029, and 2034 were adopted for this study.

4.3 Background Developments

As directed by the Town of East Gwillimbury, the background developments were identified in the vicinity of the study area that were expected to contribute to future background traffic growth. The background developments are summarized in **Table-4-1**.

Table 4-1 Background Developments

Number	Development	Description
1	Murrell Boulevard & Green Lane East	LEA, Commercial Development with GFA 126,237 ft ²
2	18368 Leslie Street	TYLin, Industrial Development with GFA 799,564 ft ²
3	1656 Green Lane East	TYLin, Industrial Development with GFA 332,641 ft ²

The sources site traffic volumes from each background development are included in **Appendix E**.

4.4 Study Area Road Network Improvements

The following documents were considered in identifying future conditions:

- ▶ East Gwillimbury Transportation Master Plan (TMP) (2010)
- ▶ Presentations from the East Gwillimbury Transportation Master Plan Update (2018, 2019)
- ▶ East Gwillimbury Active Transportation and Trails Master Plan (ATTMP) (2012)
- ▶ York Region Transportation Master Plan (TMP) (2016)
- ▶ 10-Year Roads and Transit Capital Construction Program (2021)
- ▶ Ontario Southern Highways Program (2017-2021)
- ▶ Highway 404 Employment Corridor Secondary Plan (2020)

In the future, Harry Walker Parkway is expected to be extended north of Green Lane and further to the west to create a new east-west collector road across the Town. The proposed site plan also indicates a future access point that will connect to this new extension of Harry Walker Parkway.

The Highway 404 Employment Corridor Secondary Plan (2020), completed by HDR, was also reviewed. It is understood that the current plan for the Highway 404 flyover is not being considered, as it is not outlined in the Town of East Gwillimbury's Official Plan (2022) and its accompanying schedules. Therefore, the Highway 404 flyover has been excluded from this analysis.

Along with the future extension of the Harry Walker Parkway Extension at Leslie Street, it is expected to provide dedicated right-turn and left-turn lanes, functioning as a signalized intersection. However, this future intersection configuration, signalization, and the traffic from the Green Lane Secondary Plan should be analyzed later when development applications within the Green Lane Secondary Plan are submitted.

The 2019 Town TMP update recommended capacity improvements along Green Lane between Highway 404 and Yonge Street, as well as on Leslie Street between Green Lane and Colonel Weyling Boulevard/Major Hampton Road. The 2016 York Region TMP proposed widening Leslie Street to a 4-lane cross-section and Green Lane to a 6-lane cross-section, with implementation expected between 2022 and 2026. However, these widenings were not included in the 2021 York Region 10-Year Roads and Transit Capital Construction Program, which forecasts road construction projects up to 2030. Consequently, these improvements have been considered for the 2034 horizon year.

An east-west collector road, running roughly parallel to and north of Green Lane, has also been conceptualized, extending from east of Highway 404 to Leslie Street (and eventually to Bathurst Street in the future beyond the scope of this study). Harry Walker Parkway is expected to intersect with this collector road at an elbow bend to the north. However, for the purposes of this analysis,

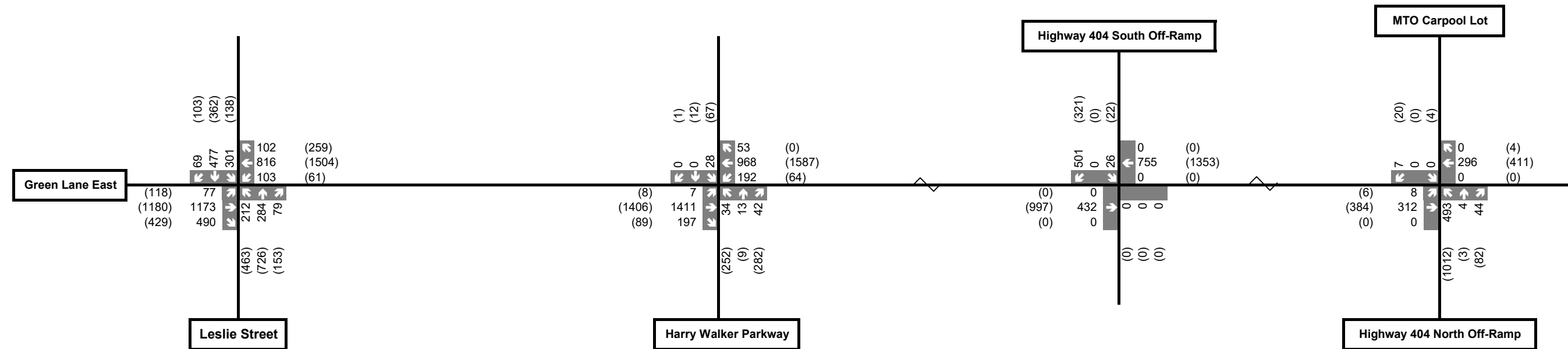
this corridor has not been included as it is considered beyond the project's analysis years. Additionally, access to the future east-west collector road is beyond the scope of this study and may or may not be available as part of the proposed development.

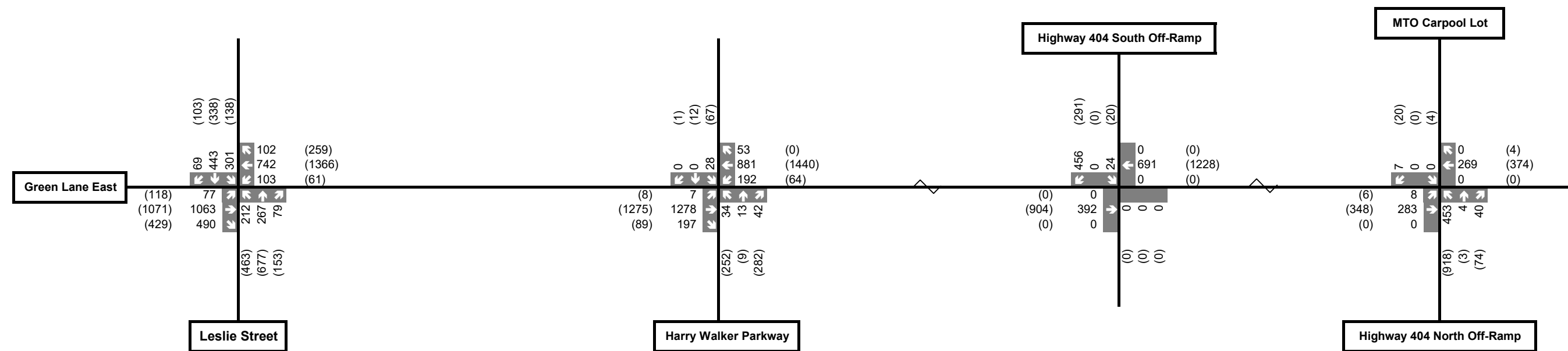
The 2019 Town TMP update proposed a multi-use path along Green Lane and Leslie Street within the study area. According to the 2016 TMP, the path along Leslie Street north of Green Lane is expected to be completed by 2026. The Harry Walker Parkway extension is proposed as a bikeway (with either bike lanes or a signed bike route), and a trail has also been proposed for the extension. Sidewalks are planned along the Harry Walker Parkway extension as well.

The 2016 York Region TMP identifies Green Lane between Highway 404 and East Gwillimbury GO, as well as Leslie Street from Newmarket to Queensville, as part of the frequent transit network, which will provide transit service every 15 minutes or less along these routes. The frequent transit network is proposed for implementation between 2027 and 2031. Between 2032 and 2041, a bus rapidway is proposed between Yonge Street and East Gwillimbury GO station to improve connectivity to the Yonge Street rapidway corridor. These transit improvements are expected to be implemented beyond the horizon years considered in this study.

4.5 Future Background Traffic Volumes

The future background traffic volumes were estimated by combining the existing traffic volumes with corridor growth and traffic from anticipated developments over specific periods. For the 2029 projections, five years of corridor growth and future development traffic were added to the existing volumes, resulting in the 2029 future background weekday a.m. and p.m. peak hour traffic volumes, as illustrated in **Figure 4-1**. Similarly, for the 2034 projections, ten years of corridor growth and future development traffic were added to the existing volumes, producing the 2034 future background weekday a.m. and p.m. peak hour traffic volumes, as shown in **Figure 4-2**.







5 SITE GENERATED TRAFFIC

5.1 Site Trip Generation

The proposed development includes a Toyota automotive dealership with a gross floor area (GFA) of 49,754 ft². The vehicle traffic generated by the dealership during weekday a.m. and p.m. peak hours was estimated using the trip generation rates from the Institute of Transportation Engineers (ITE) 10th Edition, specifically for Land Use Code (LUC) 840, which relates to Retail - Automobile Sales (New). Note that this refers to "new car sales" as opposed to "used car sales". **Table 5-1** provides a summary of the estimated total vehicle trip generation for the proposed development.

Table 5-1 Site Trip Generation

Land Use	Parameters	Peak Hour Trip Generation					
		Weekday AM			Weekday PM		
		In	Out	Total	In	Out	Total
LUC 840 Retail-Automobile Sales (New): 49,754 ft ²	Average Rate	1.86			T = 1.81 X + 20.91		
	Trip Distribution	73%	27%	100%	40%	60%	100%
	Gross Auto Trips	68	25	93	44	67	111

A total of 93 net auto site trips, consisting of 68 inbound and 25 outbound trips, are predicted to be generated by the subject site during the AM peak hour. During the PM peak hour, 44 inbound and 67 outbound net auto site trips are predicted, totaling 111 trips.

5.2 Site Trip Distribution and Assignment

The distribution of site traffic was derived from the 2016 Transportation Tomorrow Survey (TTS) summary data for the relevant zones, as well as engineering judgment to assign traffic to the road network based on existing traffic patterns. **Table 5-2** summarizes the proportion of site trips distributed across the study area for the 2029 and 2034 road networks, categorized by direction of approach and departure during the weekday a.m. and p.m. peak hours.



Table 5-2 Site Trip Distribution

Trip Orientation	Inbound / Outbound Distribution			
	AM Peak Period		PM Peak Period	
	Inbound	Outbound	Inbound	Outbound
Northwest	8%	0%	0%	10%
North	16%	44%	0%	14%
Northeast	4%	0%	0%	4%
East	2%	0%	0%	2%
Southeast	13%	0%	0%	12%
South	29%	43%	0%	29%
Southwest	25%	12%	100%	24%
West	3%	0%	0%	5%
Total	100%	100%	100%	100%

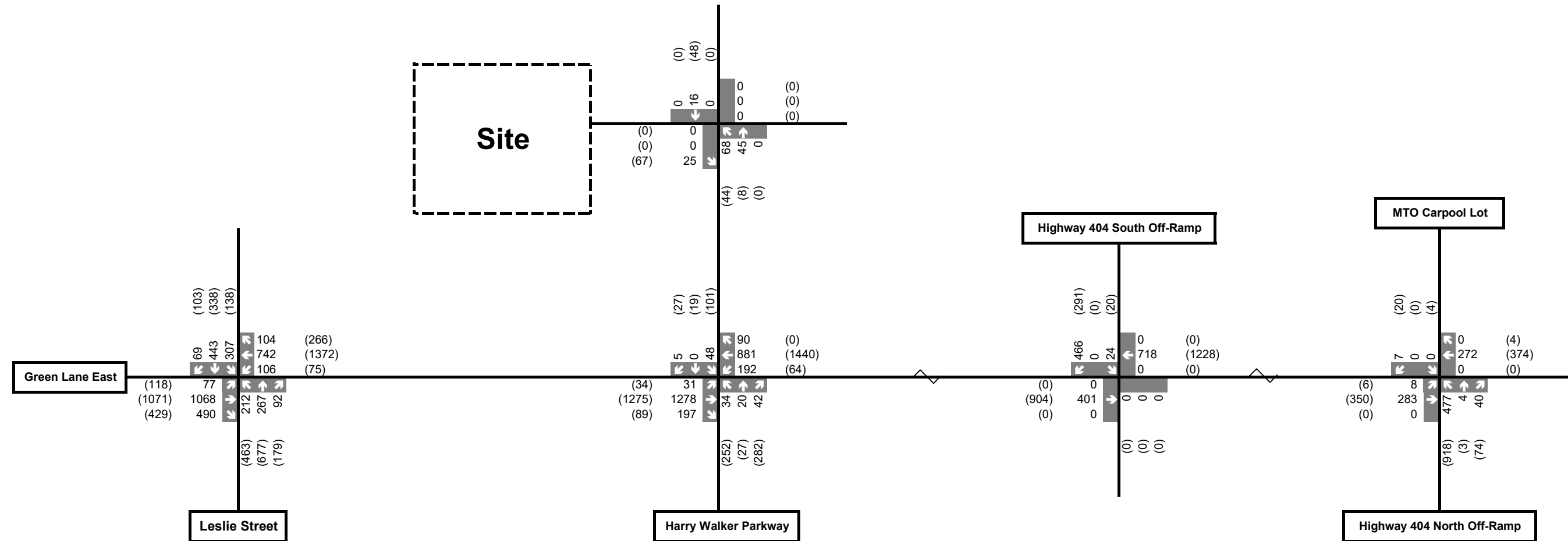
The estimated site trips during the a.m. and p.m. peak periods are shown in **Figure 5-1**, which illustrates the total site traffic generated by the development.

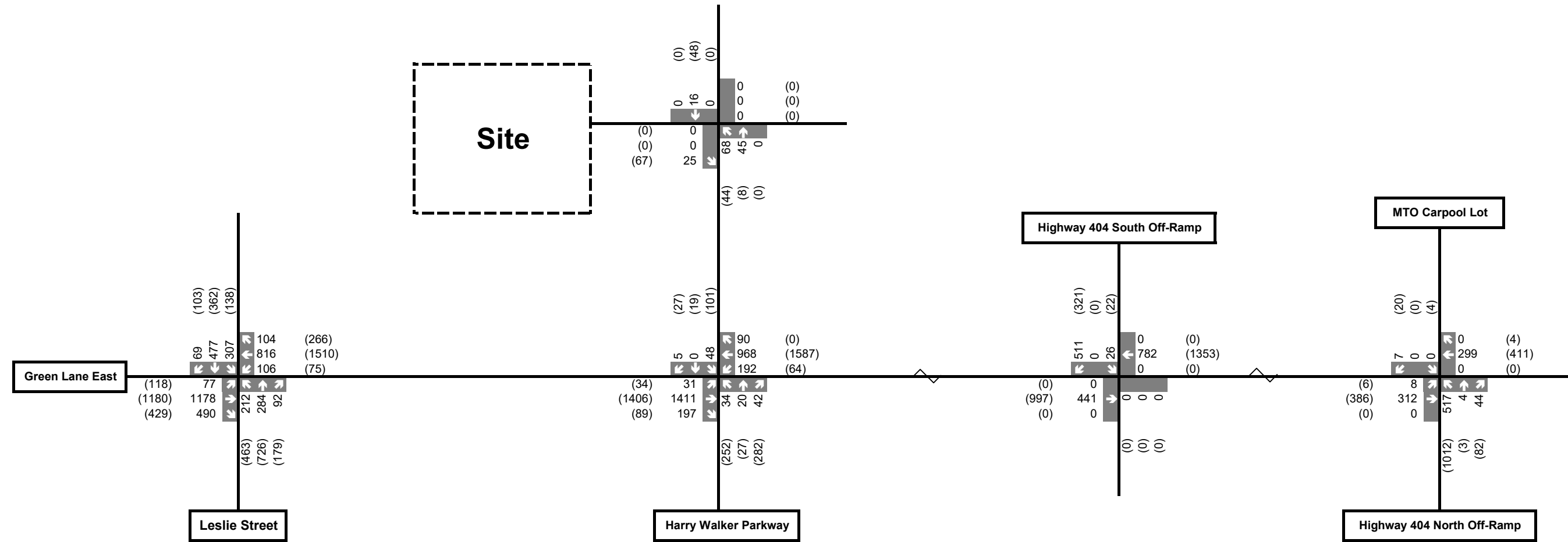


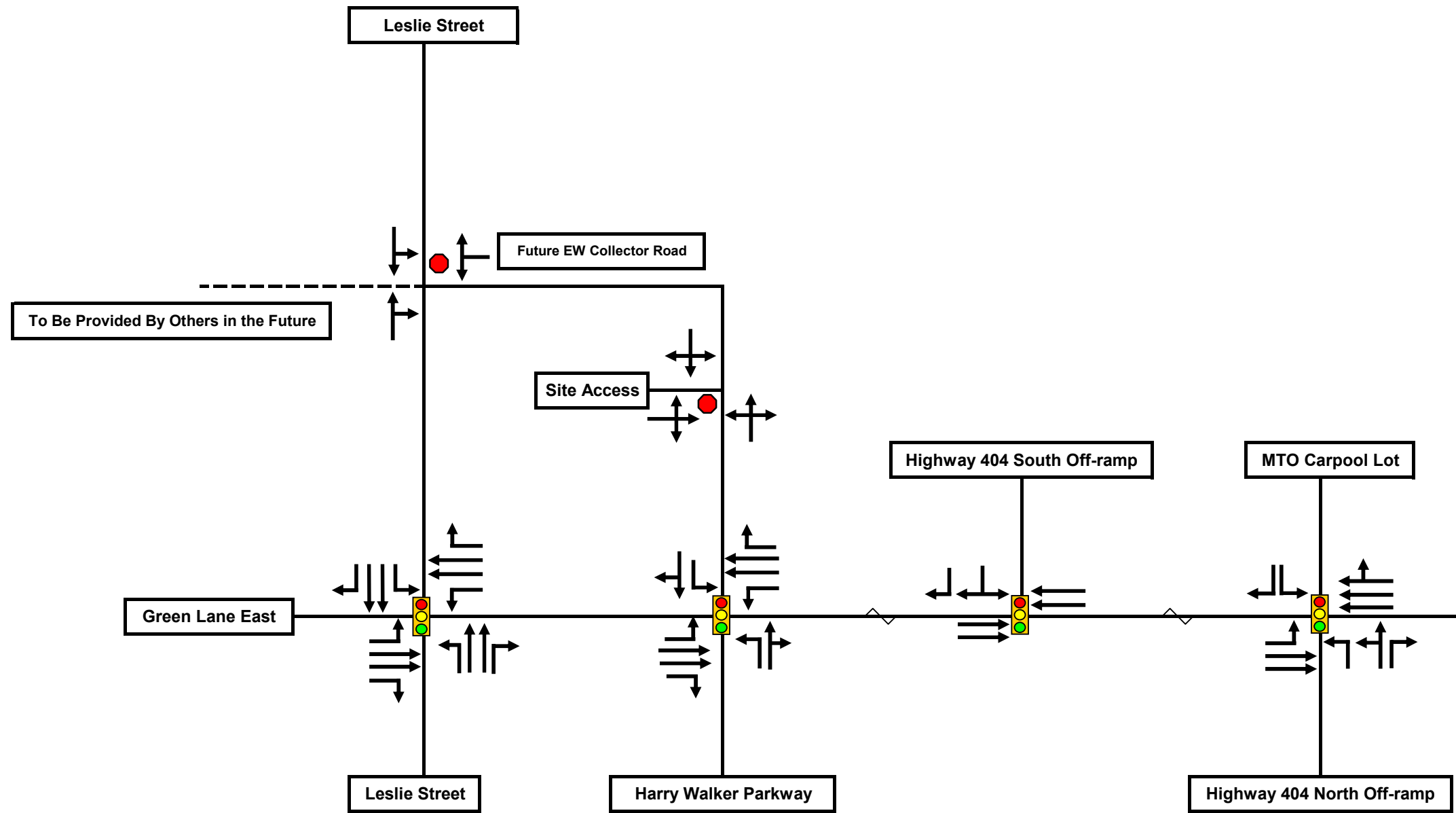
6 FUTURE TOTAL TRAFFIC VOLUMES

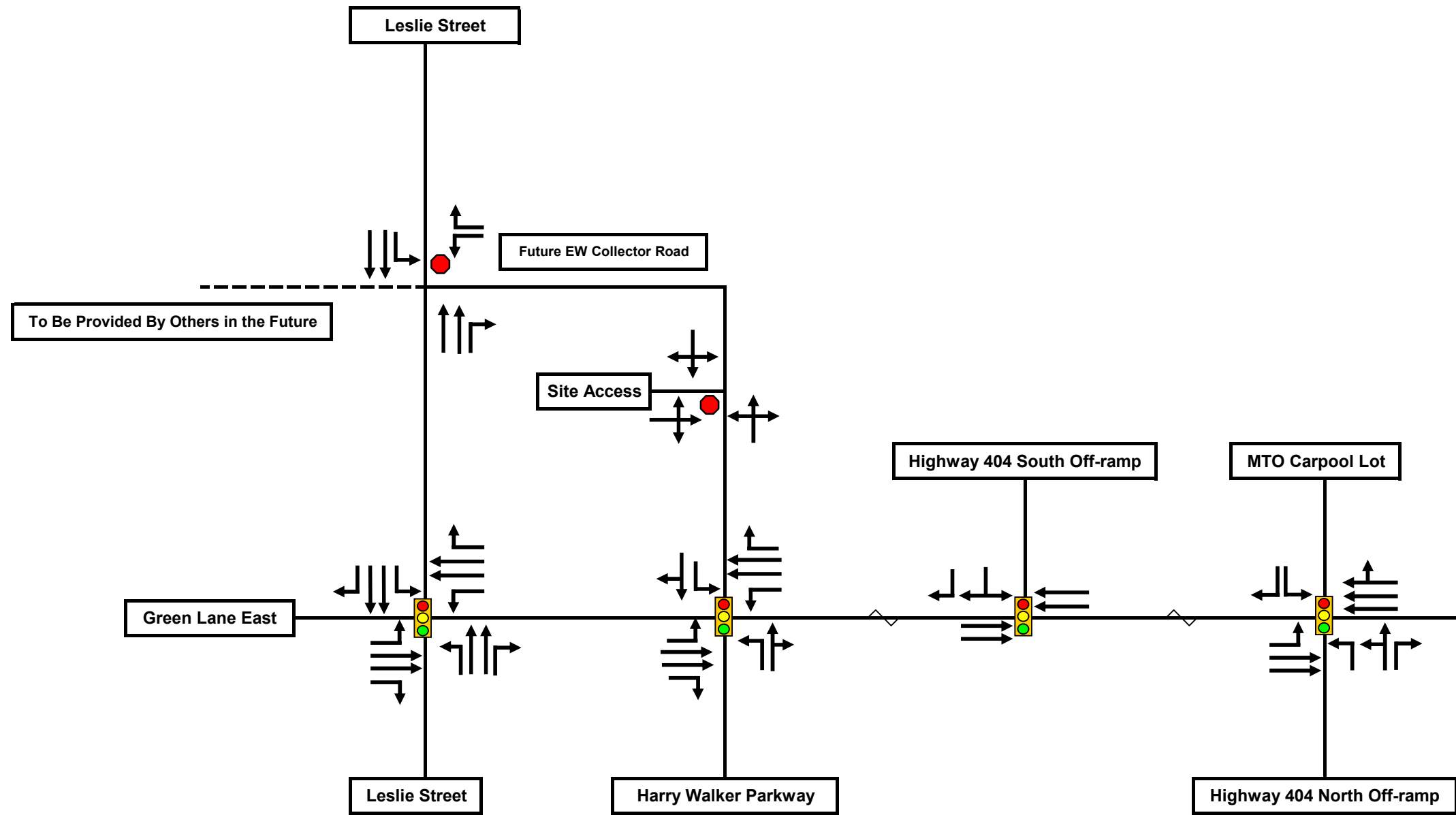
Future total traffic volumes during the weekday peak hours for the 2029 and 2034 planning horizons were determined by combining the projected future background traffic with the estimated site-generated traffic. The future road network will include the Harry Walker Parkway extension, with site access along this extension. For the 2029 and 2034 conditions, the site will have one full-moves access onto the Harry Walker Parkway extension. The lane configurations for the 2029 and 2034 horizons are illustrated in **Figure 6-1** and **Figure 6-2**.

Figure 6-3 summarizes the future total traffic volumes for the 2029 planning horizon during the weekday AM and PM peak hours, while **Figure 6-4** presents the future total traffic volumes for the 2034 planning horizon during the weekday AM and PM peak hours.









7 TRAFFIC CAPACITY ANALYSIS

The traffic capacity analysis identifies how well the intersections and access driveways are operating and how they are expected to operate in the future. The analysis contained in this report utilized the Highway Capacity Manual (HCM) methodology within the Synchro Software package. The reported intersection volume-to-capacity ratios (v/c) are a measure of the saturation volume for each turning movement, while the levels-of-service (LOS) are a measure of the average delay for each turning movement.

In accordance with the York Region Mobility Plan Guidelines, the analysis includes identifying critical movements at signalized intersections within the study area. Critical movements are defined as those where the level of service (LOS) is E or worse, or where the volume-to-capacity (v/c) ratio exceeds 0.85 for urban areas, as outlined in the York Region Official Plan.

The following tables summarize the Synchro/HCM capacity results for the study intersections during the weekday a.m. and p.m. peak hours under existing, future background, and future total (2029 and 2034) traffic conditions. Detailed Synchro reports are attached in **Appendix F**.

7.1 Existing Conditions

The traffic capacity analysis results for the intersections in the study area are summarized in **Table 7-1** for both the weekday a.m. and p.m. peak hours under existing traffic conditions. As part of the calibration process, we used a Saturated flow of 2000 for all movements. For the Green Lane and Leslie Street intersection, a -3 second lost time adjustment was applied for the northbound left turn during the p.m. peak, and the lane width for the northbound left lane was assumed to be 4.8 meters, reflecting the width between a 3.5-meter lane with a median and a 5-meter lane without a median.



Table 7-1 Existing 2024 Capacity Analysis

Intersection	Movement	Weekday AM Peak Hour			Weekday PM Peak Hour		
		v/c	Delay (s)	LOS	v/c	Delay (s)	LOS
Green Lane East at Leslie Street (Signalized)	Overall	0.59	34	C	0.78	39	D
	EBL	0.16	15	B	0.53	25	C
	EBT	0.53	24	C	0.55	26	C
	EBR	0.36	22	C	0.27	22	C
	WBL	0.32	15	B	0.24	20	B
	WBT	0.35	20	B	0.73	34	C
	WBR	0.06	16	B	0.23	24	C
	NBL	0.62	46	D	0.89	57	E
	NBT	0.38	54	D	0.81	61	E
	NBR	0.05	51	D	0.20	48	D
	SBL	0.80	58	E	0.62	50	D
	SBT	0.74	62	E	0.51	57	E
Green Lane East at Harry Walker Parkway (Signalized)	Overall	0.51	7	A	0.61	19	B
	EBT	0.45	8	A	0.51	13	B
	EBR	0.12	2	A	0.05	5	A
	WBL	0.51	5	A	0.23	8	A
	WBTR	0.28	3	A	0.51	9	A
	NBL	0.33	54	D	0.89	75	E
Green Lane East at Highway 404- Southbound Off-Ramp (Signalized)	Overall	0.28	16	B	0.45	17	B
	EBT	0.21	13	B	0.45	15	B
	WBT	0.36	14	B	0.61	18	B
	SBL	0.16	22	C	0.20	22	C
	SBR	0.14	21	C	0.21	22	C
Green Lane East at Highway 404 Northbound Off-Ramp/MTO Carpool Lot (Signalized)	Overall	0.31	22	C	0.46	31	C
	EBL	0.02	9	A	0.01	17	B
	EBTR	0.16	10	B	0.22	19	B
	WBTR	0.12	12	B	0.19	22	C
	NBL	0.69	41	D	0.80	40	D
	NBT	0.66	39	D	0.79	38	D
	NBR	0.03	29	C	0.04	24	C
	SBL	-	-	-	0.04	44	D
	SBR	0.01	41	D	0.01	44	D

Under existing a.m. conditions, all study intersections operate within capacity and with most achieving LOS D or better. However, the northbound left (NBL) movement at Green Lane East and Leslie Street intersection, as well as, at the Green Lane East and Harry Walker intersection has a v/c ratio of 0.89, resulting in LOS E during the p.m. peak hour. Overall, all intersections exhibit acceptable delays and reserve capacity.



7.2 Future Background Conditions

7.2.1 Future Background 2029

The traffic capacity analysis results for the study area intersections under 2029 future background conditions are summarized in **Table 7-2** for both the weekday AM and PM peak hours.

It is important to note that the northbound left turn at the intersection of Harry Walker Parkway and Green Lane East has been observed to approach capacity. To address this issue, the turn type has been modified from permitted to permitted + protected, and is consistent with the previous traffic studies prepared by TYLin in this area. This optimization will be reflected in the future total conditions.

As noted in **Section 4.4**, traffic volumes from the 1656 Green Lane E development (Green Lane West) are included as part of the background volumes. Additionally, the Harry Walker Parkway extension is assumed to be operational, allowing redistributed volumes from Green Lane West to access the site via this extension. Thus, the intersection of Green Lane East and Harry Walker Parkway is considered a 4-legged intersection under future conditions.



Table 7-2 Future Background 2029 Capacity Analysis

Intersection	Movement	Weekday AM Peak Hour			Weekday PM Peak Hour		
		v/c	Delay (s)	LOS	v/c	Delay (s)	LOS
Green Lane East at Leslie Street (Signalized)	<i>Overall</i>	0.65	36	D	0.89	44	D
	EBL	0.20	16	B	0.65	41	D
	EBT	0.61	27	C	0.63	30	C
	EBR	0.43	25	C	0.39	25	C
	WBL	0.38	18	B	0.30	22	C
	WBT	0.43	23	C	0.86	42	D
	WBR	0.08	18	B	0.25	25	C
	NBL	0.67	47	D	0.97	74	E
	NBT	0.44	54	D	0.87	65	E
	NBR	0.05	50	D	0.20	47	D
	SBL	0.82	60	E	0.67	53	D
	SBT	0.75	62	E	0.54	57	E
	SBR	0.04	51	D	0.07	51	D
Green Lane East at Harry Walker Parkway (Signalized)	<i>Overall</i>	0.56	12	B	0.68	25	C
	EBL	0.02	7	A	0.06	13	B
	EBT	0.52	12	B	0.59	19	B
	EBR	0.14	8	A	0.06	12	B
	WBL	0.57	11	B	0.31	14	B
	WBT	0.33	5	A	0.61	15	B
	WBR	0.03	3	A	0.76	62	E
	NBL	0.19	59	E	0.65	64	E
	NBTR	0.19	68	E	0.51	70	E
Green Lane East at Highway 404- Southbound Off-Ramp (Signalized)	<i>Overall</i>	0.38	17	B	0.52	18	B
	EBT	0.23	13	B	0.51	16	B
	WBTR	0.44	15	B	0.69	19	B
	SBL	0.27	23	C	0.25	23	C
	SBR	0.28	23	C	0.26	23	C
Green Lane East at Highway 404 Northbound Off-Ramp/MTO Carpool Lot (Signalized)	<i>Overall</i>	0.35	24	C	0.50	31	C
	EBL	0.02	11	B	0.02	20	B
	EBTR	0.17	11	B	0.25	22	C
	WBTR	0.14	14	B	0.23	25	C
	NBL	0.73	38	D	0.80	38	D
	NBT	0.73	37	D	0.78	37	D
	NBR	0.03	25	C	0.05	23	C
	SBL	-	-	-	0.04	47	D
Expansion of Harry Walker Parkway at Site Access (Unsignalized)	SBR	0.01	39	D	0.01	47	D
	EBL	0.00	0	A	0.00	0	A
	NBT	0.00	0	-	0.00	0	-
	SBTR	0.00	0	-	0.00	0	-



The traffic capacity analysis results for the study area intersections under the projected 2029 future background conditions indicate that, overall, the intersections are expected to operate with reserve capacity and acceptable levels of delay following the proposed optimizations.

However, northbound left turn (NBL) and northbound through (NBT) movements at the Green Lane East and Leslie Street intersection have v/c ratio of 0.97 and 0.87, respectively due to background traffic, resulting in a LOS E during P.M. peak hour. It is recommended that the City and Region monitor this intersection for further improvements if needed.

7.2.2 Future Background 2034

The traffic capacity analysis results for the study area intersections are shown in **Table 7-3** for the weekday AM and PM peak hours under 2034 future background traffic conditions. No additional optimizations were implemented beyond those established for 2029.

As previously mentioned in the report, Leslie Street is planned by the Region to be widened to a 4-lane cross-section by the 2034 horizon year.



Table 7-3 Future Background 2034 Capacity Analysis

Intersection	Movement	Weekday AM Peak Hour			Weekday PM Peak Hour		
		v/c	Delay (s)	LOS	v/c	Delay (s)	LOS
Green Lane East at Leslie Street (Signalized)	<i>Overall</i>	<i>0.70</i>	<i>37</i>	<i>D</i>	0.95	<i>49</i>	<i>D</i>
	EBL	0.22	16	B	0.65	44	D
	EBT	0.67	30	C	0.70	32	C
	EBR	0.46	26	C	0.41	26	C
	WBL	0.43	21	C	0.36	25	C
	WBT	0.47	24	C	0.95	52	D
	WBR	0.08	19	B	0.26	26	C
	NBL	0.69	48	D	0.98	78	E
	NBT	0.45	54	D	0.90	68	E
	NBR	0.05	50	D	0.19	47	D
	SBL	0.83	61	E	0.68	53	E
	SBT	0.77	63	E	0.56	57	D
	SBR	0.04	50	D	0.07	51	D
Green Lane East at Harry Walker Parkway (Signalized)	<i>Overall</i>	<i>0.58</i>	<i>14</i>	<i>B</i>	<i>0.74</i>	<i>26</i>	<i>C</i>
	EBL	0.02	9	A	0.08	14	B
	EBT	0.60	15	B	0.66	21	C
	EBR	0.15	10	A	0.06	12	B
	WBL	0.59	17	B	0.37	17	B
	WBT	0.37	5	A	0.67	16	B
	WBR	0.03	3	A	0.76	62	E
	NBL	0.19	59	E	0.68	65	E
	NBTR	0.19	68	E	0.50	70	E
Green Lane East at Highway 404- Southbound Off-Ramp (Signalized)	<i>Overall</i>	<i>0.43</i>	<i>18</i>	<i>B</i>	<i>0.58</i>	<i>20</i>	<i>B</i>
	EBT	0.26	13	B	0.56	17	B
	WBTR	0.48	16	B	0.76	21	C
	SBL	0.35	24	C	0.28	23	C
	SBR	0.36	24	C	0.30	24	C
Green Lane East at Highway 404 Northbound Off-Ramp/MTO Carpool Lot (Signalized)	<i>Overall</i>	<i>0.38</i>	<i>25</i>	<i>C</i>	<i>0.54</i>	<i>31</i>	<i>C</i>
	EBL	0.02	11	B	0.02	23	C
	EBTR	0.19	12	B	0.31	26	C
	WBTR	0.16	14	B	0.27	29	C
	NBL	0.76	39	D	0.77	34	C
	NBT	0.75	38	D	0.76	34	C
	NBR	0.03	25	C	0.05	21	D
	SBL	-	-	-	0.04	51	-
Expansion of Harry Walker Parkway at Site Access (Unsignalized)	SBR	0.01	39	D	0.01	50	D
	EBL	0.00	0	A	0.00	0	A
	NBT	0.00	0	-	0.00	0	-
	SBTR	0.00	0	-	0.00	0	-



The traffic capacity analysis results for the study area intersections indicate that, under the projected 2034 future background conditions, the intersections will generally operate within capacity achieving acceptable levels of service (LOS) and manageable delays during the a.m. and p.m. peak hours.

At the Green Lane East and Leslie Street intersection, the overall v/c ratio approaches capacity during the PM peak hour at 0.95, resulting in a LOS of D. Specific movements, such as the northbound left turn (NBL) and northbound through (NBT), have v/c ratios of 0.98 and 0.90 respectively, resulting in LOS E.

In summary, while most intersections are expected to perform adequately, the critical intersection of Green Lane East at Leslie Street requires ongoing monitoring to assess the need for future improvements, particularly for movements experiencing higher delays.

7.3 Future Total Conditions

The future total road network consists of the future background traffic combined with the traffic generated by the subject site. One new site access intersection will be added at the extension of Harry Walker Parkway, which will be unsignalized.

7.3.1 Future Total 2029

The traffic capacity analysis results for the intersections in the study area are presented in **Table 7-4** for the weekday AM and PM peak hours under the 2029 future total traffic conditions, incorporating signal optimization. This optimization involved changing the turn type from permitted to protected for northbound left movement at the intersection Harry Walker Parkway and Green Lane East, consistent with the adjustments made for the future background conditions.



Table 7-4 Future Total 2029 Capacity Analysis

Intersection	Movement	Weekday AM Peak Hour			Weekday PM Peak Hour		
		v/c	Delay (s)	LOS	v/c	Delay (s)	LOS
Green Lane East at Leslie Street (Signalized)	Overall	0.66	36	D	0.89	45	D
	EBL	0.20	16	B	0.65	41	D
	EBT	0.61	28	C	0.65	31	C
	EBR	0.43	25	C	0.39	27	C
	WBL	0.39	18	B	0.34	22	C
	WBT	0.43	23	C	0.86	42	D
	WBR	0.08	19	B	0.25	26	C
	NBL	0.67	47	D	0.97	75	E
	NBT	0.44	54	D	0.87	65	E
	NBR	0.06	50	D	0.27	48	D
	SBL	0.84	62	E	0.67	53	D
	SBT	0.75	62	E	0.54	57	E
	SBR	0.04	51	D	0.07	51	D
Green Lane East at Harry Walker Parkway (Signalized)	Overall	0.58	14	B	0.70	28	C
	EBL	0.08	10	B	0.24	17	B
	EBT	0.55	15	B	0.60	20	C
	EBR	0.15	11	B	0.06	13	B
	WBL	0.61	15	B	0.31	15	B
	WBT	0.35	6	A	0.62	15	B
	WBR	0.06	5	A	-	-	-
	NBL	0.19	57	E	0.78	63	E
	NBTR	0.18	64	E	0.76	70	E
	SBL	0.50	73	E	0.69	74	E
Green Lane East at Highway 404- Southbound Off-Ramp (Signalized)	Overall	0.40	17	B	0.52	18	B
	EBT	0.24	13	B	0.51	16	B
	WBTR	0.46	15	B	0.69	19	B
	SBL	0.29	23	C	0.25	23	C
	SBR	0.30	24	C	0.26	23	C
Green Lane East at Highway 404 Northbound Off-Ramp/MTO Carpool Lot (Signalized)	Overall	0.36	24	C	0.51	31	C
	EBL	0.02	11	B	0.02	20	B
	EBTR	0.17	12	B	0.26	22	C
	WBTR	0.14	14	B	0.23	25	C
	NBL	0.74	38	D	0.80	38	D
	NBT	0.74	38	D	0.78	37	D
	NBR	0.03	25	C	0.05	23	C
	SBL	-	-	-	0.04	47	D
Expansion of Harry Walker Parkway at Site Access (Unsignalized)	SBR	0.01	39	D	0.01	47	D
	EBL	0.03	8	A	0.07	9	A
	NBT	0.05	5	A	0.03	6	A
	SBTR	0.01	0	-	0.03	0	-



The traffic capacity analysis results for the intersections in the study area under the 2029 future total traffic conditions, incorporating signal optimizations, indicate generally operate within capacity, achieving acceptable level of service (LOS) during a.m. and p.m. peak hours.

During the p.m. peak hours, the northbound left turn (NBL) and northbound through (NBT) movements at the Green Lane East and Leslie Street intersection have v/c ratio of 0.97 and 0.87 respectively, resulting in LOS E.

Overall, while most intersections are projected to function within acceptable limits, continued monitoring is recommended for the critical movements at the Green Lane East and Leslie Street intersection to assess the need for future improvements.

7.3.2 Future Total 2034

The traffic capacity analysis results for the intersections in the study area are presented in **Table 7-5** for the weekday AM and PM peak hours under the 2034 future total traffic conditions, incorporating signal optimization. All other optimizations have been carried forward from the future background scenario, and lane configurations from the 2034 future background have also been maintained.



Table 7-5 Future Total 2034 Capacity Analysis

Intersection	Movement	Weekday AM Peak Hour			Weekday PM Peak Hour		
		v/c	Delay (s)	LOS	v/c	Delay (s)	LOS
Green Lane East at Leslie Street (Signalized)	Overall	0.71	37	D	0.95	49	D
	EBL	0.22	16	B	0.65	44	D
	EBT	0.68	30	C	0.72	35	C
	EBR	0.46	26	C	0.41	28	C
	WBL	0.45	21	C	0.41	25	C
	WBT	0.47	24	C	0.96	53	D
	WBR	0.08	19	B	0.27	26	C
	NBL	0.69	48	D	0.98	78	E
	NBT	0.45	54	D	0.90	68	E
	NBR	0.06	50	D	0.26	48	D
	SBL	0.85	63	E	0.68	53	D
	SBT	0.78	63	E	0.55	56	E
	SBR	0.04	50	D	0.07	51	D
Green Lane East at Harry Walker Parkway (Signalized)	Overall	0.60	16	B	0.75	28	C
	EBL	0.09	12	B	0.33	23	C
	EBT	0.63	19	B	0.67	22	C
	EBR	0.15	12	B	0.06	13	B
	WBL	0.63	22	C	0.38	18	B
	WBT	0.38	7	A	0.68	17	B
	WBR	0.06	5	A	-	-	-
	NBL	0.19	57	E	0.77	61	E
	NBTR	0.18	64	E	0.80	75	E
	SBL	0.49	73	E	0.64	70	E
Green Lane East at Highway 404- Southbound Off-Ramp (Signalized)	Overall	0.45	18	B	0.58	20	B
	EBT	0.26	13	B	0.56	17	B
	WBTR	0.50	16	B	0.76	21	C
	SBL	0.37	24	C	0.28	23	C
	SBR	0.38	25	C	0.30	24	C
Green Lane East at Highway 404 Northbound Off-Ramp/MTO Carpool Lot (Signalized)	Overall	0.39	25	C	0.54	31	C
	EBL	0.02	11	B	0.02	23	C
	EBTR	0.19	12	B	0.31	26	C
	WBTR	0.16	15	B	0.27	29	C
	NBL	0.77	39	D	0.77	34	C
	NBT	0.76	39	D	0.76	34	C
	NBR	0.03	25	C	0.05	21	C
	SBL	-	-	-	0.04	51	D
Expansion of Harry Walker Parkway at Site Access (Unsignalized)	SBR	0.01	40	D	0.01	50	D
	EBL	0.03	8	A	0.07	9	A
	NBT	0.05	4	A	0.03	6	A
	SBTR	0.01	0	-	0.03	0	-



The traffic capacity analysis results for the intersections in the study area under the projected 2034 future total traffic conditions indicate that overall intersection performance is generally acceptable, although some movements are approaching capacity.

During the p.m. peak hours, the northbound left turn (NBL) and northbound through (NBT) movements at the Green Lane East and Leslie Street intersection have v/c ratios of 0.98 and 0.90, respectively, resulting in LOS E. Additionally, the westbound through (WBT) movement at this intersection has a v/c ratio of 0.96, resulting in LOS D.

Overall, with the addition of the proposed development to the study area, most intersections are projected to operate well. However, continuous monitoring is recommended, particularly at the Green Lane East and Leslie Street intersection, to assess the need for future improvements.

8 QUEUING ANALYSIS

A summary of the 95th percentile queues derived from microsimulation of baseline 2024, future background, and future total conditions in 2029, and 2034 are shown in **Table 8-1** and **Table 8-2** for all exclusive and shared through-turning movements, as well as all movements at MTO ramps to provide the simulated length of the traffic queues.

Table 8-1 95th Percentile Queues for Existing and Future Background Conditions

Intersection	Movement	Storage (m)	95 th Percentile Queue (m)					
			Existing 2024		Background 2029		Background 2034	
			AM	PM	AM	PM	AM	PM
Green Lane East at Leslie Street (Signalized)	EBL	125	17	28	19	42	19	42
	EBR	70	43	36	63	57	74	65
	WBL	185	23	16	24	16	24	16
	WBR	85	-	37	4	43	4	47
	NBL	55	62	148	69	188	69	193
	NBR	35	5	33	6	34	6	34
	SBL	85	100	47	100	48	100	48
	SBR	35	-	4	-	9	-	9
Green Lane East at Harry Walker Parkway (Signalized)	EBL	65	-	-	3	5	4	42
	EBR	65	4	6	21	5	24	65
	WBL	50	12	9	20	13	35	16
	WBR	30	-	-	3	-	3	47
	NBL	-	17	87	20	98	20	193
	NBTR	-	12	58	-	-	-	34
	SBL	60	-	-	20	29	20	48
	SBTR	-	-	-	-	-	-	9
Green Lane East at Highway 404- Southbound Off-Ramp (Signalized)	SBL	395	18	27	32	32	42	37
	SBR	395	16	28	33	33	43	39
Green Lane East at Highway 404 Northbound Off-Ramp/MTO Carpool Lot (Signalized)	EBL	20	4	4	4	4	4	4
	WBTR	-	19	42	23	40	26	43
	NBL	395	58	127	72	147	78	168
	NBLT	395	57	127	73	147	79	167
	NBR	395	-	3	-	5	-	7
	SBL	-	-	-	-	5	-	5
	SBR	-	-	-	-	-	-	-



Table 8-2 95th Percentile Queues for Future Total Conditions

Intersection	Movement	Storage (m)	95 th Percentile Queue (m)			
			Future Total 2029		Future Total 2034	
			AM	PM	AM	PM
Green Lane East at Leslie Street (Signalized)	EBL	125	19	42	19	42
	EBR	70	63	58	74	66
	WBL	185	24	19	24	19
	WBR	85	4	44	4	48
	NBL	55	69	188	69	193
	NBR	35	10	43	10	43
	SBL	85	102	48	102	48
	SBR	35	-	9	-	9
Green Lane East at Harry Walker Parkway (Signalized)	EBL	65	9	15	10	18
	EBR	65	20	6	23	6
	WBL	50	23	14	38	14
	WBR	30	6	-	6	-
	NBL	-	21	95	21	93
	NBTR	-	22	88	22	90
	SBL	60	26	39	26	39
	SBTR	-	-	19	-	19
Green Lane East at Highway 404- Southbound Off-Ramp (Signalized)	SBL	395	34	32	44	37
	SBR	395	36	33	46	39
Green Lane East at Highway 404 Northbound Off-Ramp/MTO Carpool Lot (Signalized)	EBL	20	4	4	4	4
	WBTR	-	24	40	27	43
	NBL	395	76	147	82	168
	NBLT	395	77	147	83	167
	NBR	395	-	5	-	7
	SBL	-	-	5	-	5
	SBR	-	-	-	-	-
Expansion of Harry Walker Parkway at Site Access (Unsignalized)	EBL	-	1	2	1	2
	NBTR	-	2	1	2	1

Under existing, future background, and future total conditions, all 95th percentile queues appear to be accommodated by the available storage except for some movements on Green Lane East at Leslie Street and Harry Walked Parkway. With that said, all 95th percentile queues which exceed available storage are expected to have 50th percentile queues which are within the available storage or two-way left-turn lanes. All other queues appear to be accommodated by the available storage. No queueing concerns appear present at the MTO Highway 404 off-ramps.

9 PARKING ASSESSMENT

9.1 Site Parking Requirements

The parking requirements for developments in the Town of East Gwillimbury are governed by Zoning By-law 2018-043, Part 5.0.

The proposed development will include automotive dealership. The proposed parking supply and minimum parking rate requirements under Zoning By-law 2018-043 Section 5-10 provided in **Table 9-1**.

Table 9-1 Parking Requirements and Proposed Parking Supply

Land Use	Units/ Density	Minimum Required Parking Supply	Required Parking Supply	Proposed Parking Supply
Automotive Dealership	4,622.30 m ²	1/30 m ²	155	155

As can be seen in the above table, the site meets the minimum number of parking spaces required by the zoning by-law.

9.2 Accessible Parking Spaces

In accordance with the City's Zoning By-law 2018-043, Section 5C, accessible parking spaces must be provided on-site for persons with disabilities. The required number of accessible parking spaces has been calculated based on the effective parking space rates, as outlined in the by-law. **Table 9-2** summarizes the minimum accessible parking space requirements for the proposed development.

Table 9-2 Accessible Parking Requirements

Land Use	Effective Parking Rate	Gross Floor Area	Effective Parking Spaces	
			Required	Proposed
Automotive Dealership	1+3% of the total number of parking spaces provided	4,622.30 m ²	3 Type A	3 Type A
			3 Type B	3 Type B

As per Table 5C of the City's Zoning By-law, for developments with a total of 101-200 effective parking spaces, a minimum of 3% of the total parking spaces, plus 1 additional accessible parking space, is required. Therefore, the minimum number of accessible parking spaces required on-site is 6. The proposed development meets the minimum requirement for accessible parking spaces.



It provides 3 Type A and 3 Type B spaces, totaling 6 accessible parking spaces, which satisfies the by-law requirement of 6 spaces. Therefore, the proposed development complies with the accessible parking space requirements outlined in the City's Zoning By-law.

10 SITE CIRCULATION REVIEW

10.1 Site Access

Site access will be provided via the Harry Walker Parkway extension with a full movement, unsignalized intersection. The access will accommodate both passenger cars and heavy vehicles entering and exiting from Harry Walker Parkway.

10.2 Site Circulation

10.2.1 Passenger Vehicles

Passenger vehicle turning movements were simulated using a TAC passenger vehicle, indicating that vehicles can access the site and circulate the parking area without conflict, as shown in **Appendix G**. TYLin's review confirmed that all aisle and parking space dimensions meet or exceed the requirements, with no locations posing critical maneuvers for passenger vehicles.

10.2.2 Emergency Vehicle

Emergency fire truck turning movements were simulated using a Newmarket Fire Truck, confirming that the proposed fire route, highlighted in **Appendix G**, meets all Ontario Building Code requirements. The vehicle can circulate the site without issues, and all drive aisles comply with the required dimensions per Ontario Building Code 3.2.5.6.

10.2.3 Waste Collection Vehicle

The turning movements of a waste collection truck were simulated using a Typical Front-Load Garbage Truck. The vehicle can access the site and circulate around it without conflicts, as shown in **Appendix G**.

10.3 Pavement Marking and Signage Plan

A pavement marking and signage plan has been prepared for the proposed development as shown in **Appendix H**. Note that signage may also be further implemented as needed to improve wayfinding or enforcement.

11 MULTI-MODAL LEVEL OF SERVICE REVIEW

The multi-modal level of service (MMLOS) was determined for future conditions based on criteria outlined in York Region's Transportation Mobility Plan Guidelines (November 2016). The transit, pedestrian, and cycling modes were reviewed.

11.1 Level of Service Review

11.1.1 Transit Level of Service

Table 11-1 summarizes the proposed transit level of service near the subject site, based on the criteria outlined in York Region's Transportation Mobility Plan Guidelines (November 2016). Assumptions about the locations of future stops were made, including potential stops on Green Lane at Leslie Street, Harry Walker Parkway, and the MTO Carpool Parking lot east of Highway 404.

Table 11-1 Transit Level of Service

Intersection	Direction	Access to Transit Stops	Transit Headways	Intersection Approach (Transit or Corb Lanes)
		LOS	LOS	LOS
Green Lane at Leslie Street	Eastbound	D	C	B
	Westbound	D	C	C
	Northbound	D	C	E
	Southbound	D	C	E
Green Lane at Harry Walker Parkway	Eastbound	C	C	B
	Westbound	C	C	B
	Northbound	C	C	D
	Southbound	C	C	D
Green Lane at Highway 404 Southbound Off-ramp	Eastbound	D	C	B
	Westbound	D	C	D
	Southbound	D	C	C
Green Lane at Highway 404 Northbound Off-ramp/MTO Carpool Parking Lot	Eastbound	F	C	C
	Westbound	F	C	C
	Northbound	F	C	C
	Southbound	F	C	E

Under future conditions, most locations are expected to meet transit LOS targets (LOS C or better for transit access and headways, and LOS D or better for intersection approaches). Most intersections are anticipated to achieve an LOS of D or better, except for the MTO Carpool Parking Lot. According to York Region's TMP (2016), under the future frequent transit network, all locations are expected to achieve transit headway LOS C or better. Based on delay and v/c ratios, most intersection approaches

will have an LOS of D or better, except for all approaches at Green Lane and Leslie Street, and the northbound and southbound approaches at Green Lane and Harry Walker Parkway.

11.1.2 Pedestrian Level of Service

Table 11-2 summarizes the proposed pedestrian level of service near the subject site, based on the criteria outlined in York Region's Transportation Mobility Plan Guidelines (November 2016) and planned pedestrian improvements across the network, such as multi-use paths.

Table 11-2 Pedestrian Level of Service

Intersection	Direction	Segment LOS		Intersection LOS
		Description	LOS	
Green Lane at Leslie Street	Eastbound	Green Lane	A	A
	Westbound	Green Lane	A	A
	Northbound	Leslie Street	A	A
	Southbound	Leslie Street	A	A
Green Lane at Harry Walker Parkway	Eastbound	Green Lane	A	A
	Westbound	Green Lane	A	A
	Northbound	Harry Walker Parkway	B	C
	Southbound	Harry Walker Parkway	C	C
Green Lane at Highway 404 Southbound Off-ramp	Eastbound	Green Lane	A	A
	Westbound	Green Lane	A	A
	Southbound	Highway 404 Southbound Off-ramp	F	F
Green Lane at Highway 404 Northbound Off-ramp/MTO Carpool Parking Lot	Eastbound	Green Lane	A	A
	Westbound	Green Lane	A	A
	Northbound	Highway 404 Northbound Off-ramp	F	C
	Southbound	MTO Carpool Lot	F	C

Under future conditions, most segments are expected to meet the minimum target pedestrian LOS of C or better, except for the highway off-ramp segments, which will have LOS F due to pedestrian restrictions. All intersections are anticipated to meet the target pedestrian LOS of C or better, as crosswalks are expected to be provided.



11.1.3 Bicycle Level of Service

The bicycle level of service was reviewed, with results presented in Error! Reference source not found..

Table 11-3 Bicycle Level of Service

Intersection	Direction	Segment LOS		Intersection LOS
		Description	LOS	
Green Lane at Leslie Street	Eastbound	Green Lane	A	A
	Westbound	Green Lane	A	A
	Northbound	Leslie Street	A	A
	Southbound	Leslie Street	A	A
Green Lane at Harry Walker Parkway	Eastbound	Green Lane	A	A
	Westbound	Green Lane	A	A
	Northbound	Harry Walker Parkway	D	D
	Southbound	Harry Walker Parkway	A	D
Green Lane at Highway 404 Southbound Off-ramp	Eastbound	Green Lane	A	A
	Westbound	Green Lane	A	A
	Southbound	Highway 404 Southbound Off-ramp	F	F
Green Lane at Highway 404 Northbound Off-ramp/MTO Carpool Parking Lot	Eastbound	Green Lane	A	A
	Westbound	Green Lane	A	A
	Northbound	Highway 404 Northbound Off-ramp	F	F
	Southbound	MTO Carpool Lot	F	F

Under future conditions, only one intersection will meet both the minimum segment and intersection cycling LOS of C or better

12 TRANSPORTATION DEMAND MANAGEMENT

Transportation Demand Management (TDM) refers to a variety of strategies to reduce congestion, minimize the number of single-occupant vehicles, encourage non-auto modes of travel, and reduce vehicle dependency to create a sustainable transportation system. TDM strategies have multiple benefits including the following:

- ▶ Reduced auto-related emissions to improve air quality
- ▶ Decreased traffic congestion to reduce travel time
- ▶ Increased travel options for businesses and commuters
- ▶ Reduced personal transportation costs and energy consumptions

The combined benefits listed above will assist in creating a more active and livable community through improvements to overall active transportation facilities for the local residents, visitors, businesses and the surrounding community.

- ▶ Typical TDM measures include:
 - ▶ Carpool/vanpool ride sharing, with emergency ride home.
 - ▶ High-occupancy vehicle (HOV) lanes in existing rights-of-way for bus, taxis and cars with three or more occupants.
 - ▶ Bicycle and pedestrian programs.
 - ▶ Promotion of public transit.
 - ▶ Parking supply and management strategies.
 - ▶ Use of “smart card” technology and other advances in the pricing and marketing of transportation services.
 - ▶ Establishment of Transportation Management Associations (TMA’s) in employment areas and car sharing organizations in residential areas.
 - ▶ Programs to promote flexible working hours and telecommuting; and
 - ▶ Application of incident management system and Intelligent Transportation Systems (ITS) innovations.

Site-specific Transportation Demand Management (TDM) measures for the proposed site are developed with a primary objective to reduce single occupancy vehicle use. The plan will review opportunities to set realistic targets for increased use of carpooling, transit, cycling, and walking trips.

This section will focus on:

- ▶ Identification of site related TDM measures that address Town of Whitby objectives; and
- ▶ TDM program implementation, as well as on-going evaluation and monitoring approach.

12.1 Objectives

York Region Transportation Master Plan

York Region's Transportation Master Plan (2016) sets out to respond to the challenge to "create an advanced interconnected system of mobility in the GTHA in order to give York Region residents and business a competitive advantage making York Region the best place to live, work and play in the GTHA." This outlook aligns with the benefits of TDM strategies, and as a result the following three TMP Objectives are well positioned to benefit a comprehensive TDM plan for the subject site.

Objective 1: Create a World Class Transit System

York Region will have a World Class Transit System when there is a seamless interconnected system of subways, rapidways, a frequent transit network and other services that meet the needs of all York Region residents and businesses. This system will help to direct growth to Centres and Corridors and ensure a compact, mixed-use built form that minimizes the need for travel and reduces dependence on single occupant vehicles.

Objective 2: Develop a Road Network Fit for the Future

A Road Network Fit for the Future will use technology and innovation to optimize the road network by leading in traffic management, urban design and providing opportunities to support all modes of travel within the Region's right-of-way, including transit, driving, cycling and walking.

Objective 3: Integrate Active Transportation in Urban Areas

Focusing on improving the viability of active transportation in York Region's urban areas is vital to ensuring a sustainable transportation system for the future. The Region recognizes the benefits of providing a variety of active transportation options, including improved health of residents, better air quality and reduced greenhouse gas emissions, a more connected and efficient transportation network, reduced traffic congestion and less dependence on the automobile.

Objective 4: Maximize the Potential of Employment Areas

Through technology and partnerships, the Region will identify opportunities to efficiently and safely move employees and goods around and through York Region to support ongoing economic growth.

Objective 5: Make the Last Mile Work

The “last mile” refers to the point or moment when consumer decisions are actually made. It refers to the tactics used to increase adoption of transit and active transportation while lowering the amount of single occupant vehicle use especially during peak periods.

The results of this policy focus are seen in the discussions below on opportunities being applied to enhance TDM opportunities throughout the study area and region. In particular, the focus on the Last Mile is worth noting as it will greatly benefit TDM strategies. As part of this objective, the TMP recommends the provision of safe and convenient walking/cycling opportunities to mobility hubs, managing parking supply and demand with innovation in pricing and technology; and embracing emerging technologies and the sharing economy to improve convenience and mobility. These actions are fundamental to a robust TDM plan for the subject site.

12.2 Proposed TDM Measures

The TDM approach includes a combination of hard and soft measures aimed at reducing vehicular travel demand and promoting passenger transit, cycling, and walking. Details of these proposed TDM opportunities will be reviewed and discussed as follows.

12.2.1 Active Transportation Network

Pedestrian Connectivity

Sidewalks and trails along the Harry Walker Parkway extension, as proposed in the 2019 Town TMP update, will enhance pedestrian connectivity between the site and the broader network. Additionally, a future multi-use trail along Leslie Street will provide a direct pedestrian link from the site access to Leslie Street.

Current sidewalk gaps exist on Green Lane (north side from west of Leslie Street to east of the MTO Carpool lot, and south side from west of Leslie Street to east of the MTO Carpool lot), as well as on both sides of Leslie Street north of Green Lane and the west side of Harry Walker Parkway. The 2019 Town TMP update proposes multi-use paths along Green Lane and Leslie Street (from the MTO Carpool lot to west of Leslie Street and from Green Lane north of the study area). The 2016 TMP indicates that the path along Leslie Street north of Green Lane is expected to be completed by 2026. These improvements will better connect pedestrians to the site and surrounding areas, helping to reduce auto-dependency in the region.

Cycling Network Connectivity

Currently, there are no dedicated bicycle facilities within the study area. However, multi-use paths are proposed along Green Lane and Leslie Street in both the 2019 Town TMP update and the 2016 York Region TMP, offering an opportunity to enhance the cycling network. The Harry Walker Parkway extension is planned as a bikeway (with bike lanes or a signed bike route) in the Town TMP update. Additionally, the Highway 404 Employment Corridor suggests a multi-use trail along Harry Walker Parkway north of Green Lane, further connecting cyclists to the Town and Region's cycling network.

Transit Service Expansion and Incentives

York Region, in partnership with the Province of Ontario and the Government of Canada, is investing in GO Regional Express Rail, Viva Rapidways, YRT frequent transit, and specialty transit services. These investments will create an integrated transit system linking York Region communities and connecting residents to the Greater Toronto and Hamilton Area.

The 2016 York Region TMP designates Green Lane (between Highway 404 and East Gwillimbury GO) and Leslie Street (from Newmarket to Queensville) as part of the frequent transit network, with services every 15 minutes or less, to be implemented between 2027 and 2031. A proposed bus rapidway between Yonge Street and East Gwillimbury GO station will further enhance connectivity from 2032 to 2041. Additionally, improvements include two-way all-day GO Train service with 15-minute intervals on the Barrie line and four new stops. These developments will expand transit options and support multi-modal transportation needs, benefiting future employers and employees with efficient local and regional transit, cycling infrastructure, and pedestrian connections.

12.2.2 Bicycle Parking

With planned improvements to the cycling network in and around the study area, providing bicycle parking spaces will encourage employers and employees to consider cycling as a mode of transportation to and from the site.

12.2.3 Transit Incentives

According to the TDM checklist in Section 13.4, the applicant should consider providing PRESTO cards for employees, with the number and distribution at their discretion.

The owner must include in the Purchase Agreement a commitment to inform potential purchasers about existing and future transit services. This includes details on current and future transit routes, bus stops, and shelters. Information should be provided through marketing materials (YRT/Viva route maps, plans) and included in purchase or lease agreements.

12.2.4 Rideshare Services

With ride-hailing services like Uber and Lyft, employers, employees, and visitors have flexible alternatives to transit, cycling, and driving for short trips. These rideshare options can assist those without cars in reaching local transit stations, retail areas, or services, providing door-to-door convenience. Often, ridesharing is more cost-effective than traditional taxis and serves those who may not utilize active transportation. For the proposed automotive dealership development, these services offer valuable transportation options for customers and employees who may need alternative ways to access the site.

12.2.5 Carpooling/ Smart Commute

Carpooling offers a cost-effective, eco-friendly alternative to driving alone, reducing expenses and vehicle wear. It also lessens congestion and parking needs. Carpooling is beneficial for daily commutes and for individuals with physical limitations. The proposed automotive dealership includes designated carpool parking spaces to encourage this practice and reduce single-occupant vehicle use.

12.2.6 Information Brochure

The TDM opportunities outlined in this section would benefit from a customized commuter options brochure for prospective and new employees. This brochure should include details on local and regional transit, HOV lanes, pedestrian trails, cycling facilities, and carpool options. It could feature a community map, York Region Transit and GO Transit route maps, schedules, and information about York Region Smart Commute programs.

To encourage cycling, target recreational cyclists who are familiar with the Town's cycling network. For those unfamiliar with cycling for commuting, provide a Bicycle Network Way-finder Map and practical advice on routes, bike parking, and weather considerations.

For short-distance commuters, highlight the convenience, cost savings, and health benefits of walking or cycling. Information on these options, as well as carpooling, car-sharing, and shuttle services for those with physical limitations, should be included in regular communications to better inform and support employees.

12.2.7 Communication Strategy

The developer should create a Communication Strategy outlining the steps to assist the Region and the Town of East Gwillimbury in delivering Information Packages and pre-loaded PRESTO Cards to employees. This strategy should include a designated distribution location and coordination for these materials. The applicant is responsible for organizing and providing a venue for PRESTO card distribution events. Each event, lasting approximately 2 hours, can accommodate

around 50 individuals. The applicant must coordinate with York Region/York Region Transit Staff and provide at least 2 months' notice for event scheduling.

12.3 TDM Measures for Implementation

Site Assessment

The owner shall schedule an onsite assessment with the Town of East Gwillimbury and the property manager to evaluate the infrastructure accessibility for all commuting modes and surrounding land uses. This review will help identify cost-effective transportation strategies to reduce auto trips and improve connectivity for the automotive dealership development.

Baseline Commuter Survey

The owner shall conduct a confidential transportation survey among all employees at the proposed automotive dealership. This comprehensive survey will assess current commuter traffic patterns, transportation modes, behaviors, and perceptions. The results will help identify the demand for sustainable transportation options and opportunities to improve site access and reduce auto trips, such as through an employee-initiated carpooling program.

Follow-Up Commuter Survey

The owner will conduct a follow-up TDM survey two years after the initial baseline commuter survey. This follow-up will identify successes and areas for improvement in sustainable transportation options for the dealership and surrounding area. Based on the results, a revised work plan should be developed with strategies to enhance sustainable transportation and better meet the needs of employees.

12.4 TDM Checklist

York Region, in consultation with local municipalities, has developed a Transportation Demand Management (TDM) checklist to guide the creation of a comprehensive TDM Plan. York Region and local municipalities will also consider additional recommendations beyond the checklist, provided they align with the objectives of the Regional and local Official Plans and policies.

The completed TDM checklist is included in the Transportation Demand Management Plan section for review by Regional and local municipal staff. A summary of the TDM checklist is provided in **Table 12-1**.



Table 12-1 TDM Checklist

TDM Measures	Requirement	Responsibility	Cost
Transit incentives (i.e. PRESTO cards)	Yes	Applicant	\$25 pre-loaded PRESTO card, depending on the number of employees
Information packages (YRT/Viva maps, GO schedules, cycling maps)	Yes	Applicant	Approximately \$10 per package
Communication strategy and physical location to deliver PRESTO cards and information packages	Yes	Applicant	Approximately \$500.00 (print costs) for distribution
Outreach programs	Yes	Applicant	TBD
Pedestrian connections	Yes	Applicant	-
Cycling connections	Yes	Applicant	-
Ped/cycling connections to transit facilities	Yes	Applicant	-
Internal pedestrian/cycling circulation	Yes	Applicant	-
Active transportation network/fine grid	Yes	Applicant	-
Bicycle parking/shelter	Yes	Applicant	-
Carpool Parking	Yes	Applicant	-
Shared parking between land uses	Yes	Applicant	-
Membership with Smart Commute	Yes	Applicant	-
Monitoring program/report	Yes	Applicant	\$5,000 Cost assumed to organize the printing, distribution and collection of all surveys

13 CONCLUSIONS AND RECOMMENDATIONS

The conclusions and recommendations for the analysis associated with the proposed development are as follows:

- ▶ Under existing conditions all the study intersections operate within capacity during the a.m. peak hours, with most achieving an acceptable level of service (LOS). However, some movements at key intersections experience higher delays during the p.m. peak hour. Overall, the road network demonstrates acceptable delays and reserve capacity.
- ▶ Under 2029 future background conditions all intersections are expected to operate with reserve capacity and acceptable delays following proposed optimizations. However, certain movements at the Green Lane East and Leslie Street intersection are nearing capacity, indicating the need for ongoing monitoring for improvements.
- ▶ Under 2034 future background conditions all intersections are anticipated to maintain acceptable levels of service and manageable delays. Key movements at the Green Lane East and Leslie Street intersection may require attention, emphasizing the need for continued monitoring.
- ▶ The analysis for the 2029 future total conditions indicates that intersections will generally function well when incorporating both background traffic and site-generated traffic. Continued monitoring is recommended for critical movements at the Green Lane East and Leslie Street intersection.
- ▶ The analysis for the 2034 future total conditions indicates that overall intersection performance remains acceptable, although some movements are approaching capacity. Continued monitoring of the Green Lane East and Leslie Street intersection is essential to assess future improvement needs.
- ▶ TYLin recommends that the Town of East Gwillimbury and York Region monitor the Green Lane East and Leslie Street intersection to assess the need for mitigation measures. This will help determine whether the planned improvements to the overall network will adequately address the capacity constraints.
- ▶ The subject site is expected to generate 68 inbound and 25 outbound trips during the a.m. peak hour, and 44 inbound and 67 outbound trips during the p.m. peak hour.
- ▶ There are no queuing issues on the MTO off-ramps for any of the assessed horizons.
- ▶ The proposed site access and internal layout comply with the design vehicle standards and relevant guidelines.
- ▶ The site meets the required number of parking spaces as outlined in the Town's zoning by-law.



Appendix A:

Pre-Consultation Correspondence

Baharak Hosseini

From: Schleihauf, David <David.Schleihauf@york.ca>
Sent: Friday, August 23, 2024 1:08 PM
To: Jonathan Law
Cc: Michael Dowdall; Baharak Hosseini; Mulrenin, Colin (MTO); Bui, Vi
Subject: RE: Toyota Green Lane (1656 Green Lane E) - Traffic Terms of Reference

Hello Jonathan,

Please see our comments below regarding the TOR.

1. The transportation study shall be consistent with the Region's [Transportation Mobility Plan Guidelines](#) (November 2016), and consistent with the Region's [Access Guidelines](#) (November 2020).
2. No access to Green Lane will be permitted, all access shall be through local roads.
3. As per the Region's [2024 10-Year Roads and Transit Capital Construction Program](#), there are planned improvements in the vicinity of the site. These improvements are not expected to affect the lane existing lane configuration at Leslie/Green Lane.
4. The Region accepts growth calculations in three different ways, namely from historic AADT analysis, EMME model analysis or from recently approved studies in the area. Please document the approach used in the report.
5. Traffic counts, signal timings, model outputs, and historical AADTs or model outputs can be purchased through traffic.data@york.ca (if needed).
6. New turning movement counts are required if the data is more than two years old.
7. The applicant is advised that the site shall be designed to accommodate deliveries on-site. These activities will not be permitted on Green Lane.
8. The Owner shall provide a basic 43 metre right-of-way for this section of Green Lane. All property lines shall be referenced from a point 21.5 metres from the centerline of construction on Green Lane and any lands required for additional turn lanes at the intersections will be conveyed to York Region for public highway purposes, free of all costs and encumbrances, to the satisfaction of York Region Solicitor.

Please note, this is not an approval, the Region will provide additional detailed comments when the study is submitted for review.

Regards,

Our working hours may be different. Please do not feel obligated to reply outside of your scheduled working hours. Let's work together to help foster healthy work-life boundaries.

David Schleihauf, P.Eng. | Senior Transportation Planning Specialist, Transportation Development Planning, Transportation & Infrastructure Planning Branch, Public Works Department

1-877-464-9675 ext. 77857

Our Mission: **Working together to serve our thriving communities – today and tomorrow**

From: Jonathan Law <jonathan.law@tylin.com>
Sent: Tuesday, August 13, 2024 3:41 PM
To: Schleihauf, David <David.Schleihauf@york.ca>; Mulrenin, Colin (MTO) <Colin.Mulrenin@ontario.ca>
Cc: Michael Dowdall <michael.dowdall@tylin.com>; Baharak Hosseini <baharak.hosseini@tylin.com>
Subject: FW: Toyota Green Lane (1656 Green Lane E) - Traffic Terms of Reference

CAUTION! This is an external email. Verify the sender's email address and carefully examine any links or attachments before clicking. If you believe this may be a phishing email, forward it to isitsafe@york.ca then delete it from your inbox. If you think you may have clicked on a phishing link, report it to the IT Service Desk, ext. 71111, and notify your supervisor immediately.

Hi David & Colin,

I realize I forgot to send the terms of reference for the proposed development at 1656 Green Lane E (Toyota). Please see the terms of reference below and let me know if you have any questions.

Jonathan D. Law, P.Eng.

PROJECT MANAGER, TRANSPORTATION ENGINEER

T +1 416.568.5695

jonathan.law@tylin.com

TYLin

From: Jonathan Law

Sent: Friday, July 26, 2024 12:54 PM

To: Brake, Kevin <kbrake@eastgwillimbury.ca>; 'pneuman@eastgwillimbury.ca' <pneuman@eastgwillimbury.ca>

Cc: Michael Dowdall <michael.dowdall@tylin.com>; 'Michael Pizzimenti' <mpizzimenti@westonconsulting.com>;

Baharak Hosseini <baharak.hosseini@tylin.com>

Subject: Toyota Green Lane (1656 Green Lane E) - Traffic Terms of Reference

Hello Kevin & Paul,

We are preparing a Transportation Impact Study for a proposed Toyota Automotive Dealership development located at 1656 Green Lane East, East Gwillimbury (which we are referring to as "Toyota Green Lane" to prevent confusion). The subject site is located in the northwest quadrant of Green Lane East and Harry Walker Parkway and is currently vacant and undeveloped. The proposed development includes a total GFA of 42,830 sq. ft., including interior and aftersales areas, with approximately 426 parking spaces provided. We are building upon our previous studies prepared for 1656 Green Lane East & 18368 Leslie Street, prepared for RICE Group, with similar assumptions.

As part of our proposed Traffic Impact Study, we have prepared the following terms of reference for your review:

- **Study Area Intersections:**

- Green Lane East and Harry Walker Parkway
- Green Lane East and Leslie Street
- Green Lane East and Highway 404 South East-West Off-Ramp
- Green Lane East and Highway 404 North East-West Off-Ramp / Carpool Parking Lot Access
- Future EW Collector Road & Leslie Street

- **Signal Timing Plan:**

Could you please provide the latest signal timing plans for the study intersections? Our latest STPs for the intersections are dated as follows: (Please confirm if these can be used for this study)

- Leslie St & Green Lane, December 2018.
- Green Lane & Harry Walker Parkway, November 2019.
- HWY 404 NB Off Ramp & Green Lane, November 2019.
- Hwy 404 SB Off Ramp & Green Lane, November 2016.

- **Data Traffic and Growth Projections:**

- We propose to collect turning movement count data for the study intersections during the weekday AM (7-9) and PM (4-6) peak periods. Our latest traffic counts are dated August 2021 for the above intersections. Please confirm if these counts may continue to be relied upon or if there are updated historical counts that can be utilized.
- Could you please provide a growth rate? Our previous growth rate assumptions were 1.5% growth rate to traffic on Leslie Street and 2.0% growth on Green Lane and both Highway 404 off-ramp volumes. Please confirm if these are still applicable for the 5-year and 10-year horizon calculations.

- **Background Developments Information:**

We are proposing to include the following background developments:

- Murrell Boulevard & Green Lane East (Commercial Development)
- 18335 Leslie Street (Childcare Facility/ Note: this site has been constructed and in operation and would only be included as background based on the 2021 TMC's and would be considered as existing traffic).
- 18368 Leslie Street (or 1656 Green Lane Northwest is a Proposed Industrial Development)
- 1656 Green Lane East (Proposed Industrial Development)

Please confirm if these are sufficient or provide any additional background developments or road improvements planned within the study area from 2024 to 2034, along with the forecasted generated trips.

- **Traffic Modeling:** We propose to use Synchro for the existing/baseline traffic assessment, future background traffic projections, and future total analysis. This includes operations during critical weekday AM and PM peak periods
- **Traffic Assessment:** We will evaluate traffic impact using ITE Trip Generation and TTS data, including trip generation and distribution across the network.
- **Site Plan Review and Loading Study:** We will conduct Auto TURN vehicle maneuvering analysis for essential vehicles (passenger cars, emergency, loading, and waste collection). We will also prepare an Active Transportation Circulation Plan focusing on pedestrian and cycling connectivity.
- **Parking Review:** We will compare the proposed parking supply to the Town's Zoning By-law requirements, calculate the number of required parking spaces (including accessible parking), and confirm the adequacy of the proposed supply.
- **Transportation Demand Management:** We will review TDM techniques that could be applied to the development to reduce single-occupant private vehicle trips and promote a shift to transit and active transportation modes.
- **Multi-modal Level of Service Assessment:** A multi-modal level of service assessment will also be provided based on the Region's transportation mobility plan guidelines.

If you need more information from our side, please let me know. I look forward to your confirmation on the proposed scope and objectives.

Jonathan D. Law, P.Eng.

PROJECT MANAGER, TRANSPORTATION ENGINEER
T +1 416.568.5695

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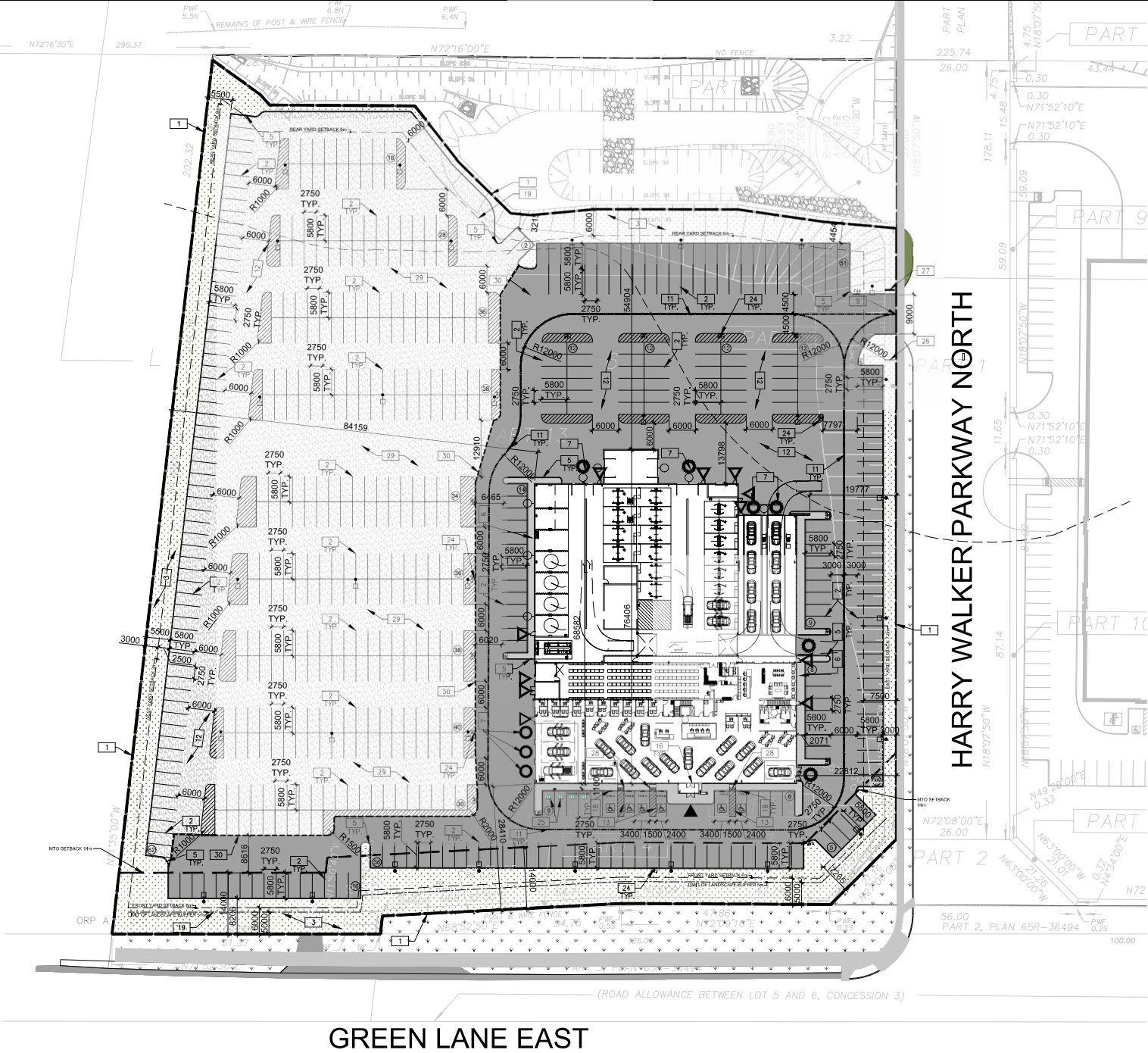




Appendix B:

Site Plan

W:\TOR\24\0080\00\Architectural\Cad\SD\0080_A100.dwg



OVERALL SITE PLAN
SCALE: 1:600
CONSTRUCTION NORTH TRUE NORTH

SITE PLAN NOTES

- PROPERTY LINE
- 2700x5800 PARKING STALL, PAINTED PARKING STRIPPING PER THE TOWN OF EAST GWILLIMBURY STANDARDS.
- LANDSCAPING (SEE LANDSCAPING DWG.)
- YELLOW PAINTED LINES FOR PEDESTRIAN ACCESS
- 150mm WIDE CURB
- MIN. 1500mm WIDE CONCRETE SIDEWALK TYPICAL U.N.O
- HEATED CONCRETE PAD WITH PAINTED LINE TO INDICATE DOOR ACTIVATION
- FIRE DEPARTMENT/SIAMSE CONNECTION
- MUNICIPAL SIDEWALK & CURB ACROSS PROPOSED ACCESS TO BE HEAVY DUTY
- DETECTABLE TACTILE WARNING SURFACE, CONFORMING TO 2012 O.B.C.
- FIRE ACCESS ROUTE. MIN 12.0M TURNING RADIUS
- HATCHED AREA DENOTES HEAVY DUTY ASPHALT. TYPICAL FOR ALL AREAS REQUIRING TRACTOR TRUCK ACCESS.
- TYPICAL SHARED ACCESSIBLE PARKING STALLS, PAINTED PARKING STRIPPING PER MUNICIPAL STANDARDS. EACH PAIR OF SHARED STALLS TO PROVIDE A MINIMUM OF (1) TYPE A (3400 MIN WIDTH) & (1) TYPE B (2400 MIN WIDTH) STALL C/W A 1.5M PAINTED AISLE - REFER TO THE TOWN OF EAST GWILLIMBURY ACCESSIBLE PARKING STANDARDS
- PROPOSED LOCATION OF TRANSFORMER C/W CONCRETE PAD
- ALL DRIVEWAYS TO BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH TOWN OF EAST GWILLIMBURY STANDARD
- PRINCIPLE ENTRY WITH POWER OPERATED AUTOMATIC DOOR OPENER AND FLUSH THRESHOLD. PROVIDE FROST SLAB BY STRUCTURAL.
- PROPOSED BICYCLE PARKING SPACE
- ACCESSIBLE PARKING SIGN INSTALLED PER MUNICIPAL STANDARDS
- LIMIT OF LANDSCAPE BUFFER
- SNOW STORAGE
- EV CAR CHARGING STATION
- PHASE 2 BUILDING OUTLINE SHOWN ON SITE FOR REFERENCE
- FIRE HYDRANT. SEE CIVIL DRAWINGS.
- FIRE ROUTE ACCESS SIGN SPACED MAX 22.86m
- PROPOSED 220 V EV CHARGER ON 24" DIAMETER CONCRETE PIER WITH 100mm DIAMETER BOLLARDS
- TOYOTA PYLON SIGNAGE
- TOYOTA DIRECTIONAL SIGN
- TACTILE INDICATOR
- HATCHED AREA DENOTES GRAVEL
- LINE SEPARATING GRAVEL AND ASPHALT DRIVEWAY

SITE LEGEND

- ASPHALT PAVEMENT (HATCHED)
- PAINTED DIAGONAL LINES WHERE INDICATED
- NEW LANDSCAPING AREA (HATCHED)
- GRAVEL AREA (HATCHED)
- FIRE ACCESS ROUTE MIN. 12.0M TURNING RADIUS
- PROPERTY LINE
- PARKING STALL COUNT TOTAL
- MAIN ENTRANCE DOOR
- EXIT DOOR
- DRIVE IN DOOR
- BARRIER-FREE PARKING SPACE WITH SIGNAGE AT SIDEWALK
- DEPRESSED CURB FOR BARRIER-FREE ACCESS
- FLUSH CURB
- PROPOSED FIRE HYDRANT
- PROPOSED SANITARY MANHOLE
- PROPOSED STORM WATER MANHOLE
- FIRE DEPARTMENT CONNECTION
- FIRE ACCESS ROUTE SIGN
- LIGHT FIXTURES (SEE PHOTOMETRIC DRAWINGS FOR DETAILS)

VICINITY MAP



VICINITY MAP
SCALE: N.T.S.

SITE STATISTICS / ZONING MATRIX		
1656 GREEN LANE EAST		
Zoning Category	M2 - MZO O. Reg 451/20	
Building Classification	Group F2 (O.B.C. A-3.1.2.1.(i))	
EAST GWILLIMBURY ZONING BY-LAW 2018-043		
Proposed Use	Motor Vehicle Sale / Rental Establishment	
GROSS SITE AREA	2.87 ha	28,661.26m²
PROPOSED BUILDING AREA:		
TOTAL GFA	49,754 SF	4,622.30m²
OVERALL SITE REQUIREMENTS		
Site Requirements	Proposed	Required
Min. Lot Area (Existing)	28,661.26m²	-
Min. Lot Frontage (m)	179.63 m	-
Maximum Building Height (m)	11.43 m	-
Min. Front Yard Building Setback (m)	28.41 m	6.00 m
Min. Ext. Side Yard Building Set back (m)	19.78 m	7.5 m
Min. Int. Side Yard Building Set back (m)	84.16 m	3.00 m
Min. Rear Yard Building Setback (m)	54.90 m	6.00 m
Landscape Requirements	Proposed	Required
Min. Front Landscape Buffer (m)	1.40 m	5.00 m
Min. Ext. Side Yard Landscape Buffer (m)	3.00 m	-
Min. Int. Side Yard Landscape Buffer (m)	3.00 m	-
Min. Rear Landscape Buffer (m)	1.40 m	-
Min. Landscape Area (% of Lot Area) - Approx.	13.84%	10.00%
Min. Landscape Area (SM) - Approx.	3,967.19m²	2,866.13m²
Min. Landscape Required by Parking Parking Area (% of Asphalted Area) - Approx.	6.05%	5.00%
Min. Landscape Required by Parking Parking Area (SM) - Approx.	554.35m²	457.78m²
Parking Area Coverage		
Asphalt Area (sm) (Asphalt Area to Cover Only the number of Total Permanent Parking Spaces)	Proposed	
	9,155.53m²	
Gravel Area (sm)	10,903.94m²	
Standard Required Parking Spaces		
Standard Required Parking Spaces	Proposed	Required
	155	155
Accessible Parking (Additional to standard parking spaces)	6	6
Parking Spaces in MTO Setback	58	58
TOTAL PERMANENT PARKING	219	161
Accessible Parking Requirements	1 + 3% of spaces of the total number of parking spaces provided	
	1 + 3%(155 Required Spaces) = 5.65 = 6 Total	
Parking Stall Dimensions	STANDARD: 2.75m X 5.8m w/ 6m Aisle; ACCESSIBLE: Type-A 3.4m X 5.8m; Type-B 2.4 X 5.8m; w/ 1.5m access aisle	
Outdoor Display & Sales Area Spaces	380	



EV CHARGER:

IN ORDER TO FUTURE-PROOF YOUR FACILITY FOR LETRIC VEHICLE CHARGING READINESS, CONDUITS (AND CONCRETE PIER FOUNDATION WITH "J" BOLTS TO MOUNT DUAL HEADED CHARGERS) SHOULD BE PREPARED TO ACCOMMODATE FOUR (4X) 220V EV CHARGERS UP TO A DC LEVEL 3 EV CHARGER.

NOTE: THIS SITE SHALL PROTECT FOR POTENTIAL FUTURE VEHICULAR INTERCONNECTION THE ADJACENT PROPERTY SHOULD THE ADJACENT LANDS REDEVELOP WITH A FUTURE COMPATIBLE LAND-USE. LOCATION TO BE DETERMINED.

WARE MALCOMB

CIVIL ENGINEERING
PLANNING
BRANDING
BUILDING MEASUREMENT
INTERIORS

6220 Highway 7, Suite 300
Vaughan, ON L4H 0R1, Canada
P.905.760.1221



TOYOTA -
NEWMARKET
1656 GREEN LANE EAST,
EAST GWILLIMBURY,
ONTARIO
L9N 0L8, CANADA

DATE	REMARKS
1 09/27/2024	ISSUED FOR REVIEW
2 09/29/2024	ISSUED FOR REVIEW
3 09/12/2024	ISSUED FOR REVIEW
4 09/27/2024	ISSUED FOR SPA
5 10/01/2024	ISSUED FOR CONSULTANTS
6 10/01/2024	CONSULTANTS

PA/PM:	J. COX
DRAWN BY.:	A.S.
JOB NO.:	TOR24-0080-00

SHEET
A100

09/27/2024 - ISSUED FOR SPA

9/24/2024 12:13:03 PM



Appendix C:

Turning Movement Counts

Accu-Traffic Inc.

Morning Peak Diagram

Specified Period

From: 7:00:00

To: 9:00:00

One Hour Peak

From: 8:00:00

To: 9:00:00

Municipality: East Gwillimbury
Site #: 2415900001
Intersection: Green Lane E & Leslie St
TFR File #: 1
Count date: 27-Aug-24

Weather conditions:

Person counted:
Person prepared:
Person checked:

** Signalized Intersection **

Major Road: Green Lane E runs W/E

North Leg Total: 1171

North Entering: 786

North Peds: 2

Peds Cross: 

	Heavys	Trucks	Cars	Totals
North	0	3	1	4
East	0	4	1	5
South	67	409	301	777
Totals	67	416	303	



Heavys 22

Trucks 7

Cars 356

Totals 385

East Leg Total: 2288

East Entering: 911

East Peds: 6

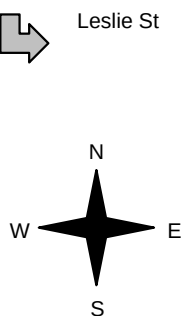
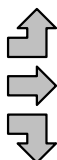
Peds Cross: 

Heavys	Trucks	Cars	Totals
37	28	903	968



Green Lane E

Heavys	Trucks	Cars	Totals
1	1	70	72
34	13	950	997
8	30	411	449
43	44	1431	



Cars	Trucks	Heavys	Totals
81	4	19	104
645	24	30	699
103	4	1	108
829	32	50	



Green Lane E



Cars	Trucks	Heavys	Totals
1328	14	35	1377

Peds Cross: 

West Peds: 1

West Entering: 1518

West Leg Total: 2486

Cars	Trucks	Heavys	Totals
923	38	12	973



Cars	Trucks	Heavys	Totals
191	4	7	202
205	2	2	209
77	0	0	77
473	6	9	

Peds Cross: 

South Peds: 2

South Entering: 488

South Leg Total: 1461

Comments

Accu-Traffic Inc.

Afternoon Peak Diagram	Specified Period From: 16:00:00 To: 18:00:00	One Hour Peak From: 16:15:00 To: 17:15:00
Municipality: East Gwillimbury Site #: 2415900001 Intersection: Green Lane E & Leslie St TFR File #: 1 Count date: 27-Aug-24	Weather conditions: Person counted: Person prepared: Person checked:	
** Signalized Intersection **	Major Road: Green Lane E runs W/E	

North Leg Total: 1484 North Entering: 523 North Peds: 0 Peds Cross:	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">2</td> <td style="text-align: right;">1</td> <td style="text-align: right;">1</td> <td style="text-align: right;">4</td> </tr> <tr> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">0</td> <td style="text-align: right;">1</td> <td style="text-align: right;">0</td> <td style="text-align: right;">1</td> </tr> <tr> <td style="text-align: right;">Cars</td> <td style="text-align: right;">90</td> <td style="text-align: right;">290</td> <td style="text-align: right;">138</td> <td style="text-align: right;">518</td> </tr> <tr> <td style="text-align: right;">Totals</td> <td style="text-align: right;">92</td> <td style="text-align: right;">292</td> <td style="text-align: right;">139</td> <td></td> </tr> </table>	Heavys	2	1	1	4	Trucks	0	1	0	1	Cars	90	290	138	518	Totals	92	292	139		<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">1</td> </tr> <tr> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">3</td> </tr> <tr> <td style="text-align: right;">Cars</td> <td style="text-align: right;">957</td> </tr> <tr> <td style="text-align: right;">Totals</td> <td style="text-align: right;">961</td> </tr> </table>	Heavys	1	Trucks	3	Cars	957	Totals	961	East Leg Total: 2826 East Entering: 1562 East Peds: 2 Peds Cross:
Heavys	2	1	1	4																											
Trucks	0	1	0	1																											
Cars	90	290	138	518																											
Totals	92	292	139																												
Heavys	1																														
Trucks	3																														
Cars	957																														
Totals	961																														

Heavys	Trucks	Cars	Totals
36	8	1730	1774

Green Lane E

Cars	Trucks	Heavys	Totals
259	1	0	260
1203	6	30	1239
61	1	1	63
1523	8	31	

Green Lane E

Heavys	Trucks	Cars	Totals
0	1	110	111
13	12	948	973
7	4	330	341
20	17	1388	

Leslie St

Cars	Trucks	Heavys	Totals
1237	13	14	1264

Peds Cross: West Peds: 0 West Entering: 1425 West Leg Total: 3199	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Cars</td> <td style="text-align: right;">681</td> </tr> <tr> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">6</td> </tr> <tr> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">9</td> </tr> <tr> <td style="text-align: right;">Totals</td> <td style="text-align: right;">696</td> </tr> </table>	Cars	681	Trucks	6	Heavys	9	Totals	696	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Cars</td> <td style="text-align: right;">437</td> <td style="text-align: right;">588</td> <td style="text-align: right;">151</td> <td style="text-align: right;">1176</td> </tr> <tr> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">2</td> <td style="text-align: right;">1</td> <td style="text-align: right;">1</td> <td style="text-align: right;">4</td> </tr> <tr> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">4</td> <td style="text-align: right;">1</td> <td style="text-align: right;">0</td> <td style="text-align: right;">5</td> </tr> <tr> <td style="text-align: right;">Totals</td> <td style="text-align: right;">443</td> <td style="text-align: right;">590</td> <td style="text-align: right;">152</td> <td></td> </tr> </table>	Cars	437	588	151	1176	Trucks	2	1	1	4	Heavys	4	1	0	5	Totals	443	590	152		Peds Cross: South Peds: 1 South Entering: 1185 South Leg Total: 1881
Cars	681																														
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Heavys	4	1	0	5																											
Totals	443	590	152																												

Comments

Accu-Traffic Inc.

Total Count Diagram

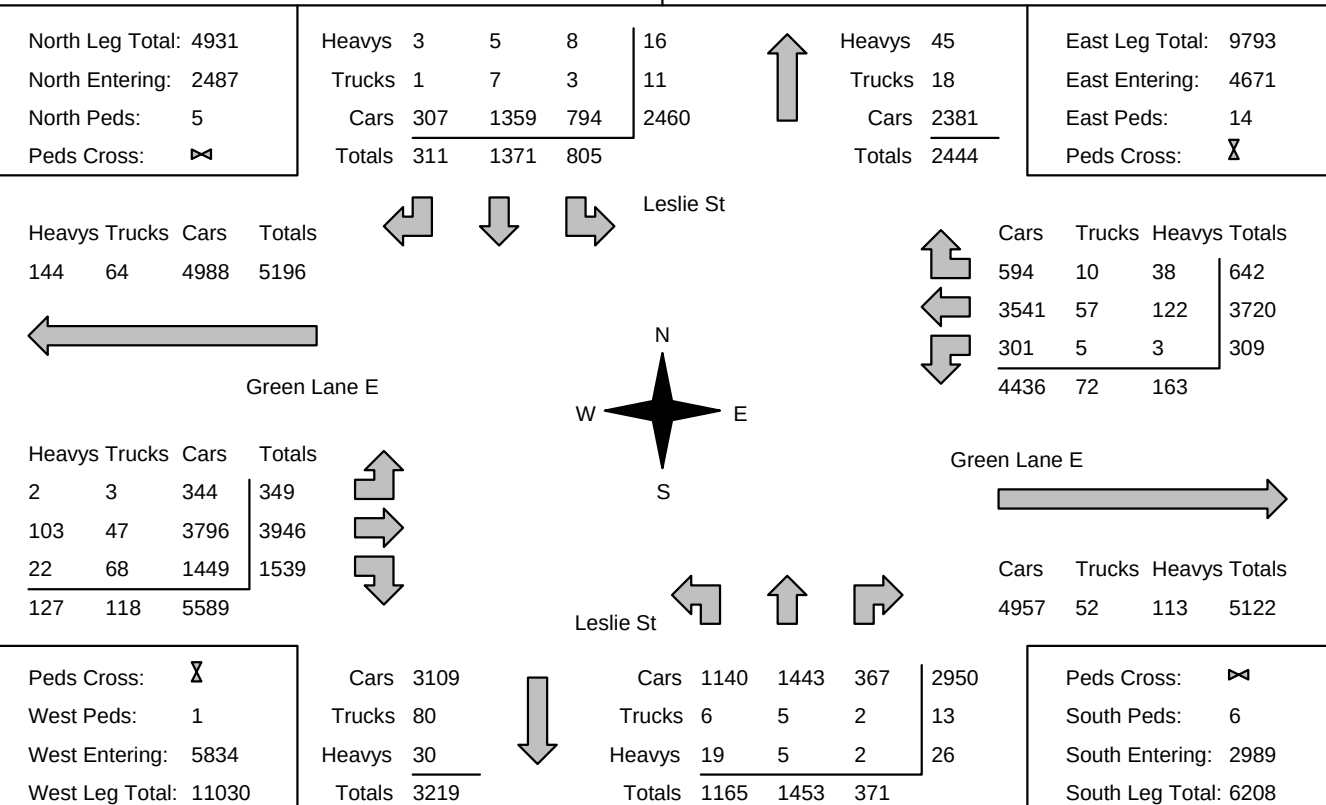
Municipality: East Gwillimbury
Site #: 2415900001
Intersection: Green Lane E & Leslie St
TFR File #: 1
Count date: 27-Aug-24

Weather conditions:

Person counted:
Person prepared:
Person checked:

**** Signalized Intersection ****

Major Road: Green Lane E runs W/E



Comments

Accu-Traffic Inc.

Traffic Count Summary

Intersection: Green Lane E & Leslie St					Count Date: 27-Aug-24			Municipality: East Gwillimbury				
North Approach Totals						North/South Total Approaches	South Approach Totals					
Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds		Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total	
7:00:00	0	0	0	0	0	0	7:00:00	0	0	0	0	0
8:00:00	248	347	62	657	1	902	8:00:00	121	93	31	245	1
9:00:00	303	416	67	786	2	1274	9:00:00	202	209	77	488	2
16:00:00	0	0	0	0	0	0	16:00:00	0	0	0	0	0
17:00:00	136	309	92	537	0	1706	17:00:00	434	602	133	1169	1
18:00:00	118	299	90	507	2	1594	18:00:00	408	549	130	1087	2

[illegible]

[illegible]

[illegible]

Accu-Traffic Inc.

Morning Peak Diagram	Specified Period From: 7:00:00 To: 9:00:00	One Hour Peak From: 7:45:00 To: 8:45:00																																																
Municipality: East Gwillimbury Site #: 2415900002 Intersection: Green Lane E & Harry Walker Pkw TFR File #: 1 Count date: 27-Aug-24	Weather conditions: Person counted: Person prepared: Person checked:																																																	
** Signalized Intersection **	Major Road: Green Lane E runs W/E																																																	
East Leg Total: 2272 East Entering: 1037 East Peds: 0 Peds Cross: 8																																																		
<table style="margin-bottom: 10px;"> <thead> <tr><th>Heavys</th><th>Trucks</th><th>Cars</th><th>Totals</th></tr> </thead> <tbody> <tr><td>52</td><td>38</td><td>786</td><td>876</td></tr> </tbody> </table> Green Lane E <table style="margin-top: 10px;"> <thead> <tr><th>Heavys</th><th>Trucks</th><th>Cars</th><th>Totals</th></tr> </thead> <tbody> <tr><td>24</td><td>13</td><td>1151</td><td>1188</td></tr> <tr><td>4</td><td>2</td><td>195</td><td>201</td></tr> <tr><td>28</td><td>15</td><td>1346</td><td></td></tr> </tbody> </table> Harry Walker Pkwy <table style="margin-bottom: 10px;"> <thead> <tr><th>Cars</th><th>Trucks</th><th>Heavys</th><th>Totals</th></tr> </thead> <tbody> <tr><td>756</td><td>34</td><td>49</td><td>839</td></tr> <tr><td>192</td><td>3</td><td>3</td><td>198</td></tr> <tr><td>948</td><td>37</td><td>52</td><td></td></tr> </tbody> </table> Green Lane E <table style="margin-top: 10px;"> <thead> <tr><th>Cars</th><th>Trucks</th><th>Heavys</th><th>Totals</th></tr> </thead> <tbody> <tr><td>1193</td><td>14</td><td>28</td><td>1235</td></tr> </tbody> </table>			Heavys	Trucks	Cars	Totals	52	38	786	876	Heavys	Trucks	Cars	Totals	24	13	1151	1188	4	2	195	201	28	15	1346		Cars	Trucks	Heavys	Totals	756	34	49	839	192	3	3	198	948	37	52		Cars	Trucks	Heavys	Totals	1193	14	28	1235
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1193	14	28	1235																																															
Peds Cross: 8 West Peds: 0 West Entering: 1389 West Leg Total: 2265	<table style="width: 100%;"> <tr><td>Cars</td><td>387</td><td></td><td></td></tr> <tr><td>Trucks</td><td>5</td><td></td><td></td></tr> <tr><td>Heavys</td><td>7</td><td></td><td></td></tr> <tr><td>Totals</td><td>399</td><td></td><td></td></tr> </table>	Cars	387			Trucks	5			Heavys	7			Totals	399			<table style="width: 100%;"> <tr><td>Cars</td><td>30</td><td>42</td><td>72</td></tr> <tr><td>Trucks</td><td>4</td><td>1</td><td>5</td></tr> <tr><td>Heavys</td><td>3</td><td>4</td><td>7</td></tr> <tr><td>Totals</td><td>37</td><td>47</td><td></td></tr> </table>	Cars	30	42	72	Trucks	4	1	5	Heavys	3	4	7	Totals	37	47		Peds Cross: 8 South Peds: 0 South Entering: 84 South Leg Total: 483															
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Totals	37	47																																																
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Accu-Traffic Inc.

Afternoon Peak Diagram	Specified Period From: 16:00:00 To: 18:00:00	One Hour Peak From: 16:15:00 To: 17:15:00																																																
Municipality: East Gwillimbury Site #: 2415900002 Intersection: Green Lane E & Harry Walker Pkw TFR File #: 1 Count date: 27-Aug-24	Weather conditions: Person counted: Person prepared: Person checked:																																																	
** Signalized Intersection **	Major Road: Green Lane E runs W/E																																																	
East Leg Total: 2831 East Entering: 1379 East Peds: 0 Peds Cross: 8																																																		
<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Heavys</th> <th>Trucks</th> <th>Cars</th> <th>Totals</th> </tr> </thead> <tbody> <tr> <td>31</td> <td>8</td> <td>1523</td> <td>1562</td> </tr> </tbody> </table> Green Lane E <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Cars</th> <th>Trucks</th> <th>Heavys</th> <th>Totals</th> </tr> </thead> <tbody> <tr> <td>1277</td> <td>8</td> <td>28</td> <td>1313</td> </tr> <tr> <td>64</td> <td>1</td> <td>1</td> <td>66</td> </tr> <tr> <td>1341</td> <td>9</td> <td>29</td> <td></td> </tr> </tbody> </table> Green Lane E <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Heavys</th> <th>Trucks</th> <th>Cars</th> <th>Totals</th> </tr> </thead> <tbody> <tr> <td>10</td> <td>17</td> <td>1141</td> <td>1168</td> </tr> <tr> <td>3</td> <td>0</td> <td>86</td> <td>89</td> </tr> <tr> <td>13</td> <td>17</td> <td>1227</td> <td></td> </tr> </tbody> </table> Harry Walker Pkwy <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Cars</th> <th>Trucks</th> <th>Heavys</th> <th>Totals</th> </tr> </thead> <tbody> <tr> <td>1423</td> <td>17</td> <td>12</td> <td>1452</td> </tr> </tbody> </table>			Heavys	Trucks	Cars	Totals	31	8	1523	1562	Cars	Trucks	Heavys	Totals	1277	8	28	1313	64	1	1	66	1341	9	29		Heavys	Trucks	Cars	Totals	10	17	1141	1168	3	0	86	89	13	17	1227		Cars	Trucks	Heavys	Totals	1423	17	12	1452
Heavys	Trucks	Cars	Totals																																															
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Cars	Trucks	Heavys	Totals																																															
1423	17	12	1452																																															
Peds Cross: 8 West Peds: 0 West Entering: 1257 West Leg Total: 2819	<table style="width: 100%; border-collapse: collapse;"> <tr> <td>Cars</td> <td>150</td> <td></td> <td></td> </tr> <tr> <td>Trucks</td> <td>1</td> <td></td> <td></td> </tr> <tr> <td>Heavys</td> <td>4</td> <td></td> <td></td> </tr> <tr> <td>Totals</td> <td>155</td> <td></td> <td></td> </tr> </table>	Cars	150			Trucks	1			Heavys	4			Totals	155			<table style="width: 100%; border-collapse: collapse;"> <tr> <td>Cars</td> <td>246</td> <td>282</td> <td>528</td> </tr> <tr> <td>Trucks</td> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td>Heavys</td> <td>3</td> <td>2</td> <td>5</td> </tr> <tr> <td>Totals</td> <td>249</td> <td>284</td> <td></td> </tr> </table>	Cars	246	282	528	Trucks	0	0	0	Heavys	3	2	5	Totals	249	284		Peds Cross: 0 South Peds: 0 South Entering: 533 South Leg Total: 688															
Cars	150																																																	
Trucks	1																																																	
Heavys	4																																																	
Totals	155																																																	
Cars	246	282	528																																															
Trucks	0	0	0																																															
Heavys	3	2	5																																															
Totals	249	284																																																
Comments																																																		

Accu-Traffic Inc.

Total Count Diagram

Municipality: East Gwillimbury
Site #: 2415900002
Intersection: Green Lane E & Harry Walker Pkw
TFR File #: 1
Count date: 27-Aug-24

Weather conditions:

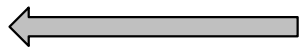
Person counted:
Person prepared:
Person checked:

**** Signalized Intersection ****

Major Road: Green Lane E runs W/E

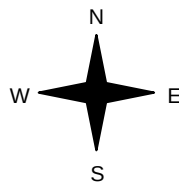
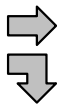
East Leg Total: 9741
 East Entering: 4594
 East Peds: 0
 Peds Cross: 8

Heavys	Trucks	Cars	Totals
168	87	4387	4642



Green Lane E

Heavys	Trucks	Cars	Totals
103	59	4446	4608
11	8	498	517
114	67	4944	



Harry Walker Pkwy

Cars	Trucks	Heavys	Totals
3869	82	158	4109
466	5	14	485
4335	87	172	



Green Lane E



Cars	Trucks	Heavys	Totals
4975	62	110	5147

Peds Cross: 8
 West Peds: 0
 West Entering: 5125
 West Leg Total: 9767

Cars	964
Trucks	13
Heavys	25
Totals	1002



Cars	518	529	1047
Trucks	5	3	8
Heavys	10	7	17
Totals	533	539	

Peds Cross: 8
 South Peds: 0
 South Entering: 1072
 South Leg Total: 2074

Comments

Accu-Traffic Inc.

Traffic Count Summary

Intersection: Green Lane E & Harry Walker Pk					Count Date: 27-Aug-24		Municipality: East Gwillimbury					
North Approach Totals						North/South Total Approaches	South Approach Totals					
Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds		Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total	
7:00:00	0	0	0	0	0	0	7:00:00	0	0	0	0	0
8:00:00	0	0	0	0	0	78	8:00:00	44	0	34	78	0
9:00:00	0	0	0	0	0	95	9:00:00	47	0	48	95	0
16:00:00	0	0	0	0	0	0	16:00:00	0	0	0	0	0
17:00:00	0	0	0	0	0	522	17:00:00	257	0	265	522	0
18:00:00	0	0	0	0	0	377	18:00:00	185	0	192	377	0

[illegible]

[illegible]

[illegible]

[illegible]

Accu-Traffic Inc.

Morning Peak Diagram		Specified Period From: 7:00:00 To: 9:00:00	One Hour Peak From: 7:30:00 To: 8:30:00
Municipality: East Gwillimbury Site #: 2415900003 Intersection: Green Lane E & Hwy 404 South Ea TFR File #: 1 Count date: 27-Aug-24		Weather conditions: Person counted: Person prepared: Person checked:	
** Signalized Intersection **		Major Road: Green Lane E runs W/E	

North Leg Total: 425 North Entering: 425 North Peds: 0 Peds Cross:	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">8</td> <td style="text-align: right;">0</td> <td style="text-align: right;">8</td> </tr> <tr> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">1</td> <td style="text-align: right;">0</td> <td style="text-align: right;">1</td> </tr> <tr> <td style="text-align: right;">Cars</td> <td style="text-align: right;">395</td> <td style="text-align: right;">21</td> <td style="text-align: right;">416</td> </tr> <tr> <td style="text-align: right;">Totals</td> <td style="text-align: right;">404</td> <td style="text-align: right;">21</td> <td></td> </tr> </table>	Heavys	8	0	8	Trucks	1	0	1	Cars	395	21	416	Totals	404	21		<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">0</td> </tr> <tr> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">0</td> </tr> <tr> <td style="text-align: right;">Cars</td> <td style="text-align: right;">0</td> </tr> <tr> <td style="text-align: right;">Totals</td> <td style="text-align: right;">0</td> </tr> </table>	Heavys	0	Trucks	0	Cars	0	Totals	0	East Leg Total: 1032 East Entering: 637 East Peds: 0 Peds Cross:
Heavys	8	0	8																								
Trucks	1	0	1																								
Cars	395	21	416																								
Totals	404	21																									
Heavys	0																										
Trucks	0																										
Cars	0																										
Totals	0																										

Heavys	Trucks	Cars	Totals
60	33	948	1041

Green Lane E

Hwy 404 South East-West off-Ramp

Cars	Trucks	Heavys	Totals
0	0	0	0
553	32	52	637

553	32	52	
-----	----	----	--

Green Lane E

Cars	Trucks	Heavys	Totals
369	10	16	395

Heavys	Trucks	Cars	Totals
0	0	0	0
16	10	348	374

16	10	348
----	----	-----

Comments

Accu-Traffic Inc.

Afternoon Peak Diagram

Specified Period

From: 16:00:00

To: 18:00:00

One Hour Peak

From: 16:15:00

To: 17:15:00

Municipality: East Gwillimbury
Site #: 2415900003
Intersection: Green Lane E & Hwy 404 South Ea
TFR File #: 1
Count date: 27-Aug-24

Weather conditions:

Person counted:
Person prepared:
Person checked:

** Signalized Intersection **

Major Road: Green Lane E runs W/E

North Leg Total: 285

North Entering: 285

North Peds: 0

Peds Cross: 

Heavys	Trucks	Cars	Totals
4	0	263	267
0	0	18	18
4	0	281	285



Heavys 0

Trucks 0

Cars 0

Totals 0

East Leg Total: 1962

East Entering: 1117

East Peds: 0

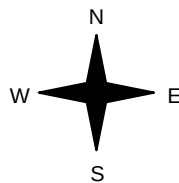
Peds Cross: 

Heavys	Trucks	Cars	Totals
28	8	1348	1384



Green Lane E

Heavys	Trucks	Cars	Totals
0	0	0	0
9	12	806	827
9	12	806	



Hwy 404 South East-West off-Ramp



Cars	Trucks	Heavys	Totals
0	0	0	0
1085	8	24	1117
1085	8	24	

Green Lane E



Cars	Trucks	Heavys	Totals
824	12	9	845

Peds Cross: 

West Peds: 0

West Entering: 827

West Leg Total: 2211

Comments

Accu-Traffic Inc.

Traffic Count Summary

Intersection: Green Lane E & Hwy 404 South E				Count Date: 27-Aug-24		Municipality: East Gwillimbury						
North Approach Totals						North/South Total Approaches	South Approach Totals					
Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds		Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total	
7:00:00	0	0	0	0	0	0	7:00:00	0	0	0	0	0
8:00:00	19	0	391	410	0	410	8:00:00	0	0	0	0	0
9:00:00	14	0	398	412	0	412	9:00:00	0	0	0	0	0
16:00:00	0	0	0	0	0	0	16:00:00	0	0	0	0	0
17:00:00	14	0	275	289	0	289	17:00:00	0	0	0	0	0
18:00:00	14	0	238	252	0	252	18:00:00	0	0	0	0	0

[illegible]

[illegible]

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Accu-Traffic Inc.

Morning Peak Diagram	Specified Period From: 7:00:00 To: 9:00:00	One Hour Peak From: 7:30:00 To: 8:30:00
Municipality: East Gwillimbury Site #: 2415900004 Intersection: Green Lane E & Hwy 404 North Ea TFR File #: 1 Count date: 27-Aug-24	Weather conditions: Person counted: Person prepared: Person checked:	
** Signalized Intersection **	Major Road: Green Lane E runs W/E	

North Leg Total: 22 North Entering: 8 North Peds: 0 Peds Cross:	<table style="width: 100%; border-collapse: collapse;"> <tr><td>Heavys</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>Trucks</td><td>1</td><td>0</td><td>0</td><td>1</td></tr> <tr><td>Cars</td><td>7</td><td>0</td><td>0</td><td>7</td></tr> <tr style="border-top: 1px solid black;"><td>Totals</td><td>8</td><td>0</td><td>0</td><td></td></tr> </table>	Heavys	0	0	0	0	Trucks	1	0	0	1	Cars	7	0	0	7	Totals	8	0	0		<table style="width: 100%; border-collapse: collapse;"> <tr><td>Heavys</td><td>0</td></tr> <tr><td>Trucks</td><td>2</td></tr> <tr><td>Cars</td><td>12</td></tr> <tr style="border-top: 1px solid black;"><td>Totals</td><td>14</td></tr> </table>	Heavys	0	Trucks	2	Cars	12	Totals	14	East Leg Total: 582 East Entering: 269 East Peds: 0 Peds Cross:
Heavys	0	0	0	0																											
Trucks	1	0	0	1																											
Cars	7	0	0	7																											
Totals	8	0	0																												
Heavys	0																														
Trucks	2																														
Cars	12																														
Totals	14																														

Heavys	Trucks	Cars	Totals
54	34	588	676

Carpool Parking Lot Access

Cars	Trucks	Heavys	Totals
0	1	0	1
230	11	27	268
0	0	0	0
230	12	27	

Green Lane E

Heavys	Trucks	Cars	Totals
0	1	8	9
8	6	254	268
0	0	0	0
8	7	262	

Hwy 404 North East-West off-Ramp

Cars	Trucks	Heavys	Totals
290	7	16	313

Green Lane E

Peds Cross: West Peds: 0 West Entering: 277 West Leg Total: 953	<table style="width: 100%; border-collapse: collapse;"> <tr><td>Cars</td><td>0</td></tr> <tr><td>Trucks</td><td>0</td></tr> <tr><td>Heavys</td><td>0</td></tr> <tr style="border-top: 1px solid black;"><td>Totals</td><td>0</td></tr> </table>	Cars	0	Trucks	0	Heavys	0	Totals	0	<table style="width: 100%; border-collapse: collapse;"> <tr><td>Cars</td><td>351</td><td>4</td><td>36</td><td>391</td></tr> <tr><td>Trucks</td><td>22</td><td>0</td><td>1</td><td>23</td></tr> <tr><td>Heavys</td><td>27</td><td>0</td><td>8</td><td>35</td></tr> <tr style="border-top: 1px solid black;"><td>Totals</td><td>400</td><td>4</td><td>45</td><td></td></tr> </table>	Cars	351	4	36	391	Trucks	22	0	1	23	Heavys	27	0	8	35	Totals	400	4	45		Peds Cross: South Peds: 0 South Entering: 449 South Leg Total: 449
Cars	0																														
Trucks	0																														
Heavys	0																														
Totals	0																														
Cars	351	4	36	391																											
Trucks	22	0	1	23																											
Heavys	27	0	8	35																											
Totals	400	4	45																												

Comments

Accu-Traffic Inc.

Afternoon Peak Diagram	Specified Period From: 16:00:00 To: 18:00:00	One Hour Peak From: 16:15:00 To: 17:15:00
Municipality: East Gwillimbury Site #: 2415900004 Intersection: Green Lane E & Hwy 404 North Ea TFR File #: 1 Count date: 27-Aug-24	Weather conditions: Person counted: Person prepared: Person checked:	
** Signalized Intersection **	Major Road: Green Lane E runs W/E	

North Leg Total: 37 North Entering: 24 North Peds: 0 Peds Cross:	Heavys 0 Trucks 0 Cars 20 Totals 20 0 0 0 0 0 0 4 4		Heavys 0 Trucks 0 Cars 13 Totals 13 0 0 0 0 0 0 0 0	East Leg Total: 741 East Entering: 347 East Peds: 0 Peds Cross:
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Heavys	Trucks	Cars	Totals
27	7	1161	1195

Green Lane E

N
S
E
W

Carpool Parking Lot Access

Cars	Trucks	Heavys	Totals
4	0	0	4
328	3	12	343
0	0	0	0
332	3	12	

Green Lane E

Heavys	Trucks	Cars	Totals
0	0	6	6
2	5	312	319
0	0	0	0
2	5	318	

Hwy 404 North East-West off-Ramp

N
S
E
W

Green Lane E

Cars	Trucks	Heavys	Totals
383	8	3	394

Peds Cross: West Peds: 0 West Entering: 325 West Leg Total: 1520	Cars 0 Trucks 0 Heavys 0 Totals 0 0 0 0 0 0 0 0 0		Cars 813 Trucks 4 Heavys 15 Totals 832 3 0 0 3 67 3 1 71	Peds Cross: South Peds: 0 South Entering: 906 South Leg Total: 906
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Comments

Accu-Traffic Inc.

Total Count Diagram

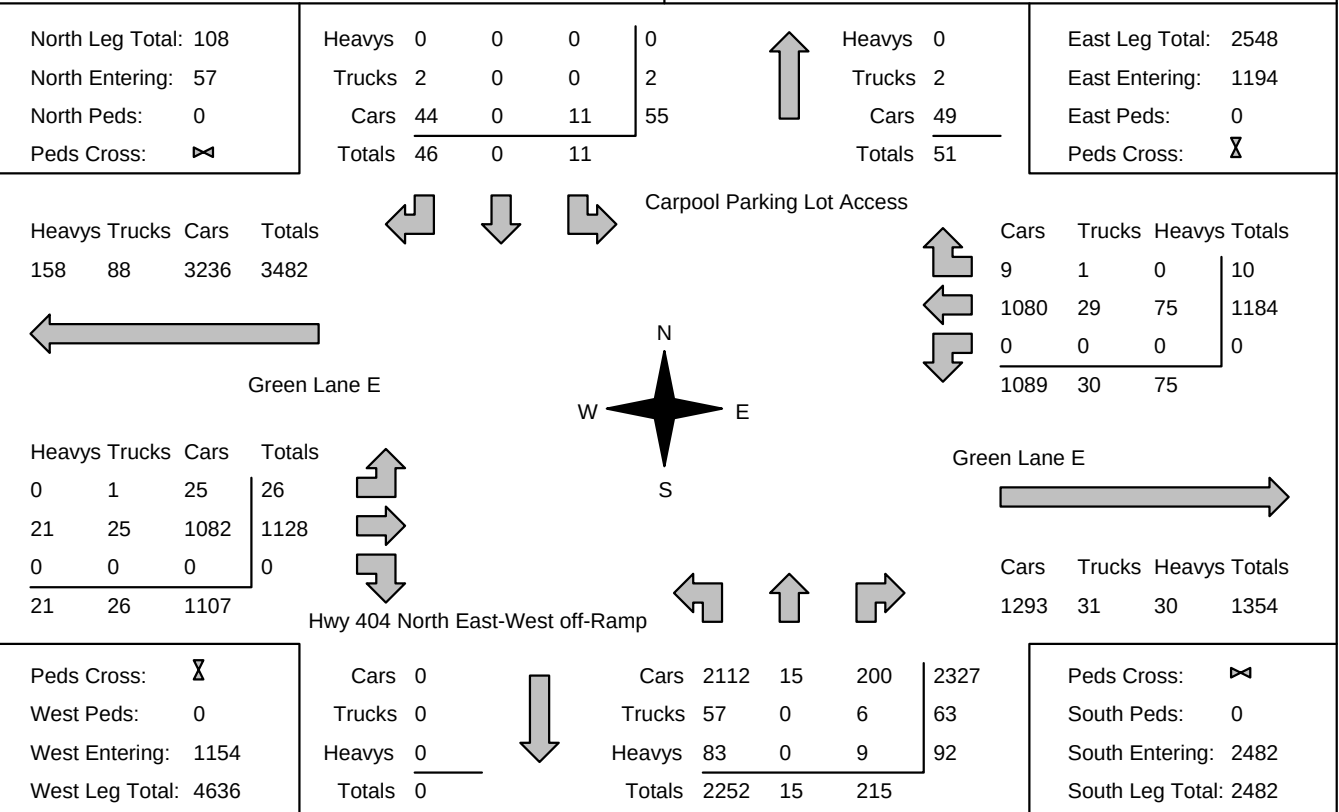
Municipality: East Gwillimbury
Site #: 2415900004
Intersection: Green Lane E & Hwy 404 North Ea
TFR File #: 1
Count date: 27-Aug-24

Weather conditions:

Person counted:
Person prepared:
Person checked:

**** Signalized Intersection ****

Major Road: Green Lane E runs W/E



Comments

Accu-Traffic Inc.

Traffic Count Summary

Intersection: Green Lane E & Hwy 404 North E						Count Date: 27-Aug-24		Municipality: East Gwillimbury					
North Approach Totals						North/South Total Approaches	South Approach Totals						
Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds		Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds	
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total		
7:00:00	0	0	0	0	0	0	7:00:00	0	0	0	0	0	
8:00:00	2	0	7	9	0	375	8:00:00	311	4	51	366	0	
9:00:00	1	0	7	8	0	460	9:00:00	408	2	42	452	0	
16:00:00	0	0	0	0	0	0	16:00:00	0	0	0	0	0	
17:00:00	4	0	23	27	0	920	17:00:00	818	5	70	893	0	
18:00:00	4	0	9	13	0	784	18:00:00	715	4	52	771	0	

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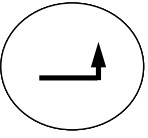
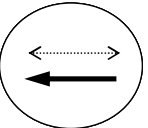
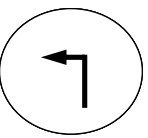
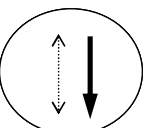
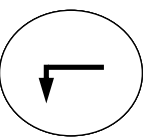
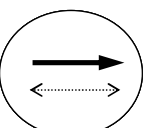
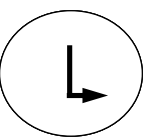
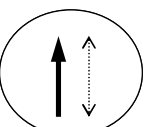
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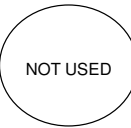
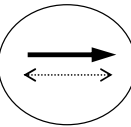
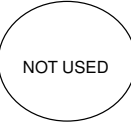
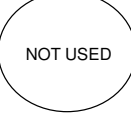
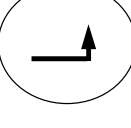
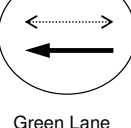
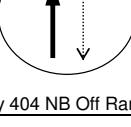
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Appendix D: Signal Timing Plans

LOCATION: Leslie St (YR 12) & Green Lane (YR 19) CTCS: 82 MODE/COMMENT: SA with RLC & APS PREPARED/CHECKED BY: MQL PREPARATION DATE: December 3, 2018 IMPLEMENTATION DATE: December 3, 2018		MUNICIPALITY: East Gwillimbury COMPUTER SYSTEM: Centrac CONTROLLER/CABINET TYPE: Econolite Cobalt / TS2T1 CONFLICT FLASH: Red & Red DESIGN WALK SPEED: 1.0 m/s (FDW based on full crossing at 1.2 m/s) CHANNEL/DROP:			
NEMA Phase (York)		AM & PM 7:00-9:30, 14:00-19:00 M-F	Free 9:30-14:00, 19:00-7:00 M-F 24 hrs, Sat & Sun	Phase Mode (Fixed/Demanded/Callable)	Remarks
	Local Plan System Plan	Pattern 98 Plan 98	Pattern 99 Plan 99		
1. E/B Left Turn Arrow 	WLK FDW MIN 7 EXT 3 MAX1 7 MAX2 20 AMB 3 ALR 1 SPLIT	Use MAX2 0	0	Callable/Extendable by Setback Loop	Pedestrian Minimums: EWWK = 7 sec., EWFD = 30 sec. NSWK = 7 sec., NSFD = 30 sec. Emergency vehicle pre-emption 3: Serve EWG/EWDW min 20 secs and up to 100 secs if there are continuous emergency calls in EW direction. Emergency vehicle pre-emption 4: Serve NSG/NSDW min 20 secs and up to 100 secs if there are continuous emergency calls in NS direction.
2. Westbound  Green Lane	WLK 7 FDW 30 MIN 30 EXT 6 MAX1 40 MAX2 65 AMB 5.0 ALR 2.5 SPLIT	Use MAX2 0	0	Fixed	NS phase is callable by vehicle or pedestrian actuation. If a vehicle call is received, the minimum NSG is served. If ongoing vehicle demand exists on the stopbar loop, the NSG is capable of providing vehicle extensions up to the maximum green split during coordinated operation or MAX1 during Free operation. If a pedestrian call is received, the pedestrian minimum will be served. The NSWK & NSFD are only displayed on the pedestrian signal heads if a pedestrian call is received. Extension time is based on vehicle demand. Unused extension time is given to the EWG.
3. N/B Left Turn Arrow 	WLK FDW MIN 7 EXT 3 MAX1 20 MAX2 20 AMB 3 ALR 1 SPLIT	Use MAX2 0	0	Callable/Extendable by Setback Loop	During free plan, signal rests in EWWK and does not cycle through EWFD unless there is side street vehicle or pedestrian demand.
4. Southbound  Leslie St	WLK 7 FDW 30 MIN 10 EXT 3 MAX1 30 MAX2 30 AMB 4.5 ALR 3.5 SPLIT	Use MAX2 0	0	Callable by stopbar loop and/or pushbutton; Extendable by stopbar loop.	EWFD reverts to EWWK if there is no side street demand at the end of the EWFD. Vehicle clearance changed due to speed limit reduction.
5. W/B Left Turn Arrow 	WLK FDW MIN 7 EXT 3 MAX1 7 MAX2 15 AMB 3 ALR 1 SPLIT	Use MAX2 0	0	Callable/Extendable by Setback Loop	APS Extended Push Activation = 3 sec When activated, APS is on for 7 secs. APS installed on ?
6. Eastbound  Green Lane	WLK 7 FDW 30 MIN 30 EXT 6 MAX1 40 MAX2 65 AMB 5.0 ALR 2.5 SPLIT	Use MAX2 0	0	Fixed	
7. S/B Left Turn Arrow 	WLK FDW MIN 7 EXT 3 MAX1 7 MAX2 15 AMB 3 ALR 1 SPLIT	Use MAX2 0	0	Callable/Extendable by Setback Loop	LEGEND: SA - Semi-Actuated signal WLK - Walk time FDW - Flashing Don't Walk time MIN - Minimum green time EXT - Extension time MAX1 - Maximum green time 1 MAX2 - Maximum green time 2 AMB - Amber ALR - All Red CL - Cycle Length OF - Offset VP - Vehicle Permissive NSWK - North/South Walk EWWK - East/West Walk NSG - North/South Green EWG - East/West Green NSFD - North/South Flashing Don't Walk EWFD - East/West Flashing Don't Walk TSP - Transit Priority APS - Audible Pedestrian Signal RLC - Red Light Camera
8. Northbound  Leslie St	WLK 7 FDW 30 MIN 10 EXT 3 MAX1 30 MAX2 30 AMB 4.5 ALR 3.5 SPLIT	Use MAX2 0	0	Callable by stopbar loop and/or pushbutton; Extendable by stopbar loop.	
	CL OF VP	0 (FREE) 0 (FREE) 0 (FREE)	0 (FREE) 0 (FREE) 0 (FREE)		

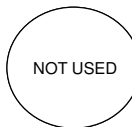
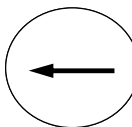
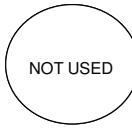
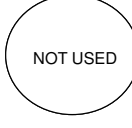
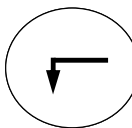
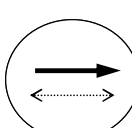
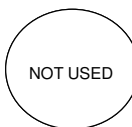
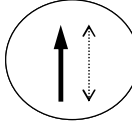
NOTES:

LOCATION: Hwy 404 NB Offramp & Green Lane (YR 19) CTCS: 515 (MTO Signal) MODE/COMMENT: SA PREPARED/CHECKED BY: MLQ PREPARATION DATE: May 13, 2019 IMPLEMENTATION DATE: November 18, 2019		MUNICIPALITY: East Gwillimbury COMPUTER SYSTEM: Centrac CONTROLLER/CABINET TYPE: Econolite Cobalt / TS2T1 DESIGN WALK SPEED: CHANNEL/DROP:		
NEMA Phase (MTO)	Normal Time	Free	Phase Mode (Fixed/Demanded/Callable)	Remarks
		7 days, 24 hours		
		Pattern 99 Plan 99		
1. W/B Left Turn Arrow  NOT USED	WLK FDW MIN EXT MAX1 MAX2 AMB ALR SPLIT			Pedestrian Minimums: EWWK = 7 sec., EWFD = 26 sec. NSWK = 7 sec., NSFD = 26 sec. Emergency vehicle pre-emption 3: Serve EWG/EWDW min 20 secs and up to 100 secs if there are continuous emergency calls in EW direction. NS phase is callable by vehicle or pedestrian actuation. If a vehicle call is received, the minimum NSG is 10 seconds. If ongoing vehicle demand exists on the stopbar loop, the NSG is capable of providing vehicle extensions up to the maximum green. If a pedestrian call is received, the pedestrian minimum will be served.
2. Eastbound  Green Lane	WLK 7 FDW 26 MIN 20 EXT 4 MAX1 47 MAX2 0 AMB 5.0 ALR 3.0 SPLIT	0	Veh Min Recall Ped Recall	Please see reverse page for Pretime.
3.  NOT USED	WLK FDW MIN EXT MAX1 MAX2 AMB ALR SPLIT			
4. Southbound  NOT USED	WLK FDW MIN EXT MAX1 MAX2 AMB ALR SPLIT			
5. E/B Left Turn Arrow  NOT USED	WLK FDW MIN 7 EXT 3 MAX1 15 MAX2 0 AMB 3 ALR 1 SPLIT	0	Callable/Extendable by loop 5 secs delay	
6. Westbound  Green Lane	WLK 7 FDW 26 MIN 20 EXT 4 MAX1 47 MAX2 0 AMB 5.0 ALR 3.0 SPLIT	0	Veh Min Recall Ped Recall	
7. Southbound Through Fully Prot.  Parking Lot Entrance	WLK 0 FDW 0 MIN 10 EXT 3 MAX1 23 MAX2 0 AMB 4.5 ALR 3.0 SPLIT	0	Callable/Extendable by stopbar loop 10 secs delay Split Phase	LEGEND: SA - Semi-Actuated signal WLK - Walk time FDW - Flashing Don't Walk time MIN - Minimum green time EXT - Extension time MAX1 - Maximum green time 1 MAX2 - Maximum green time 2 AMB - Amber ALR - All Red CL - Cycle Length OF - Offset VP - Vehicle Permissive NSWK - North/South Walk EWWK - East/West Walk NSG - North/South Green EWG - East/West Green NSFD - North/South Flashing Don't Walk EWFD - East/West Flashing Don't Walk TSP - Transit Priority APS - Audible Pedestrian Signal
8. Northbound Through Fully Prot.  Hwy 404 NB Off Ramp	WLK 7 FDW 26 MIN 10 EXT 3 MAX1 50 MAX2 0 AMB 4.5 ALR 3.0 SPLIT	0	Callable by stopbar loop and/or pushbutton Extendable by stopbar loop 10 secs delay Split Phase	
	CL OF VP	0 (FREE) 0 (FREE) 0 (FREE)		

NOTES:

LOCATION: Hwy 404 NB Offramp & Green Lane (YR 19)		MUNICIPALITY: East Gwillimbury		N ↑
CTCS: 515 (MTO Signal)		COMPUTER SYSTEM: Centrac		
MODE/COMMENT: SA		CONTROLLER/CABINET TYPE: Econolite Cobalt / TS2T1		
PREPARED/CHECKED BY: MQL		DESIGN WALK SPEED:		
PREPARATION DATE: May 13, 2019		CHANNEL/DROP:		
NEMA Phase (MTO)	Pre Time	Free	Phase Mode (Fixed/Demanded/Callable)	Remarks
		7 days, 24 hours		
		Pattern 99		
		Plan 99		
1. W/B Left Turn Arrow NOT USED	WLK FDW MIN EXT MAX1 MAX2 AMB ALR SPLIT			Pedestrian Minimums: EWWK = 7 sec., EWFD = 26 sec. NSWK = 7 sec., NSFD = 26 sec. Emergency vehicle pre-emption 3: Serve EWG/EWDW min 20 secs and up to 100 secs if there are continuous emergency calls in EW direction.
2. Eastbound → ← Green Lane	WLK 7 FDW 26 MIN 40 EXT 4 MAX1 50 MAX2 45 AMB 5.0 ALR 3.0 SPLIT		Veh call 7:00-8:00, 15:00-17:00, M-F, All other times Veh Min Recall	NS phase is callable by vehicle or pedestrian actuation. If a vehicle call is received, the minimum NSG is 10 seconds. If ongoing vehicle demand exists on the stopbar loop, the NSG is capable of providing vehicle extensions up to the maximum green. If a pedestrian call is received, the pedestrian minimum will be served.
3. NOT USED	WLK FDW MIN EXT MAX1 MAX2 AMB ALR SPLIT			
4. Southbound NOT USED	WLK FDW MIN EXT MAX1 MAX2 AMB ALR SPLIT			
5. E/B Left Turn Arrow ↖	WLK FDW MIN 7 EXT 3 MAX1 15 MAX2 0 AMB 3 ALR 1 SPLIT		Veh call 7:00-8:00, M-F, All other times Veh Min Recall 5 secs delay	
6. Westbound ← → Green Lane	WLK 7 FDW 26 MIN 40 EXT 4 MAX1 50 MAX2 45 AMB 5.0 ALR 3.0 SPLIT		Veh call 7:00-8:00, 15:00-17:00, M-F, All other times Veh Min Recall	
7. Southbound Through Fully Prot. ↓ Parking Lot Entrance	WLK 0 FDW 0 MIN 20 EXT 3 MAX1 25 MAX2 40 AMB 4.5 ALR 3.0 SPLIT		Veh call 15:00-17:00, M-F, All other times Veh Min Recall 10 secs delay Split Phase	LEGEND: SA - Semi-Actuated signal WLK - Walk time FDW - Flashing Don't Walk time MIN - Minimum green time EXT - Extension time MAX1 - Maximum green time 1 MAX2 - Maximum green time 2 AMB - Amber ALR - All Red CL - Cycle Length OF - Offset VP - Vehicle Permissive NSWK - North/South Walk EWWK - East/West Walk NSG - North/South Green EWG - East/West Green NSFD - North/South Flashing Don't Walk EWFD - East/West Flashing Don't Walk TSP - Transit Priority APS - Audible Pedestrian Signal
8. Northbound Through Fully Prot. ↑↕ Hwy 404 NB Off Ramp	WLK 7 FDW 26 MIN 20 EXT 3 MAX1 50 MAX2 40 AMB 4.5 ALR 3.0 SPLIT		Veh call 15:00-17:00, M-F, All other times Veh Min Recall 10 secs delay Split Phase	
	CL OF VP	0 (FREE) 0 (FREE) 0 (FREE)		

NOTES:

LOCATION: Green Lane (YR 19) & Harry Walker Pkwy CTCS: 551 MODE/COMMENT: SA PREPARED/CHECKED BY: MQL PREPARATION DATE: September 20, 2019 IMPLEMENTATION DATE: November 6, 2019		MUNICIPALITY: East Gwillimbury COMPUTER SYSTEM: Centracs CONTROLLER/CABINET TYPE: Econolite Cobalt / TS2T1 CONFLICT FLASH: Red & Red DESIGN WALK SPEED: 1.0 m/s (FDW based on full crossing at 1.2 m/s) CHANNEL/DROP:				
NEMA Phase (York)		AM	PM	Free	Phase Mode (Fixed/Demanded/Callable)	Remarks
		6:00-9:00 M-F	16:00-19:00 M-F	9:00-16:00 19:00-6:00 M-F 24 hrs Sat & Sun		
		Local Plan System Plan	Pattern 1 Plan 1	Pattern 2 Plan 2	Pattern 99 Plan 99	
1.	 WLK FDW MIN EXT MAX1 MAX2 AMB ALR SPLIT					Pedestrian Minimums: EWWK = 7 sec., EWFD = 19 sec. NSWK = 7 sec., NSFD = 18 sec. Emergency vehicle pre-emption 3: Serve EWG/EWDW min 20 secs and up to 100 secs if there are continuous emergency calls in EW direction. Emergency vehicle pre-emption 4:
2. Westbound	 Green Lane WLK 0 FDW 0 MIN 30 EXT 0 MAX1 30 MAX2 0 AMB 5.0 ALR 2.5 SPLIT				Fixed	Serve NBG/NSDW min 20 secs and up to 100 secs if there are continuous emergency calls in NS direction. NS phase is callable by vehicle or pedestrian actuation. If a vehicle call is received, the minimum NSG is 10 seconds. If ongoing vehicle demand exists on the stopbar loop, the NSG is capable of providing vehicle extensions up to the maximum green split during coordinated operation or 30 secs during Free operation. If a pedestrian call is received, the pedestrian minimum will be served. The NSWK & NSFD are only displayed on the pedestrian signal heads if a pedestrian call is received. Extension time is based on vehicle demand. Unused extension time is given to the EWG.
3.	 WLK FDW MIN EXT MAX1 MAX2 AMB ALR SPLIT					During coordinated operation, the signal constantly cycles through main street FDW to improve response time to side street vehicle and pedestrian demand.
4.	 WLK FDW MIN EXT MAX1 MAX2 AMB ALR SPLIT					EWFD reverts to EWWK if there is no side street demand at the end of the EWFD. Vehicle clearance changed due to speed limit reduction.
5. W/B Left Turn Arrow	 WLK FDW MIN 7 EXT 3 MAX1 7 MAX2 0 AMB 3.0 ALR 1.0 SPLIT					WBLT installed
6. Eastbound	 Green Lane WLK 7 FDW 19 MIN 30 EXT 0 MAX1 30 MAX2 0 AMB 5.0 ALR 2.5 SPLIT				Fixed	
7.	 WLK FDW MIN EXT MAX1 MAX2 AMB ALR SPLIT					LEGEND: SA - Semi-Actuated signal WLK - Walk time FDW - Flashing Don't Walk time MIN - Minimum green time EXT - Extension time MAX1 - Maximum green time 1 MAX2 - Maximum green time 2 AMB - Amber ALR - All Red CL - Cycle Length OF - Offset VP - Vehicle Permissive NSWK - North/South Walk EWWK - East/West Walk NSG - North/South Green EWG - East/West Green NSFD - North/South Flashing Don't Walk EWFD - East/West Flashing Don't Walk TSP - Transit Priority APS - Audible Pedestrian Signal RLC - Red Light Camera
8. Northbound	 Harry Walker Pkwy WLK 7 FDW 18 MIN 10 EXT 3 MAX1 30 MAX2 0 AMB 4.0 ALR 3.0 SPLIT				Callable by stopbar loop and/or pushbutton; Extendable by stopbar loop	
	CL OF VP	120 0 19	120 0 19	0 (FREE) 0 (FREE) 0 (FREE)		

NOTES:

LOCATION: Highway 404 SB Offramp & Green Lane (YR 19)		MUNICIPALITY: East Gwillimbury			
CTCS #: 860 (MTO Signal)		COMPUTER SYSTEM: Centracs			
MODE/COMMENT: SA		CONTROLLER/CABINET TYPE: Econolite Cobalt / TS2T1			
PREPARED/CHECKED BY: MQL		DESIGN WALK SPEED: 1.0 m/s (FDW based on full crossing at 1.2 m/s)			
PREPARATION DATE: September 20, 2016		CHANNEL/DROP:			
IMPLEMENTATION DATE: November 10, 2016					
MTO Phase	Actuated Time	Pre-Time	All Day Plan	Phase Mode (Fixed/Demanded/Callable)	Remarks
			24 hrs, 7 days		
1.	NOT USED	WLK FDW MIN EXT MAX1 MAX2 AMB ALR SPLIT			Pedestrian Minimums: No Pedestrian Crossing Emergency vehicle pre-emption 3: Serve EWG/EWDW min 20 secs and up to 100 secs if there are continuous emergency calls in EW direction.
2. Eastbound	Green Lane	WLK FDW MIN 20 EXT 4 MAX1 45 MAX2 0 AMB 5.9 ALR 1.8 SPLIT	30 4 45 0 5.9 1.8	Extendable by loop during Actuated Operation Max Recall 7:00-9:00, 15:00-17:00, M-F during Pre-Time Operation	Signal rests in EWWK and does not cycle through EWFD unless there is side street vehicle or pedestrian demand. SB 10 secs delay time on presence detection applied to both Actuated and Pre-timed operation
3.	NOT USED	WLK FDW MIN EXT MAX1 MAX2 AMB ALR SPLIT			
4.	Hwy 404 SB Offramp	WLK FDW MIN 10 EXT 3 MAX1 30 MAX2 0 AMB 5.1 ALR 2.1 SPLIT	15 3 30 0 5.1 2.1	Callable & Extendable by stopbar loop during Actuated Operation Max Recall 7:00-9:00, 15:00-17:00, M-F during Pre-Time Operation	
5.	NOT USED	WLK FDW MIN EXT MAX1 MAX2 AMB ALR SPLIT			
6. Westbound	Green Lane	WLK FDW MIN 20 EXT 4 MAX1 45 MAX2 0 AMB 5.9 ALR 1.8 SPLIT	30 4 45 0 5.9 1.8	Extendable by loop during Actuated Operation Max Recall 7:00-9:00, 15:00-17:00, M-F during Pre-Time Operation	LEGEND: SA - Semi-Actuated signal WLK - Walk time FDW - Flashing Don't Walk time MIN - Minimum green time EXT - Extension time MAX1 - Maximum green time 1 MAX2 - Maximum green time 2 AMB - Amber ALR - All Red CL - Cycle Length OF - Offset VP - Vehicle Permissive NSWK - North/South Walk EWWK - East/West Walk NSG - North/South Green EWG - East/West Green NSFD - North/South Flashing Don't Walk EWFD - East/West Flashing Don't Walk TSP - Transit Priority APS - Audible Pedestrian Signal RLC - Red Light Camera
7.	NOT USED	WLK FDW MIN EXT MAX1 MAX2 AMB ALR SPLIT			
8. Northbound	NOT USED	WLK FDW MIN 10 EXT 3 MAX1 30 MAX2 0 AMB 5.1 ALR 2.1 SPLIT	15 3 30 0 5.1 2.1		
	CL OF VP		0 (FREE) 0 (FREE) 0 (FREE)		

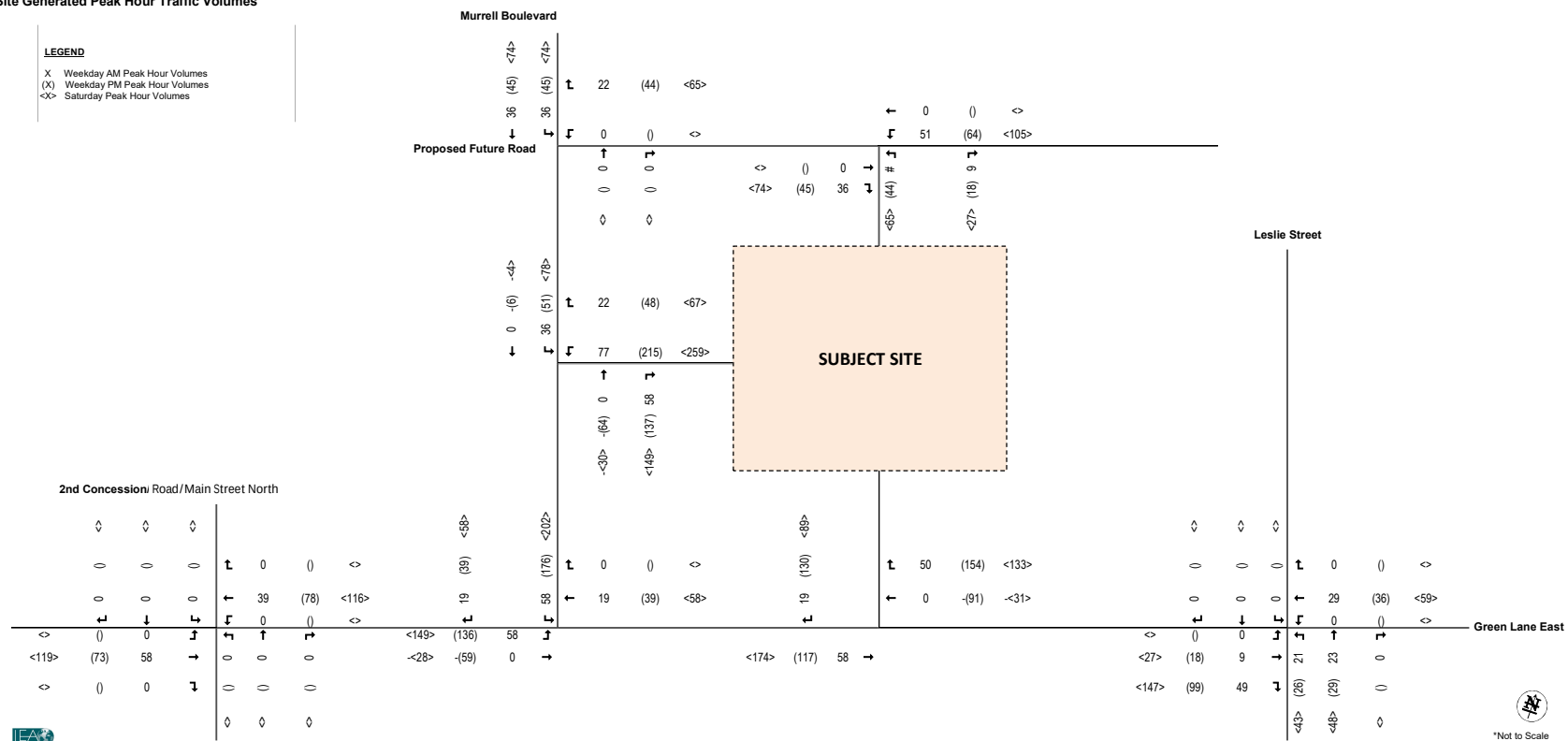
NOTES:



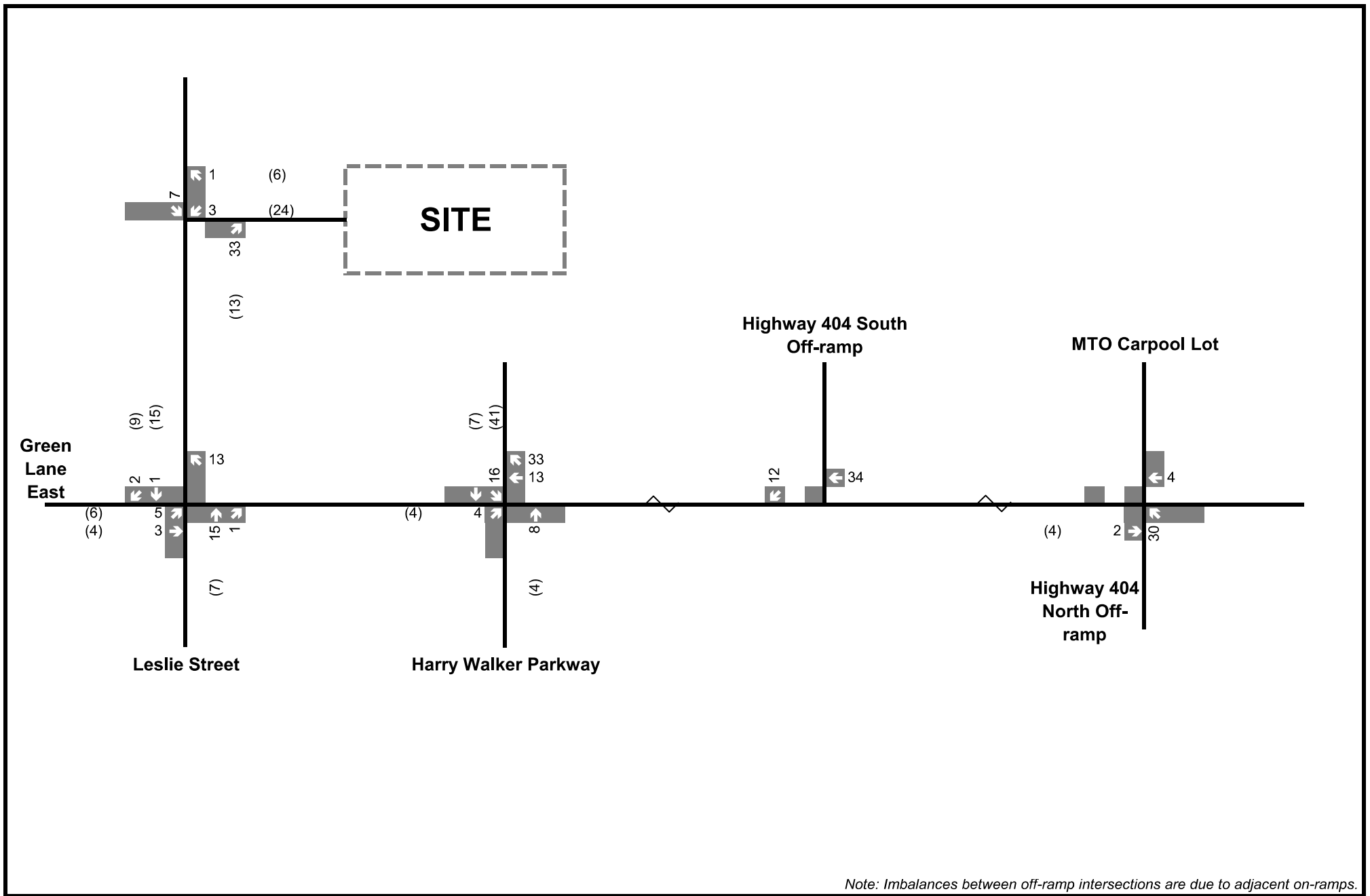
Appendix E:

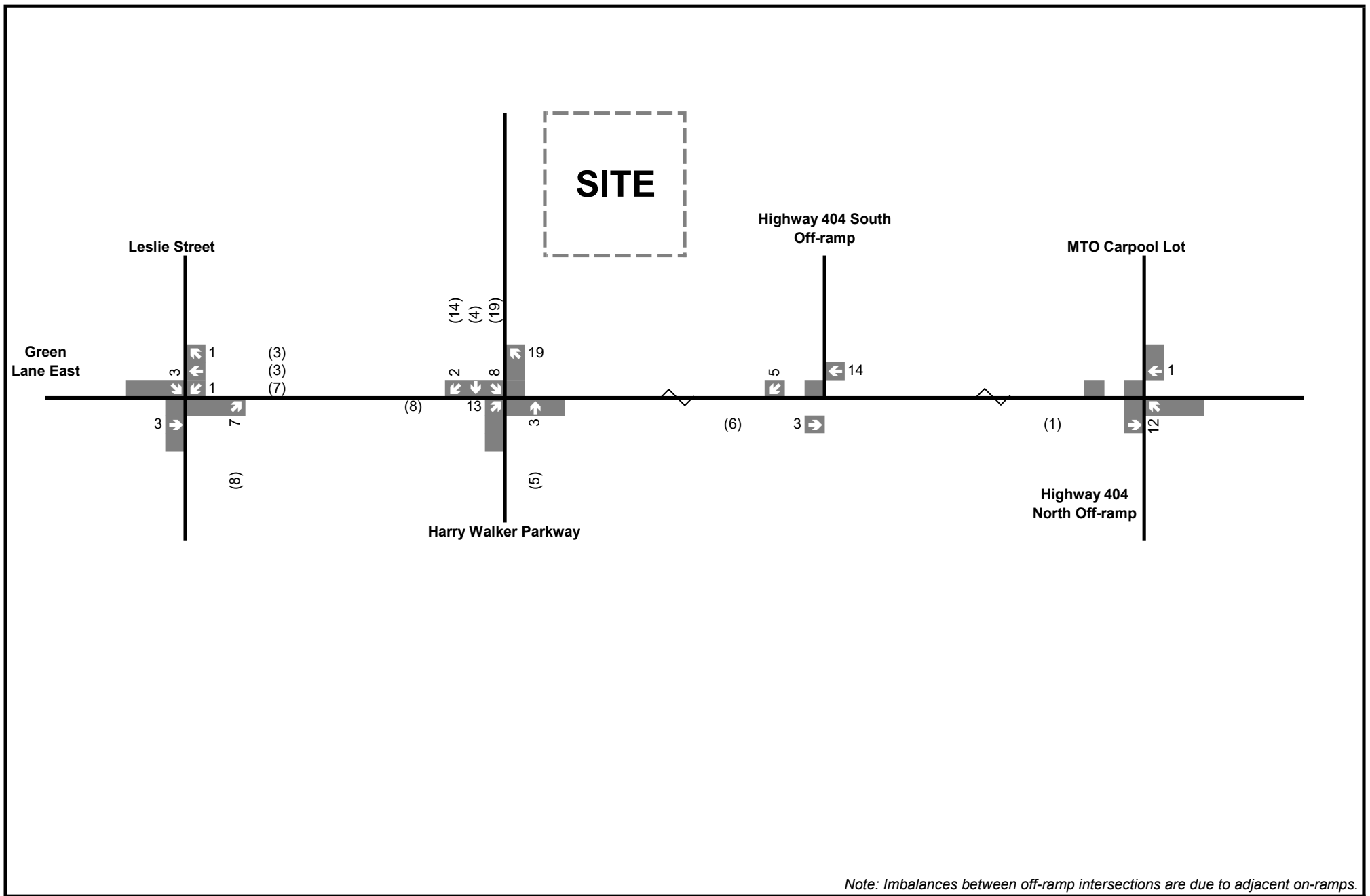
Background Development Traffic

Figure 4-3: Site Generated Peak Hour Traffic Volumes



*Not to Scale







Appendix F:

Synchro Capacity Analysis

Lanes, Volumes, Timings
1: Leslie Street & Green Lane East

09/17/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	950	441	103	645	81	191	205	77	301	409	67
Future Volume (vph)	70	950	441	103	645	81	191	205	77	301	409	67
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width (m)	3.5	3.6	3.3	3.7	3.7	3.5	4.8	3.6	3.8	3.6	3.8	3.3
Storage Length (m)	125.0		70.0	185.0		85.0	55.0		35.0	85.0		35.0
Storage Lanes	1		1	1		1	1		1	1		2
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	1.00		0.98	1.00		0.98	1.00		0.98	0.99		0.99
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1824	3619	1508	1830	3525	1303	2031	3725	1738	1881	3808	1643
Flt Permitted	0.371			0.206			0.296			0.621		
Satd. Flow (perm)	712	3619	1485	397	3525	1284	633	3725	1704	1223	3808	1622
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			366			145			114			141
Link Speed (k/h)		70			70			60			60	
Link Distance (m)		324.4			502.9			426.7			532.3	
Travel Time (s)		16.7			25.9			25.6			31.9	
Confl. Peds. (#/hr)	2		2	2		2	1		6	6		1
Confl. Bikes (#/hr)			1			1						
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	3%	5%	9%	5%	9%	29%	6%	2%	0%	1%	2%	0%
Adj. Flow (vph)	71	969	450	105	658	83	195	209	79	307	417	68
Shared Lane Traffic (%)												
Lane Group Flow (vph)	71	969	450	105	658	83	195	209	79	307	417	68
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			4.8			4.8	
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	0.95	0.94	0.98	0.92	0.92	0.95	0.79	0.94	0.91	0.94	0.91	0.98
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lanes, Volumes, Timings

1: Leslie Street & Green Lane East

09/17/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6		6	2		2	8		8	4		4
Detector Phase	1	6	6	5	2	2	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	7.0	30.0	30.0	7.0	30.0	30.0	7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	11.0	44.5	44.5	11.0	44.5	44.5	11.0	45.0	45.0	11.0	45.0	45.0
Total Split (s)	24.0	77.5	77.5	19.0	72.5	72.5	24.0	43.0	43.0	19.0	38.0	38.0
Total Split (%)	15.1%	48.9%	48.9%	12.0%	45.7%	45.7%	15.1%	27.1%	27.1%	12.0%	24.0%	24.0%
Maximum Green (s)	20.0	70.0	70.0	15.0	65.0	65.0	20.0	35.0	35.0	15.0	30.0	30.0
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	4.5	4.5	3.0	4.5	4.5
All-Red Time (s)	1.0	2.5	2.5	1.0	2.5	2.5	1.0	3.5	3.5	1.0	3.5	3.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	7.5	7.5	4.0	7.5	7.5	4.0	8.0	8.0	4.0	8.0	8.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		30.0	30.0		30.0	30.0		30.0	30.0		30.0	30.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	81.9	70.3	70.3	85.4	74.1	74.1	40.1	21.0	21.0	39.8	20.7	20.7
Actuated g/C Ratio	0.59	0.50	0.50	0.61	0.53	0.53	0.29	0.15	0.15	0.29	0.15	0.15
v/c Ratio	0.15	0.53	0.48	0.31	0.35	0.11	0.58	0.37	0.22	0.73	0.74	0.19
Control Delay	12.5	25.9	6.8	14.1	21.2	0.3	43.1	54.5	3.9	52.1	65.4	1.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.5	25.9	6.8	14.1	21.2	0.3	43.1	54.5	3.9	52.1	65.4	1.1
LOS	B	C	A	B	C	A	D	D	A	D	E	A
Approach Delay		19.5			18.3			41.7			54.7	
Approach LOS		B			B			D			D	

Intersection Summary

Area Type: Other

Cycle Length: 158.5

Actuated Cycle Length: 139.3

Natural Cycle: 115

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.74

Intersection Signal Delay: 29.9

Intersection LOS: C

Intersection Capacity Utilization 84.5%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 1: Leslie Street & Green Lane East



EX_AM_2024 2:07 pm 08/21/2024 Baseline

Synchro 11 Report

Page 2

Queues

1: Leslie Street & Green Lane East

09/17/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	71	969	450	105	658	83	195	209	79	307	417	68
v/c Ratio	0.15	0.53	0.48	0.31	0.35	0.11	0.58	0.37	0.22	0.73	0.74	0.19
Control Delay	12.5	25.9	6.8	14.1	21.2	0.3	43.1	54.5	3.9	52.1	65.4	1.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.5	25.9	6.8	14.1	21.2	0.3	43.1	54.5	3.9	52.1	65.4	1.1
Queue Length 50th (m)	7.2	91.7	11.7	10.8	54.7	0.0	40.4	27.4	0.0	68.7	58.3	0.0
Queue Length 95th (m)	16.2	135.7	42.8	22.5	83.2	0.0	61.9	40.5	5.2	99.1	80.7	0.0
Internal Link Dist (m)	300.4		478.9		402.7		508.3					
Turn Bay Length (m)	125.0		70.0	185.0		85.0	55.0		35.0	85.0		35.0
Base Capacity (vph)	606	1826	930	403	1873	750	402	940	515	420	823	461
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.53	0.48	0.26	0.35	0.11	0.49	0.22	0.15	0.73	0.51	0.15
Intersection Summary												

HCM Signalized Intersection Capacity Analysis

1: Leslie Street & Green Lane East

09/17/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 			 	
Traffic Volume (vph)	70	950	441	103	645	81	191	205	77	301	409	67
Future Volume (vph)	70	950	441	103	645	81	191	205	77	301	409	67
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width	3.5	3.6	3.3	3.7	3.7	3.5	4.8	3.6	3.8	3.6	3.8	3.3
Total Lost time (s)	4.0	7.5	7.5	4.0	7.5	7.5	4.0	8.0	8.0	4.0	8.0	8.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1824	3619	1486	1830	3525	1284	2031	3725	1705	1875	3808	1622
Flt Permitted	0.37	1.00	1.00	0.21	1.00	1.00	0.30	1.00	1.00	0.62	1.00	1.00
Satd. Flow (perm)	712	3619	1486	396	3525	1284	632	3725	1705	1225	3808	1622
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	71	969	450	105	658	83	195	209	79	307	417	68
RTOR Reduction (vph)	0	0	180	0	0	39	0	0	67	0	0	58
Lane Group Flow (vph)	71	969	270	105	658	44	195	209	12	307	417	10
Confl. Peds. (#/hr)	2		2	2		2	1		6	6		1
Confl. Bikes (#/hr)			1			1						
Heavy Vehicles (%)	3%	5%	9%	5%	9%	29%	6%	2%	0%	1%	2%	0%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6		6	2		2	8		8	4		4
Actuated Green, G (s)	77.8	71.3	71.3	83.4	74.1	74.1	36.3	21.0	21.0	35.9	20.8	20.8
Effective Green, g (s)	77.8	71.3	71.3	83.4	74.1	74.1	36.3	21.0	21.0	35.9	20.8	20.8
Actuated g/C Ratio	0.55	0.51	0.51	0.59	0.53	0.53	0.26	0.15	0.15	0.26	0.15	0.15
Clearance Time (s)	4.0	7.5	7.5	4.0	7.5	7.5	4.0	8.0	8.0	4.0	8.0	8.0
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	446	1840	755	330	1863	678	316	557	255	383	564	240
v/s Ratio Prot	0.01	c0.27		c0.02	0.19		0.07	0.06		c0.09	0.11	
v/s Ratio Perm	0.08		0.18	0.17		0.03	0.09		0.01	c0.12		0.01
v/c Ratio	0.16	0.53	0.36	0.32	0.35	0.06	0.62	0.38	0.05	0.80	0.74	0.04
Uniform Delay, d1	14.6	23.1	20.7	14.4	19.2	16.1	42.9	53.7	51.0	46.8	57.1	51.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	1.1	1.3	0.6	0.5	0.2	3.6	0.4	0.1	11.4	5.1	0.1
Delay (s)	14.7	24.2	22.0	15.0	19.7	16.3	46.5	54.1	51.1	58.2	62.2	51.2
Level of Service	B	C	C	B	B	B	D	D	D	E	E	D
Approach Delay (s)		23.1			18.8			50.5			59.7	
Approach LOS		C			B			D			E	
Intersection Summary												
HCM 2000 Control Delay			33.8				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.59									
Actuated Cycle Length (s)			140.2				Sum of lost time (s)			23.5		
Intersection Capacity Utilization			84.5%				ICU Level of Service			E		
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings

2: Harry Walker Parkway & Green Lane East

09/17/2024

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↘	↑↑	↘	↗
Traffic Volume (vph)	1151	195	192	756	30	42
Future Volume (vph)	1151	195	192	756	30	42
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Width (m)	3.8	3.8	3.3	3.7	3.0	3.0
Storage Length (m)		65.0	50.0		0.0	0.0
Storage Lanes		1	1		1	1
Taper Length (m)			7.6		7.6	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3735	1671	1766	3461	1430	1417
Flt Permitted			0.194		0.950	
Satd. Flow (perm)	3735	1671	361	3461	1430	1417
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		203				44
Link Speed (k/h)	70			70	50	
Link Distance (m)	502.9			92.9	200.4	
Travel Time (s)	25.9			4.8	14.4	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	4%	4%	4%	11%	24%	12%
Adj. Flow (vph)	1199	203	200	788	31	44
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1199	203	200	788	31	44
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			3.7	3.0	
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	0.91	0.91	0.98	0.92	1.02	1.02
Turning Speed (k/h)		14	24		24	14
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (m)	30.5	6.1	6.1	30.5	6.1	6.1
Trailing Detector (m)	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
Detector 1 Size(m)	1.8	6.1	6.1	1.8	6.1	6.1
Detector 1 Type	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
Detector 1 Queue (s)	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
Detector 2 Position(m)	28.7			28.7		
Detector 2 Size(m)	1.8			1.8		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	custom	pm+pt	NA	Prot	Perm

Lanes, Volumes, Timings

2: Harry Walker Parkway & Green Lane East

09/17/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Protected Phases	6		5	2	8	
Permitted Phases		2	2			8
Detector Phase	6	2	5	2	8	8
Switch Phase						
Minimum Initial (s)	30.0	30.0	7.0	30.0	10.0	10.0
Minimum Split (s)	37.5	37.5	11.0	37.5	32.0	32.0
Total Split (s)	75.0	87.0	12.0	87.0	33.0	33.0
Total Split (%)	62.5%	72.5%	10.0%	72.5%	27.5%	27.5%
Maximum Green (s)	67.5	79.5	8.0	79.5	26.0	26.0
Yellow Time (s)	5.0	5.0	3.0	5.0	4.0	4.0
All-Red Time (s)	2.5	2.5	1.0	2.5	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.5	7.5	4.0	7.5	7.0	7.0
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	0.2	0.2	3.0	0.2	0.2	0.2
Recall Mode	C-Max	C-Max	None	C-Max	None	None
Walk Time (s)	7.0	0.0		0.0	7.0	7.0
Flash Dont Walk (s)	19.0	0.0		0.0	18.0	18.0
Pedestrian Calls (#/hr)	0	0		0	0	0
Act Effct Green (s)	86.5	100.4	102.4	100.4	10.0	10.0
Actuated g/C Ratio	0.72	0.84	0.85	0.84	0.08	0.08
v/c Ratio	0.45	0.14	0.49	0.27	0.26	0.28
Control Delay	8.3	0.6	6.1	3.1	57.5	19.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.3	0.6	6.1	3.1	57.5	19.7
LOS	A	A	A	A	E	B
Approach Delay	7.2			3.7	35.3	
Approach LOS	A			A	D	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 12 (10%), Referenced to phase 2:WBTL and 6:EBT, Start of Green

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.49

Intersection Signal Delay: 6.6

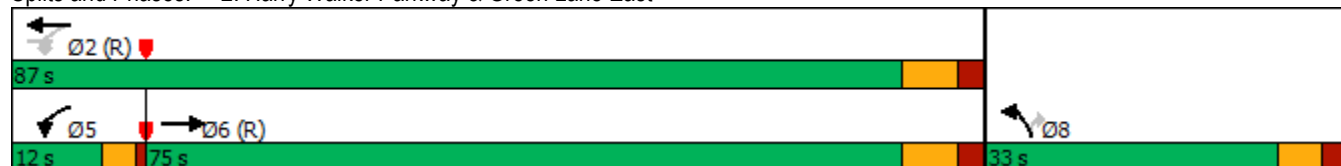
Intersection LOS: A

Intersection Capacity Utilization 64.1%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 2: Harry Walker Parkway & Green Lane East



Queues

2: Harry Walker Parkway & Green Lane East

09/17/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1199	203	200	788	31	44
v/c Ratio	0.45	0.14	0.49	0.27	0.26	0.28
Control Delay	8.3	0.6	6.1	3.1	57.5	19.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.3	0.6	6.1	3.1	57.5	19.7
Queue Length 50th (m)	60.2	0.0	7.2	21.0	7.0	0.0
Queue Length 95th (m)	78.6	4.0	11.1	26.4	16.9	11.4
Internal Link Dist (m)	478.9			68.9	176.4	
Turn Bay Length (m)		65.0	50.0			
Base Capacity (vph)	2691	1431	409	2895	309	341
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.14	0.49	0.27	0.10	0.13
Intersection Summary						

HCM Signalized Intersection Capacity Analysis

2: Harry Walker Parkway & Green Lane East

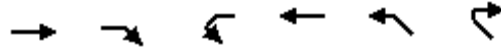
09/17/2024

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↘	↑↑	↘	↑
Traffic Volume (vph)	1151	195	192	756	30	42
Future Volume (vph)	1151	195	192	756	30	42
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Width	3.8	3.8	3.3	3.7	3.0	3.0
Total Lost time (s)	7.5	7.5	4.0	7.5	7.0	7.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3735	1671	1766	3461	1430	1417
Flt Permitted	1.00	1.00	0.19	1.00	0.95	1.00
Satd. Flow (perm)	3735	1671	362	3461	1430	1417
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	1199	203	200	788	31	44
RTOR Reduction (vph)	0	38	0	0	0	41
Lane Group Flow (vph)	1199	165	200	788	31	3
Heavy Vehicles (%)	4%	4%	4%	11%	24%	12%
Turn Type	NA	custom	pm+pt	NA	Prot	Perm
Protected Phases	6		5	2	8	
Permitted Phases		2	2			8
Actuated Green, G (s)	85.1	97.5	97.5	97.5	8.0	8.0
Effective Green, g (s)	85.1	97.5	97.5	97.5	8.0	8.0
Actuated g/C Ratio	0.71	0.81	0.81	0.81	0.07	0.07
Clearance Time (s)	7.5	7.5	4.0	7.5	7.0	7.0
Vehicle Extension (s)	0.2	0.2	3.0	0.2	0.2	0.2
Lane Grp Cap (vph)	2648	1357	392	2812	95	94
v/s Ratio Prot	0.32		c0.04	0.23	c0.02	
v/s Ratio Perm		0.10	c0.38			0.00
v/c Ratio	0.45	0.12	0.51	0.28	0.33	0.03
Uniform Delay, d1	7.5	2.3	4.2	2.7	53.4	52.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	0.2	1.1	0.2	0.7	0.0
Delay (s)	8.0	2.5	5.3	3.0	54.2	52.4
Level of Service	A	A	A	A	D	D
Approach Delay (s)	7.2			3.5	53.1	
Approach LOS	A			A	D	
Intersection Summary						
HCM 2000 Control Delay			7.1		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.51			
Actuated Cycle Length (s)			120.0		Sum of lost time (s)	18.5
Intersection Capacity Utilization			64.1%		ICU Level of Service	C
Analysis Period (min)			15			
c Critical Lane Group						

Lanes, Volumes, Timings

3: Highway 404 West-South On-ramp & Green Lane East

09/17/2024

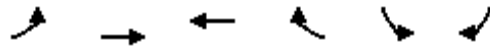


Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑↑	↗		↑↑		
Traffic Volume (vph)	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Width (m)	3.8	4.2	3.8	3.8	3.7	3.7
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	3808	2092	0	3808	0	0
Flt Permitted						
Satd. Flow (perm)	3808	2092	0	3808	0	0
Link Speed (k/h)	70			70	60	
Link Distance (m)	92.9			303.3	172.8	
Travel Time (s)	4.8			15.6	10.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.3			3.3	0.0	
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	0.91	0.86	0.91	0.91	0.92	0.92
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Pretimed					
Intersection Capacity Utilization	0.0%			ICU Level of Service A		
Analysis Period (min)	15					

Lanes, Volumes, Timings

4: Green Lane East & Highway 404 North-East/West Off-Ramp

09/17/2024

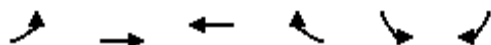


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↑↑	↑↑
Traffic Volume (vph)	0	348	553	0	21	395
Future Volume (vph)	0	348	553	0	21	395
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	1900
Lane Width (m)	3.8	3.8	3.8	3.8	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	0.95
Frt					0.865	0.850
Flt Protected					0.995	
Satd. Flow (prot)	0	3597	3349	0	1751	1556
Flt Permitted					0.995	
Satd. Flow (perm)	0	3597	3349	0	1751	1556
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)					204	221
Link Speed (k/h)		70	70		60	
Link Distance (m)		303.3	111.8		268.4	
Travel Time (s)		15.6	5.7		16.1	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	8%	16%	0%	0%	3%
Adj. Flow (vph)	0	374	595	0	23	425
Shared Lane Traffic (%)						48%
Lane Group Flow (vph)	0	374	595	0	227	221
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		4.0	
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	0.91	0.91	0.91	0.91	0.88	0.94
Turning Speed (k/h)	24			14	24	14
Number of Detectors		2	2		1	1
Detector Template		Thru	Thru		Left	Right
Leading Detector (m)		30.5	30.5		6.1	6.1
Trailing Detector (m)		0.0	0.0		0.0	0.0
Detector 1 Position(m)		0.0	0.0		0.0	0.0
Detector 1 Size(m)		1.8	1.8		6.1	6.1
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0
Detector 2 Position(m)		28.7	28.7			
Detector 2 Size(m)		1.8	1.8			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type		NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases						4
Detector Phase		2	6		4	4

Lanes, Volumes, Timings

4: Green Lane East & Highway 404 North-East/West Off-Ramp

09/17/2024



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Switch Phase						
Minimum Initial (s)		30.0	30.0		15.0	15.0
Minimum Split (s)		37.7	37.7		22.2	22.2
Total Split (s)		52.7	52.7		37.2	37.2
Total Split (%)		58.6%	58.6%		41.4%	41.4%
Maximum Green (s)		45.0	45.0		30.0	30.0
Yellow Time (s)		5.9	5.9		5.1	5.1
All-Red Time (s)		1.8	1.8		2.1	2.1
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		7.7	7.7		7.2	7.2
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		4.0	4.0		3.0	3.0
Recall Mode		Max	Max		Max	Max
Act Effect Green (s)		45.0	45.0		30.0	30.0
Actuated g/C Ratio		0.50	0.50		0.33	0.33
v/c Ratio		0.21	0.36		0.32	0.33
Control Delay		12.9	14.4		5.7	4.7
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		12.9	14.4		5.7	4.7
LOS		B	B		A	A
Approach Delay		12.9	14.4		5.2	
Approach LOS		B	B		A	

Intersection Summary

Area Type: Other

Cycle Length: 89.9

Actuated Cycle Length: 89.9

Natural Cycle: 60

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.36

Intersection Signal Delay: 11.1

Intersection LOS: B

Intersection Capacity Utilization 53.7%

ICU Level of Service A

Analysis Period (min) 15

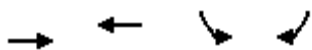
Splits and Phases: 4: Green Lane East & Highway 404 North-East/West Off-Ramp

→ Ø2		↖ Ø4
52.7 s		37.2 s
← Ø6		
52.7 s		

Queues

4: Green Lane East & Highway 404 North-East/West Off-Ramp

09/17/2024

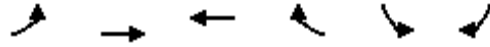


Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	374	595	227	221
v/c Ratio	0.21	0.36	0.32	0.33
Control Delay	12.9	14.4	5.7	4.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	12.9	14.4	5.7	4.7
Queue Length 50th (m)	18.0	31.3	2.7	0.0
Queue Length 95th (m)	26.1	42.8	17.6	15.1
Internal Link Dist (m)	279.3	87.8	244.4	
Turn Bay Length (m)				
Base Capacity (vph)	1800	1676	720	666
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.21	0.36	0.32	0.33
Intersection Summary				

HCM Signalized Intersection Capacity Analysis

4: Green Lane East & Highway 404 North-East/West Off-Ramp

09/17/2024

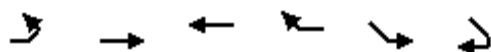


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↑↑	↑↑
Traffic Volume (vph)	0	348	553	0	21	395
Future Volume (vph)	0	348	553	0	21	395
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	1900
Lane Width	3.8	3.8	3.8	3.8	4.0	4.0
Total Lost time (s)		7.7	7.7		7.2	7.2
Lane Util. Factor		0.95	0.95		1.00	0.95
Frt		1.00	1.00		0.87	0.85
Flt Protected		1.00	1.00		0.99	1.00
Satd. Flow (prot)		3597	3349		1751	1556
Flt Permitted		1.00	1.00		0.99	1.00
Satd. Flow (perm)		3597	3349		1751	1556
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	374	595	0	23	425
RTOR Reduction (vph)	0	0	0	0	136	147
Lane Group Flow (vph)	0	374	595	0	91	74
Heavy Vehicles (%)	0%	8%	16%	0%	0%	3%
Turn Type		NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases						4
Actuated Green, G (s)		45.0	45.0		30.0	30.0
Effective Green, g (s)		45.0	45.0		30.0	30.0
Actuated g/C Ratio		0.50	0.50		0.33	0.33
Clearance Time (s)		7.7	7.7		7.2	7.2
Vehicle Extension (s)		4.0	4.0		3.0	3.0
Lane Grp Cap (vph)		1800	1676		584	519
v/s Ratio Prot		0.10	c0.18		c0.05	
v/s Ratio Perm						0.05
v/c Ratio		0.21	0.36		0.16	0.14
Uniform Delay, d1		12.5	13.6		21.1	20.9
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.3	0.6		0.6	0.6
Delay (s)		12.8	14.2		21.6	21.5
Level of Service		B	B		C	C
Approach Delay (s)		12.8	14.2		21.6	
Approach LOS		B	B		C	
Intersection Summary						
HCM 2000 Control Delay		16.2		HCM 2000 Level of Service		B
HCM 2000 Volume to Capacity ratio		0.28				
Actuated Cycle Length (s)		89.9		Sum of lost time (s)		14.9
Intersection Capacity Utilization		53.7%		ICU Level of Service		A
Analysis Period (min)		15				
c Critical Lane Group						

Lanes, Volumes, Timings

5: Green Lane East & Highway 404 East-South On-Ramp

09/17/2024



Lane Group	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations		↑↑	↑↑	↗		
Traffic Volume (vph)	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Width (m)	3.8	3.8	3.8	3.8	3.7	3.7
Storage Length (m)	0.0			70.0	0.0	0.0
Storage Lanes	0			0	0	0
Taper Length (m)	7.6				7.6	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	0	3808	3808	2004	0	0
Flt Permitted						
Satd. Flow (perm)	0	3808	3808	2004	0	0
Link Speed (k/h)		70	70		30	
Link Distance (m)		111.8	136.3		95.7	
Travel Time (s)		5.7	7.0		11.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	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		0.0	
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	0.91	0.91	0.91	0.91	0.92	0.92
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Pretimed					
Intersection Capacity Utilization	53.7%			ICU Level of Service A		
Analysis Period (min)	15					

Lanes, Volumes, Timings

6: Highway 404 West-North On-Ramp & Green Lane East

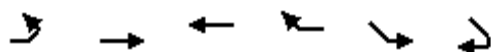
09/17/2024

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑↑	↗		↑↑		
Traffic Volume (vph)	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Width (m)	3.8	4.0	3.7	3.7	3.7	3.7
Storage Length (m)		15.0	0.0		0.0	0.0
Storage Lanes		1	0		0	0
Taper Length (m)			7.6		7.6	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	3808	2048	0	3767	0	0
Flt Permitted						
Satd. Flow (perm)	3808	2048	0	3767	0	0
Link Speed (k/h)	70			70	30	
Link Distance (m)	136.3			93.2	107.1	
Travel Time (s)	7.0			4.8	12.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	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	0.0	
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	0.91	0.88	0.92	0.92	0.92	0.92
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Pretimed					
Intersection Capacity Utilization 6.7%	ICU Level of Service A					
Analysis Period (min) 15						

Lanes, Volumes, Timings

7: Green Lane East & Highway 404 East-North On-Ramp

09/17/2024



Lane Group	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations		↑↑	↑↑	↗		
Traffic Volume (vph)	0	0	0	4	0	0
Future Volume (vph)	0	0	0	4	0	0
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Fr _t				0.850		
Flt Protected						
Satd. Flow (prot)	0	3767	3767	1719	0	0
Flt Permitted						
Satd. Flow (perm)	0	3767	3767	1719	0	0
Link Speed (k/h)		70	48		40	
Link Distance (m)		93.2	36.9		98.9	
Travel Time (s)		4.8	2.8		8.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	0%	2%	2%
Adj. Flow (vph)	0	0	0	4	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	4	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.8	3.8		0.0	
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	0.92	0.92	0.92	0.92	0.92	0.92
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Pretimed					
Intersection Capacity Utilization	6.7%			ICU Level of Service A		
Analysis Period (min)	15					

Lanes, Volumes, Timings

8: Highway 404 South-East/West Off-Ramp/Carpool Parking Lot Access & Green Lane East

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	254	0	0	230	0	351	4	36	0	0	7
Future Volume (vph)	8	254	0	0	230	0	351	4	36	0	0	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.8	3.8	3.8	3.8	3.8	3.8	3.8	4.0	4.0	4.0	4.0	4.0
Storage Length (m)	20.0		0.0	0.0		20.0	0.0		60.0	0.0		0.0
Storage Lanes	1		0	0		0	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91	0.91	0.95	0.95	1.00	1.00	1.00	1.00
Fr't									0.850			0.850
Flt Protected	0.950						0.950	0.953				
Satd. Flow (prot)	1633	3481	0	0	4532	0	1538	1580	1349	1984	0	1467
Flt Permitted	0.531						0.950	0.953				
Satd. Flow (perm)	913	3481	0	0	4532	0	1538	1580	1349	1984	0	1467
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)									111			397
Link Speed (k/h)		70			70			60				40
Link Distance (m)		36.9			312.7			301.6				147.9
Travel Time (s)		1.9			16.1			18.1				13.3
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	13%	6%	0%	0%	17%	0%	14%	0%	25%	0%	0%	15%
Adj. Flow (vph)	9	273	0	0	247	0	377	4	39	0	0	8
Shared Lane Traffic (%)							49%					
Lane Group Flow (vph)	9	273	0	0	247	0	192	189	39	0	0	8
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)		3.8			3.8			4.0			4.0	
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	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.94	0.94	0.94	0.94	0.94
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2			2		1	2	1	1		1
Detector Template	Left	Thru			Thru		Left	Thru	Right	Left		Right
Leading Detector (m)	6.1	30.5			30.5		6.1	30.5	6.1	6.1		6.1
Trailing Detector (m)	0.0	0.0			0.0		0.0	0.0	0.0	0.0		0.0
Detector 1 Position(m)	0.0	0.0			0.0		0.0	0.0	0.0	0.0		0.0
Detector 1 Size(m)	6.1	1.8			1.8		6.1	1.8	6.1	6.1		6.1
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0	0.0	0.0		0.0
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0	0.0	0.0		0.0
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0	0.0	0.0		0.0
Detector 2 Position(m)		28.7			28.7			28.7				
Detector 2 Size(m)		1.8			1.8			1.8				
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	pm+pt	NA			NA		Split	NA	Perm	Prot		Prot

Lanes, Volumes, Timings

8: Highway 404 South-East/West Off-Ramp/Carpool Parking Lot Access & Green Lane East

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	5	2			6		8	8		7		7
Permitted Phases	2								8			
Detector Phase	5	2			6		8	8	8	7		7
Switch Phase												
Minimum Initial (s)	7.0	20.0			20.0		10.0	10.0	10.0	10.0		10.0
Minimum Split (s)	11.0	41.0			41.0		40.5	40.5	40.5	17.5		17.5
Total Split (s)	19.0	74.0			55.0		57.5	57.5	57.5	30.5		30.5
Total Split (%)	11.7%	45.7%			34.0%		35.5%	35.5%	35.5%	18.8%		18.8%
Maximum Green (s)	15.0	66.0			47.0		50.0	50.0	50.0	23.0		23.0
Yellow Time (s)	3.0	5.0			5.0		4.5	4.5	4.5	4.5		4.5
All-Red Time (s)	1.0	3.0			3.0		3.0	3.0	3.0	3.0		3.0
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	4.0	8.0			8.0		7.5	7.5	7.5	7.5		7.5
Lead/Lag	Lead				Lag		Lag	Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	Yes				Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	4.0			4.0		3.0	3.0	3.0	3.0		3.0
Recall Mode	None	Ped			Ped		None	None	None	None		None
Walk Time (s)		7.0			7.0		7.0	7.0	7.0			
Flash Dont Walk (s)		26.0			26.0		26.0	26.0	26.0			
Pedestrian Calls (#/hr)		0			0		0	0	0			
Act Effct Green (s)	40.1	35.9			34.4		14.1	14.1	14.1			10.4
Actuated g/C Ratio	0.58	0.52			0.50		0.21	0.21	0.21			0.15
v/c Ratio	0.01	0.15			0.11		0.61	0.58	0.11			0.01
Control Delay	9.9	10.5			12.5		35.0	33.8	0.6			0.0
Queue Delay	0.0	0.0			0.0		0.0	0.0	0.0			0.0
Total Delay	9.9	10.5			12.5		35.0	33.8	0.6			0.0
LOS	A	B			B		C	C	A			A
Approach Delay		10.5			12.5			31.3				
Approach LOS		B			B			C				

Intersection Summary

Area Type: Other

Cycle Length: 162

Actuated Cycle Length: 68.6

Natural Cycle: 110

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.61

Intersection Signal Delay: 20.0

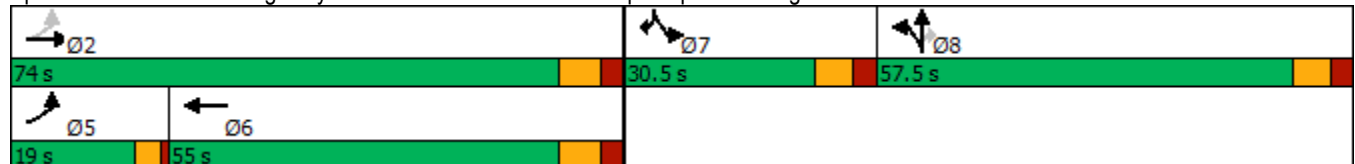
Intersection LOS: C

Intersection Capacity Utilization 54.0%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 8: Highway 404 South-East/West Off-Ramp/Carpool Parking Lot Access & Green Lane East



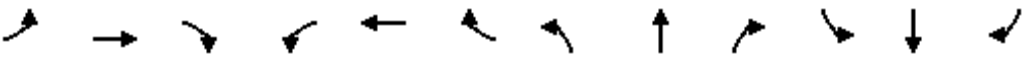
Queues

8: Highway 404 South-East/West Off-Ramp/Carpool Parking Lot Access & Green Lane East

							
Lane Group	EBL	EBT	WBT	NBL	NBT	NBR	SBR
Lane Group Flow (vph)	9	273	247	192	189	39	8
v/c Ratio	0.01	0.15	0.11	0.61	0.58	0.11	0.01
Control Delay	9.9	10.5	12.5	35.0	33.8	0.6	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.9	10.5	12.5	35.0	33.8	0.6	0.0
Queue Length 50th (m)	0.4	7.3	4.5	20.7	20.3	0.0	0.0
Queue Length 95th (m)	3.4	25.0	18.7	57.5	56.5	0.0	0.0
Internal Link Dist (m)		12.9	288.7		277.6		
Turn Bay Length (m)	20.0					60.0	
Base Capacity (vph)	697	3241	3238	1169	1201	1052	771
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	0.01	0.08	0.08	0.16	0.16	0.04	0.01
Intersection Summary							

HCM Signalized Intersection Capacity Analysis

8: Highway 404 South-East/West Off-Ramp/Carpool Parking Lot Access & Green Lane East

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱↱			↱↱↱		↰	↱	↱	↰		↱
Traffic Volume (vph)	8	254	0	0	230	0	351	4	36	0	0	7
Future Volume (vph)	8	254	0	0	230	0	351	4	36	0	0	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.8	3.8	3.8	3.8	3.8	3.8	3.8	4.0	4.0	4.0	4.0	4.0
Total Lost time (s)	4.0	8.0			8.0		7.5	7.5	7.5			7.5
Lane Util. Factor	1.00	0.95			0.91		0.95	0.95	1.00			1.00
Frt	1.00	1.00			1.00		1.00	1.00	0.85			0.85
Flt Protected	0.95	1.00			1.00		0.95	0.95	1.00			1.00
Satd. Flow (prot)	1633	3481			4532		1538	1581	1349			1467
Flt Permitted	0.53	1.00			1.00		0.95	0.95	1.00			1.00
Satd. Flow (perm)	912	3481			4532		1538	1581	1349			1467
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	9	273	0	0	247	0	377	4	39	0	0	8
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	32	0	0	8
Lane Group Flow (vph)	9	273	0	0	247	0	192	189	7	0	0	0
Heavy Vehicles (%)	13%	6%	0%	0%	17%	0%	14%	0%	25%	0%	0%	15%
Turn Type	pm+pt	NA			NA		Split	NA	Perm	Prot		Prot
Protected Phases	5	2			6		8	8		7		7
Permitted Phases	2								8			
Actuated Green, G (s)	39.4	39.4			34.4		14.1	14.1	14.1			1.4
Effective Green, g (s)	39.4	39.4			34.4		14.1	14.1	14.1			1.4
Actuated g/C Ratio	0.51	0.51			0.44		0.18	0.18	0.18			0.02
Clearance Time (s)	4.0	8.0			8.0		7.5	7.5	7.5			7.5
Vehicle Extension (s)	3.0	4.0			4.0		3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	470	1760			2001		278	286	244			26
v/s Ratio Prot	0.00	c0.08			0.05		c0.12	0.12				c0.00
v/s Ratio Perm	0.01								0.01			
v/c Ratio	0.02	0.16			0.12		0.69	0.66	0.03			0.01
Uniform Delay, d1	9.7	10.3			12.8		29.9	29.7	26.3			37.6
Progression Factor	1.00	1.00			1.00		1.00	1.00	1.00			1.00
Incremental Delay, d2	0.0	0.1			0.0		7.2	5.6	0.0			0.1
Delay (s)	9.7	10.4			12.9		37.1	35.3	26.3			37.7
Level of Service	A	B			B		D	D	C			D
Approach Delay (s)		10.4			12.9			35.3			37.7	
Approach LOS		B			B			D			D	
Intersection Summary												
HCM 2000 Control Delay			22.2									
HCM 2000 Volume to Capacity ratio			0.31									
Actuated Cycle Length (s)			77.9									
Intersection Capacity Utilization			54.0%									
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings

1: Leslie Street & Green Lane East

09/17/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	948	330	61	1203	259	437	588	151	138	290	90
Future Volume (vph)	110	948	330	61	1203	259	437	588	151	138	290	90
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width (m)	3.5	3.6	3.3	3.7	3.7	3.5	4.8	3.6	3.8	3.6	3.8	3.3
Storage Length (m)	125.0		70.0	185.0		85.0	55.0		35.0	85.0		35.0
Storage Lanes	1		1	1		1	1		1	1		2
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor			0.99	1.00		0.99			0.99	1.00		
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1860	3689	1580	1847	3730	1664	2111	3762	1721	1881	3846	1595
Flt Permitted	0.088			0.205			0.456			0.221		
Satd. Flow (perm)	172	3689	1559	399	3730	1644	1013	3762	1696	437	3846	1595
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			275			192			114			141
Link Speed (k/h)		70			70			60			60	
Link Distance (m)		324.4			502.9			426.7			532.3	
Travel Time (s)		16.7			25.9			25.6			31.9	
Confl. Peds. (#/hr)			1	1					2	2		
Confl. Bikes (#/hr)						1						
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	1%	3%	4%	4%	3%	1%	2%	1%	1%	1%	1%	3%
Adj. Flow (vph)	117	1009	351	65	1280	276	465	626	161	147	309	96
Shared Lane Traffic (%)												
Lane Group Flow (vph)	117	1009	351	65	1280	276	465	626	161	147	309	96
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			4.8			4.8	
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	0.95	0.94	0.98	0.92	0.92	0.95	0.79	0.94	0.91	0.94	0.91	0.98
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lanes, Volumes, Timings

1: Leslie Street & Green Lane East

09/17/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6		6	2		2	8		8	4		4
Detector Phase	1	6	6	5	2	2	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	7.0	30.0	30.0	7.0	30.0	30.0	7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	11.0	44.5	44.5	11.0	44.5	44.5	11.0	45.0	45.0	11.0	45.0	45.0
Total Split (s)	24.0	77.5	77.5	19.0	72.5	72.5	24.0	43.0	43.0	19.0	38.0	38.0
Total Split (%)	15.1%	48.9%	48.9%	12.0%	45.7%	45.7%	15.1%	27.1%	27.1%	12.0%	24.0%	24.0%
Maximum Green (s)	20.0	70.0	70.0	15.0	65.0	65.0	20.0	35.0	35.0	15.0	30.0	30.0
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	4.5	4.5	3.0	4.5	4.5
All-Red Time (s)	1.0	2.5	2.5	1.0	2.5	2.5	1.0	3.5	3.5	1.0	3.5	3.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	-3.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	7.5	7.5	4.0	7.5	7.5	1.0	8.0	8.0	4.0	8.0	8.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		30.0	30.0		30.0	30.0		30.0	30.0		30.0	30.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	84.0	71.9	71.9	78.4	66.9	66.9	53.9	29.9	29.9	39.7	22.8	22.8
Actuated g/C Ratio	0.58	0.50	0.50	0.54	0.46	0.46	0.37	0.21	0.21	0.28	0.16	0.16
v/c Ratio	0.52	0.55	0.38	0.22	0.74	0.32	0.84	0.80	0.36	0.59	0.51	0.26
Control Delay	23.6	27.8	7.1	15.9	36.1	9.4	51.4	63.1	18.5	43.0	58.2	3.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.6	27.8	7.1	15.9	36.1	9.4	51.4	63.1	18.5	43.0	58.2	3.4
LOS	C	C	A	B	D	A	D	E	B	D	E	A
Approach Delay		22.6			30.7			53.0			44.6	
Approach LOS		C			C			D			D	

Intersection Summary

Area Type: Other

Cycle Length: 158.5

Actuated Cycle Length: 143.9

Natural Cycle: 115

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.84

Intersection Signal Delay: 35.5

Intersection LOS: D

Intersection Capacity Utilization 88.3%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 1: Leslie Street & Green Lane East



EX_PM_2024 3:42 pm 08/21/2024

Synchro 11 Report

Page 2

Queues

1: Leslie Street & Green Lane East

09/17/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	117	1009	351	65	1280	276	465	626	161	147	309	96
v/c Ratio	0.52	0.55	0.38	0.22	0.74	0.32	0.84	0.80	0.36	0.59	0.51	0.26
Control Delay	23.6	27.8	7.1	15.9	36.1	9.4	51.4	63.1	18.5	43.0	58.2	3.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.6	27.8	7.1	15.9	36.1	9.4	51.4	63.1	18.5	43.0	58.2	3.4
Queue Length 50th (m)	14.5	108.6	11.9	7.9	157.2	13.6	106.2	91.3	11.2	29.4	43.0	0.0
Queue Length 95th (m)	27.6	140.7	35.3	15.7	209.4	36.5	#148.0	116.5	32.3	47.2	59.3	4.0
Internal Link Dist (m)	300.4			478.9			402.7			508.3		
Turn Bay Length (m)	125.0		70.0	185.0		85.0	55.0		35.0	85.0		35.0
Base Capacity (vph)	337	1842	916	383	1733	866	555	919	500	278	805	445
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.55	0.38	0.17	0.74	0.32	0.84	0.68	0.32	0.53	0.38	0.22

Intersection Summary

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

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

1: Leslie Street & Green Lane East

09/17/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 			 	
Traffic Volume (vph)	110	948	330	61	1203	259	437	588	151	138	290	90
Future Volume (vph)	110	948	330	61	1203	259	437	588	151	138	290	90
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width	3.5	3.6	3.3	3.7	3.7	3.5	4.8	3.6	3.8	3.6	3.8	3.3
Total Lost time (s)	4.0	7.5	7.5	4.0	7.5	7.5	1.0	8.0	8.0	4.0	8.0	8.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1860	3689	1559	1847	3730	1644	2111	3762	1696	1881	3846	1595
Flt Permitted	0.09	1.00	1.00	0.20	1.00	1.00	0.46	1.00	1.00	0.22	1.00	1.00
Satd. Flow (perm)	173	3689	1559	398	3730	1644	1014	3762	1696	438	3846	1595
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	117	1009	351	65	1280	276	465	626	161	147	309	96
RTOR Reduction (vph)	0	0	138	0	0	102	0	0	90	0	0	81
Lane Group Flow (vph)	117	1009	213	65	1280	174	465	626	71	147	309	15
Confl. Peds. (#/hr)			1	1					2	2		
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	1%	3%	4%	4%	3%	1%	2%	1%	1%	1%	1%	3%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6		6	2		2	8		8	4		4
Actuated Green, G (s)	82.4	71.9	71.9	74.3	67.8	67.8	46.9	29.9	29.9	35.8	22.8	22.8
Effective Green, g (s)	82.4	71.9	71.9	74.3	67.8	67.8	49.9	29.9	29.9	35.8	22.8	22.8
Actuated g/C Ratio	0.57	0.50	0.50	0.51	0.47	0.47	0.34	0.21	0.21	0.25	0.16	0.16
Clearance Time (s)	4.0	7.5	7.5	4.0	7.5	7.5	4.0	8.0	8.0	4.0	8.0	8.0
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	221	1831	774	269	1746	769	524	776	350	237	605	251
v/s Ratio Prot	c0.04	0.27		0.01	c0.34		c0.14	c0.17		0.06	0.08	
v/s Ratio Perm	0.26		0.14	0.11		0.11	0.16		0.04	0.10		0.01
v/c Ratio	0.53	0.55	0.27	0.24	0.73	0.23	0.89	0.81	0.20	0.62	0.51	0.06
Uniform Delay, d1	23.0	25.3	21.2	19.2	31.2	22.9	40.9	54.7	47.6	45.0	55.9	51.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.3	1.2	0.9	0.5	2.8	0.7	16.5	6.1	0.3	5.0	0.7	0.1
Delay (s)	25.3	26.5	22.1	19.7	33.9	23.6	57.4	60.8	47.9	49.9	56.6	52.0
Level of Service	C	C	C	B	C	C	E	E	D	D	E	D
Approach Delay (s)		25.3			31.6			57.9			54.0	
Approach LOS		C			C			E			D	
Intersection Summary												
HCM 2000 Control Delay			39.0				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.78									
Actuated Cycle Length (s)			144.8				Sum of lost time (s)			23.5		
Intersection Capacity Utilization			88.3%				ICU Level of Service			E		
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings

2: Harry Walker Parkway & Green Lane East

09/17/2024

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↘	↑↑	↘	↗
Traffic Volume (vph)	1141	86	64	1277	246	282
Future Volume (vph)	1141	86	64	1277	246	282
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Width (m)	3.8	3.8	3.3	3.7	3.0	3.0
Storage Length (m)		65.0	50.0		0.0	0.0
Storage Lanes		1	1		1	1
Taper Length (m)			7.6		7.6	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3771	1671	1766	3730	1739	1571
Flt Permitted			0.170		0.950	
Satd. Flow (perm)	3771	1671	316	3730	1739	1571
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		91				170
Link Speed (k/h)	70			70	50	
Link Distance (m)	502.9			92.9	200.4	
Travel Time (s)	25.9			4.8	14.4	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	3%	4%	4%	3%	2%	1%
Adj. Flow (vph)	1214	91	68	1359	262	300
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1214	91	68	1359	262	300
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			3.7	3.0	
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	0.91	0.91	0.98	0.92	1.02	1.02
Turning Speed (k/h)		14	24		24	14
Number of Detectors	2	1	1	2	1	1
Detector Template	Thru	Right	Left	Thru	Left	Right
Leading Detector (m)	30.5	6.1	6.1	30.5	6.1	6.1
Trailing Detector (m)	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
Detector 1 Size(m)	1.8	6.1	6.1	1.8	6.1	6.1
Detector 1 Type	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
Detector 1 Queue (s)	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
Detector 2 Position(m)	28.7			28.7		
Detector 2 Size(m)	1.8			1.8		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA	custom	pm+pt	NA	Prot	Perm

Lanes, Volumes, Timings

2: Harry Walker Parkway & Green Lane East

09/17/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Protected Phases	6		5	2	8	
Permitted Phases		2	2			8
Detector Phase	6	2	5	2	8	8
Switch Phase						
Minimum Initial (s)	30.0	30.0	7.0	30.0	10.0	10.0
Minimum Split (s)	37.5	37.5	11.0	37.5	32.0	32.0
Total Split (s)	75.0	87.0	12.0	87.0	33.0	33.0
Total Split (%)	62.5%	72.5%	10.0%	72.5%	27.5%	27.5%
Maximum Green (s)	67.5	79.5	8.0	79.5	26.0	26.0
Yellow Time (s)	5.0	5.0	3.0	5.0	4.0	4.0
All-Red Time (s)	2.5	2.5	1.0	2.5	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.5	7.5	4.0	7.5	7.0	7.0
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	0.2	0.2	3.0	0.2	0.2	0.2
Recall Mode	C-Max	C-Max	None	C-Max	None	None
Walk Time (s)	7.0	0.0		0.0	7.0	7.0
Flash Dont Walk (s)	19.0	0.0		0.0	18.0	18.0
Pedestrian Calls (#/hr)	0	0		0	0	0
Act Effct Green (s)	76.1	85.2	88.7	85.2	20.3	20.3
Actuated g/C Ratio	0.63	0.71	0.74	0.71	0.17	0.17
v/c Ratio	0.51	0.08	0.21	0.51	0.89	0.74
Control Delay	14.1	1.5	6.6	9.3	79.2	30.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.1	1.5	6.6	9.3	79.2	30.8
LOS	B	A	A	A	E	C
Approach Delay	13.2			9.2	53.4	
Approach LOS	B			A	D	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 12 (10%), Referenced to phase 2:WBTL and 6:EBT, Start of Green

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.89

Intersection Signal Delay: 18.3

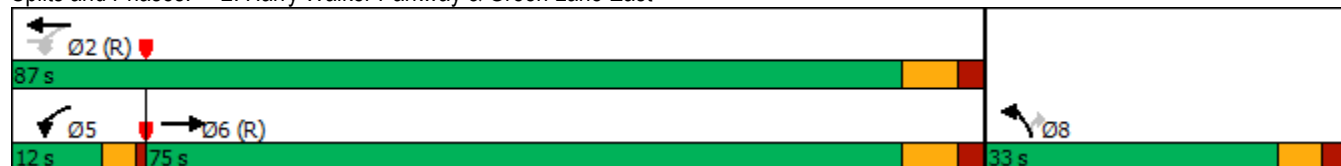
Intersection LOS: B

Intersection Capacity Utilization 64.2%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 2: Harry Walker Parkway & Green Lane East



Queues

2: Harry Walker Parkway & Green Lane East

09/17/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1214	91	68	1359	262	300
v/c Ratio	0.51	0.08	0.21	0.51	0.89	0.74
Control Delay	14.1	1.5	6.6	9.3	79.2	30.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.1	1.5	6.6	9.3	79.2	30.8
Queue Length 50th (m)	80.4	0.0	3.9	69.8	60.7	28.9
Queue Length 95th (m)	111.8	5.2	9.0	98.6	86.4	57.5
Internal Link Dist (m)	478.9			68.9	176.4	
Turn Bay Length (m)		65.0	50.0			
Base Capacity (vph)	2391	1212	330	2648	376	473
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.08	0.21	0.51	0.70	0.63
Intersection Summary						

HCM Signalized Intersection Capacity Analysis

2: Harry Walker Parkway & Green Lane East

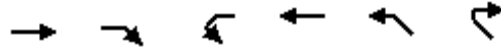
09/17/2024

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↘	↑↑	↘	↑
Traffic Volume (vph)	1141	86	64	1277	246	282
Future Volume (vph)	1141	86	64	1277	246	282
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Width	3.8	3.8	3.3	3.7	3.0	3.0
Total Lost time (s)	7.5	7.5	4.0	7.5	7.0	7.0
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3771	1671	1766	3730	1739	1571
Flt Permitted	1.00	1.00	0.17	1.00	0.95	1.00
Satd. Flow (perm)	3771	1671	316	3730	1739	1571
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	1214	91	68	1359	262	300
RTOR Reduction (vph)	0	26	0	0	0	141
Lane Group Flow (vph)	1214	65	68	1359	262	159
Heavy Vehicles (%)	3%	4%	4%	3%	2%	1%
Turn Type	NA	custom	pm+pt	NA	Prot	Perm
Protected Phases	6		5	2	8	
Permitted Phases		2	2			8
Actuated Green, G (s)	75.3	85.2	85.2	85.2	20.3	20.3
Effective Green, g (s)	75.3	85.2	85.2	85.2	20.3	20.3
Actuated g/C Ratio	0.63	0.71	0.71	0.71	0.17	0.17
Clearance Time (s)	7.5	7.5	4.0	7.5	7.0	7.0
Vehicle Extension (s)	0.2	0.2	3.0	0.2	0.2	0.2
Lane Grp Cap (vph)	2366	1186	295	2648	294	265
v/s Ratio Prot	0.32		0.01	c0.36	c0.15	
v/s Ratio Perm		0.04	0.15			0.10
v/c Ratio	0.51	0.05	0.23	0.51	0.89	0.60
Uniform Delay, d1	12.3	5.2	7.5	7.9	48.8	46.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	0.1	0.4	0.7	26.2	2.4
Delay (s)	13.1	5.3	7.9	8.7	75.0	48.5
Level of Service	B	A	A	A	E	D
Approach Delay (s)	12.5			8.6	60.8	
Approach LOS	B			A	E	
Intersection Summary						
HCM 2000 Control Delay			19.1		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.61			
Actuated Cycle Length (s)			120.0		Sum of lost time (s)	18.5
Intersection Capacity Utilization			64.2%		ICU Level of Service	C
Analysis Period (min)			15			
c Critical Lane Group						

Lanes, Volumes, Timings

3: Highway 404 West-South On-ramp & Green Lane East

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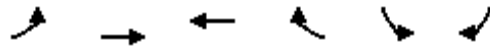


Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑↑	↗		↑↑		
Traffic Volume (vph)	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Width (m)	3.8	4.2	3.8	3.8	3.7	3.7
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	3808	2092	0	3808	0	0
Flt Permitted						
Satd. Flow (perm)	3808	2092	0	3808	0	0
Link Speed (k/h)	70			70	60	
Link Distance (m)	92.9			303.3	172.8	
Travel Time (s)	4.8			15.6	10.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.3			3.3	0.0	
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	0.91	0.86	0.91	0.91	0.92	0.92
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	0.0%			ICU Level of Service A		
Analysis Period (min)	15					

Lanes, Volumes, Timings

4: Green Lane East & Highway 404 North-East/West Off-Ramp

09/17/2024

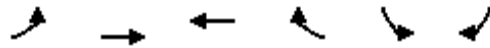


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↘↘	↗
Traffic Volume (vph)	0	806	1085	0	18	263
Future Volume (vph)	0	806	1085	0	18	263
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Width (m)	3.8	3.8	3.8	3.8	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	0.95
Frt					0.869	0.850
Flt Protected					0.994	
Satd. Flow (prot)	0	3771	3771	0	1773	1654
Flt Permitted					0.994	
Satd. Flow (perm)	0	3771	3771	0	1773	1654
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)					49	49
Link Speed (k/h)		70	70		60	
Link Distance (m)		303.3	111.8		268.4	
Travel Time (s)		15.6	5.7		16.1	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	3%	3%	0%	0%	2%
Adj. Flow (vph)	0	857	1154	0	19	280
Shared Lane Traffic (%)						47%
Lane Group Flow (vph)	0	857	1154	0	151	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		4.0	
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	0.91	0.91	0.91	0.91	0.88	0.88
Turning Speed (k/h)	24			14	24	14
Number of Detectors		2	2		1	1
Detector Template		Thru	Thru		Left	Right
Leading Detector (m)		30.5	30.5		6.1	6.1
Trailing Detector (m)		0.0	0.0		0.0	0.0
Detector 1 Position(m)		0.0	0.0		0.0	0.0
Detector 1 Size(m)		1.8	1.8		6.1	6.1
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0
Detector 2 Position(m)		28.7	28.7			
Detector 2 Size(m)		1.8	1.8			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type		NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases						4
Detector Phase		2	6		4	4

Lanes, Volumes, Timings

4: Green Lane East & Highway 404 North-East/West Off-Ramp

09/17/2024



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Switch Phase						
Minimum Initial (s)		30.0	30.0		15.0	15.0
Minimum Split (s)		37.7	37.7		22.2	22.2
Total Split (s)		52.7	52.7		37.2	37.2
Total Split (%)		58.6%	58.6%		41.4%	41.4%
Maximum Green (s)		45.0	45.0		30.0	30.0
Yellow Time (s)		5.9	5.9		5.1	5.1
All-Red Time (s)		1.8	1.8		2.1	2.1
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		7.7	7.7		7.2	7.2
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		4.0	4.0		3.0	3.0
Recall Mode		Max	Max		Max	Max
Act Effect Green (s)		45.0	45.0		30.0	30.0
Actuated g/C Ratio		0.50	0.50		0.33	0.33
v/c Ratio		0.45	0.61		0.24	0.25
Control Delay		15.5	17.9		15.7	15.7
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		15.5	17.9		15.7	15.7
LOS		B	B		B	B
Approach Delay		15.5	17.9		15.7	
Approach LOS		B	B		B	

Intersection Summary

Area Type: Other

Cycle Length: 89.9

Actuated Cycle Length: 89.9

Natural Cycle: 60

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.61

Intersection Signal Delay: 16.7

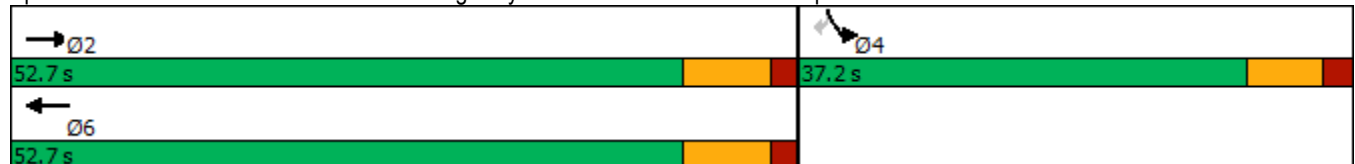
Intersection LOS: B

Intersection Capacity Utilization 53.4%

ICU Level of Service A

Analysis Period (min) 15

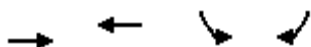
Splits and Phases: 4: Green Lane East & Highway 404 North-East/West Off-Ramp



Queues

4: Green Lane East & Highway 404 North-East/West Off-Ramp

09/17/2024

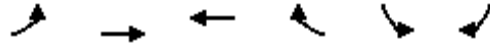


Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	857	1154	151	148
v/c Ratio	0.45	0.61	0.24	0.25
Control Delay	15.5	17.9	15.7	15.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	15.5	17.9	15.7	15.7
Queue Length 50th (m)	48.0	71.8	12.3	12.6
Queue Length 95th (m)	62.5	91.7	26.1	27.2
Internal Link Dist (m)	279.3	87.8	244.4	
Turn Bay Length (m)				
Base Capacity (vph)	1887	1887	624	584
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.45	0.61	0.24	0.25
Intersection Summary				

HCM Signalized Intersection Capacity Analysis

4: Green Lane East & Highway 404 North-East/West Off-Ramp

09/17/2024

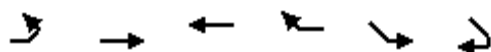


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↘	↗
Traffic Volume (vph)	0	806	1085	0	18	263
Future Volume (vph)	0	806	1085	0	18	263
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Width	3.8	3.8	3.8	3.8	4.0	4.0
Total Lost time (s)		7.7	7.7		7.2	7.2
Lane Util. Factor		0.95	0.95		1.00	0.95
Frt		1.00	1.00		0.87	0.85
Flt Protected		1.00	1.00		0.99	1.00
Satd. Flow (prot)		3771	3771		1773	1654
Flt Permitted		1.00	1.00		0.99	1.00
Satd. Flow (perm)		3771	3771		1773	1654
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	857	1154	0	19	280
RTOR Reduction (vph)	0	0	0	0	33	33
Lane Group Flow (vph)	0	857	1154	0	118	115
Heavy Vehicles (%)	0%	3%	3%	0%	0%	2%
Turn Type		NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases						4
Actuated Green, G (s)		45.0	45.0		30.0	30.0
Effective Green, g (s)		45.0	45.0		30.0	30.0
Actuated g/C Ratio		0.50	0.50		0.33	0.33
Clearance Time (s)		7.7	7.7		7.2	7.2
Vehicle Extension (s)		4.0	4.0		3.0	3.0
Lane Grp Cap (vph)		1887	1887		591	551
v/s Ratio Prot		0.23	c0.31		0.07	
v/s Ratio Perm						c0.07
v/c Ratio		0.45	0.61		0.20	0.21
Uniform Delay, d1		14.5	16.2		21.4	21.5
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.8	1.5		0.8	0.9
Delay (s)		15.3	17.6		22.1	22.3
Level of Service		B	B		C	C
Approach Delay (s)		15.3	17.6		22.2	
Approach LOS		B	B		C	
Intersection Summary						
HCM 2000 Control Delay		17.4		HCM 2000 Level of Service		B
HCM 2000 Volume to Capacity ratio		0.45				
Actuated Cycle Length (s)		89.9		Sum of lost time (s)		14.9
Intersection Capacity Utilization		53.4%		ICU Level of Service		A
Analysis Period (min)		15				
c Critical Lane Group						

Lanes, Volumes, Timings

5: Green Lane East & Highway 404 East-South On-Ramp

09/17/2024



Lane Group	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations		↑↑	↑↑	↗		
Traffic Volume (vph)	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Width (m)	3.8	3.8	3.8	3.8	3.7	3.7
Storage Length (m)	0.0			70.0	0.0	0.0
Storage Lanes	0			0	0	0
Taper Length (m)	7.6				7.6	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	0	3808	3808	2004	0	0
Flt Permitted						
Satd. Flow (perm)	0	3808	3808	2004	0	0
Link Speed (k/h)		70	70		30	
Link Distance (m)		111.8	136.3		95.7	
Travel Time (s)		5.7	7.0		11.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	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		0.0	
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	0.91	0.91	0.91	0.91	0.92	0.92
Turning Speed (k/h)	24			97	97	14
Sign Control		Free	Free		Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	53.4%			ICU Level of Service A		
Analysis Period (min)	15					

Lanes, Volumes, Timings

6: Highway 404 West-North On-Ramp & Green Lane East

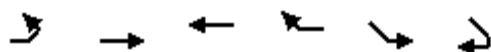
09/17/2024

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑↑	↑		↑↑		
Traffic Volume (vph)	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Width (m)	3.8	4.0	3.7	3.7	3.7	3.7
Storage Length (m)		15.0	0.0		0.0	0.0
Storage Lanes		1	0		0	0
Taper Length (m)			7.6		7.6	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	3808	2048	0	3767	0	0
Flt Permitted						
Satd. Flow (perm)	3808	2048	0	3767	0	0
Link Speed (k/h)	70			70	30	
Link Distance (m)	136.3			93.2	107.1	
Travel Time (s)	7.0			4.8	12.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	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	0.0	
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	0.91	0.88	0.92	0.92	0.92	0.92
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 6.7%	ICU Level of Service A					
Analysis Period (min) 15						

Lanes, Volumes, Timings

7: Green Lane East & Highway 404 East-North On-Ramp

09/17/2024



Lane Group	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations		↑↑	↑↑	↑		
Traffic Volume (vph)	0	0	0	12	0	0
Future Volume (vph)	0	0	0	12	0	0
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Fr _t				0.850		
Flt Protected						
Satd. Flow (prot)	0	3767	3767	1719	0	0
Flt Permitted						
Satd. Flow (perm)	0	3767	3767	1719	0	0
Link Speed (k/h)		70	70		40	
Link Distance (m)		93.2	36.9		98.9	
Travel Time (s)		4.8	1.9		8.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	0%	2%	2%
Adj. Flow (vph)	0	0	0	13	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	13	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.8	3.8		0.0	
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	0.92	0.92	0.92	0.92	0.92	0.92
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 6.7%	ICU Level of Service A					
Analysis Period (min) 15						

Lanes, Volumes, Timings

8: Highway 404 South-East/West Off-Ramp/Carpool Parking Lot Access & Green Lane East

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	312	0	0	328	4	813	3	67	4	0	20
Future Volume (vph)	6	312	0	0	328	4	813	3	67	4	0	20
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width (m)	3.8	3.8	3.8	3.8	3.8	3.8	3.8	4.0	4.0	4.0	4.0	4.0
Storage Length (m)	20.0		0.0	0.0		20.0	0.0		60.0	0.0		0.0
Storage Lanes	1		0	0		0	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91	0.91	0.95	0.95	1.00	1.00	1.00	1.00
Frt					0.998				0.850			0.850
Flt Protected	0.950						0.950	0.953		0.950		
Satd. Flow (prot)	1942	3771	0	0	5308	0	1791	1836	1675	1984	0	1776
Flt Permitted	0.478						0.950	0.953		0.950		
Satd. Flow (perm)	977	3771	0	0	5308	0	1791	1836	1675	1984	0	1776
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					1				111			111
Link Speed (k/h)		70			70			60			40	
Link Distance (m)		36.9			312.7			301.6			147.9	
Travel Time (s)		1.9			16.1			18.1			13.3	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	3%	0%	0%	5%	0%	3%	0%	6%	0%	0%	0%
Adj. Flow (vph)	6	332	0	0	349	4	865	3	71	4	0	21
Shared Lane Traffic (%)							50%					
Lane Group Flow (vph)	6	332	0	0	353	0	432	436	71	4	0	21
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)		3.8			3.8			4.0			4.0	
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	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.88	0.88	0.88	0.88	0.88
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2			2		1	2	1	1		1
Detector Template	Left	Thru			Thru		Left	Thru	Right	Left		Right
Leading Detector (m)	6.1	30.5			30.5		6.1	30.5	6.1	6.1		6.1
Trailing Detector (m)	0.0	0.0			0.0		0.0	0.0	0.0	0.0		0.0
Detector 1 Position(m)	0.0	0.0			0.0		0.0	0.0	0.0	0.0		0.0
Detector 1 Size(m)	6.1	1.8			1.8		6.1	1.8	6.1	6.1		6.1
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0	0.0	0.0		0.0
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0	0.0	0.0		0.0
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0	0.0	0.0		0.0
Detector 2 Position(m)		28.7			28.7			28.7				
Detector 2 Size(m)		1.8			1.8			1.8				
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	pm+pt	NA			NA		Split	NA	Perm	Prot		Prot

Lanes, Volumes, Timings

8: Highway 404 South-East/West Off-Ramp/Carpool Parking Lot Access & Green Lane East

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	5	2			6		8	8		7		7
Permitted Phases	2								8			
Detector Phase	5	2			6		8	8	8	7		7
Switch Phase												
Minimum Initial (s)	7.0	20.0			20.0		10.0	10.0	10.0	10.0		10.0
Minimum Split (s)	11.0	41.0			41.0		40.5	40.5	40.5	17.5		17.5
Total Split (s)	19.0	74.0			55.0		57.5	57.5	57.5	30.5		30.5
Total Split (%)	11.7%	45.7%			34.0%		35.5%	35.5%	35.5%	18.8%		18.8%
Maximum Green (s)	15.0	66.0			47.0		50.0	50.0	50.0	23.0		23.0
Yellow Time (s)	3.0	5.0			5.0		4.5	4.5	4.5	4.5		4.5
All-Red Time (s)	1.0	3.0			3.0		3.0	3.0	3.0	3.0		3.0
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	4.0	8.0			8.0		7.5	7.5	7.5	7.5		7.5
Lead/Lag	Lead				Lag		Lag	Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	Yes				Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	4.0			4.0		3.0	3.0	3.0	3.0		3.0
Recall Mode	None	Ped			Ped		None	None	None	None		None
Walk Time (s)		7.0			7.0		7.0	7.0	7.0			
Flash Dont Walk (s)		26.0			26.0		26.0	26.0	26.0			
Pedestrian Calls (#/hr)		0			0		0	0	0			
Act Effct Green (s)	40.8	36.5			34.9		29.4	29.4	29.4	10.6		10.6
Actuated g/C Ratio	0.45	0.40			0.38		0.32	0.32	0.32	0.12		0.12
v/c Ratio	0.01	0.22			0.17		0.75	0.74	0.12	0.02		0.07
Control Delay	22.0	22.3			23.7		37.4	36.6	1.7	47.8		0.5
Queue Delay	0.0	0.0			0.0		0.0	0.0	0.0	0.0		0.0
Total Delay	22.0	22.3			23.7		37.4	36.6	1.7	47.8		0.5
LOS	C	C			C		D	D	A	D		A
Approach Delay		22.3			23.7			34.4				8.0
Approach LOS		C			C			C				A

Intersection Summary

Area Type: Other

Cycle Length: 162

Actuated Cycle Length: 91.4

Natural Cycle: 110

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 29.2

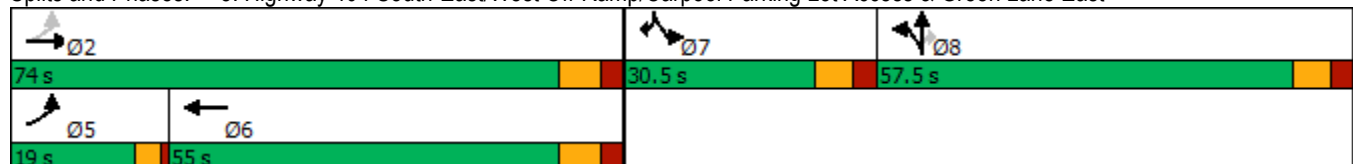
Intersection LOS: C

Intersection Capacity Utilization 65.6%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 8: Highway 404 South-East/West Off-Ramp/Carpool Parking Lot Access & Green Lane East



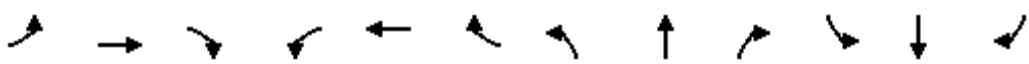
Queues

8: Highway 404 South-East/West Off-Ramp/Carpool Parking Lot Access & Green Lane East

								
Lane Group	EBL	EBT	WBT	NBL	NBT	NBR	SBL	SBR
Lane Group Flow (vph)	6	332	353	432	436	71	4	21
v/c Ratio	0.01	0.22	0.17	0.75	0.74	0.12	0.02	0.07
Control Delay	22.0	22.3	23.7	37.4	36.6	1.7	47.8	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.0	22.3	23.7	37.4	36.6	1.7	47.8	0.5
Queue Length 50th (m)	0.7	23.2	16.7	75.8	76.3	0.0	0.7	0.0
Queue Length 95th (m)	3.8	41.6	33.7	126.6	126.9	3.0	4.6	0.0
Internal Link Dist (m)		12.9	288.7		277.6			
Turn Bay Length (m)	20.0					60.0		
Base Capacity (vph)	603	2876	2888	1036	1062	1016	528	554
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	0.12	0.12	0.42	0.41	0.07	0.01	0.04
Intersection Summary								

HCM Signalized Intersection Capacity Analysis

8: Highway 404 South-East/West Off-Ramp/Carpool Parking Lot Access & Green Lane East

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱↱			↱↱↱		↰	↱	↰	↰		↰
Traffic Volume (vph)	6	312	0	0	328	4	813	3	67	4	0	20
Future Volume (vph)	6	312	0	0	328	4	813	3	67	4	0	20
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width	3.8	3.8	3.8	3.8	3.8	3.8	3.8	4.0	4.0	4.0	4.0	4.0
Total Lost time (s)	4.0	8.0			8.0		7.5	7.5	7.5	7.5		7.5
Lane Util. Factor	1.00	0.95			0.91		0.95	0.95	1.00	1.00		1.00
Frt	1.00	1.00			1.00		1.00	1.00	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00		0.95	0.95	1.00	0.95		1.00
Satd. Flow (prot)	1942	3771			5309		1791	1836	1675	1984		1776
Flt Permitted	0.48	1.00			1.00		0.95	0.95	1.00	0.95		1.00
Satd. Flow (perm)	976	3771			5309		1791	1836	1675	1984		1776
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	6	332	0	0	349	4	865	3	71	4	0	21
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	50	0	0	20
Lane Group Flow (vph)	6	332	0	0	352	0	432	436	21	4	0	1
Heavy Vehicles (%)	0%	3%	0%	0%	5%	0%	3%	0%	6%	0%	0%	0%
Turn Type	pm+pt	NA			NA		Split	NA	Perm	Prot		Prot
Protected Phases	5	2			6		8	8		7		7
Permitted Phases	2								8			
Actuated Green, G (s)	39.9	39.9			34.9		29.4	29.4	29.4	5.2		5.2
Effective Green, g (s)	39.9	39.9			34.9		29.4	29.4	29.4	5.2		5.2
Actuated g/C Ratio	0.41	0.41			0.36		0.30	0.30	0.30	0.05		0.05
Clearance Time (s)	4.0	8.0			8.0		7.5	7.5	7.5	7.5		7.5
Vehicle Extension (s)	3.0	4.0			4.0		3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	409	1543			1900		540	553	505	105		94
v/s Ratio Prot	0.00	c0.09			0.07		c0.24	0.24		c0.00		0.00
v/s Ratio Perm	0.01								0.01			
v/c Ratio	0.01	0.22			0.19		0.80	0.79	0.04	0.04		0.01
Uniform Delay, d1	17.1	18.7			21.5		31.3	31.2	24.1	43.8		43.7
Progression Factor	1.00	1.00			1.00		1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	0.0	0.1			0.1		8.3	7.3	0.0	0.1		0.1
Delay (s)	17.2	18.8			21.6		39.6	38.5	24.1	43.9		43.8
Level of Service	B	B			C		D	D	C	D		D
Approach Delay (s)		18.7			21.6			38.0			43.8	
Approach LOS		B			C			D			D	
Intersection Summary												
HCM 2000 Control Delay			30.6				HCM 2000 Level of Service		C			
HCM 2000 Volume to Capacity ratio			0.46									
Actuated Cycle Length (s)			97.5				Sum of lost time (s)		27.0			
Intersection Capacity Utilization			65.6%				ICU Level of Service		C			
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings
1: Leslie Street & Green Lane East

09/23/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 			 	
Traffic Volume (vph)	77	1063	490	103	742	102	212	267	79	301	443	69
Future Volume (vph)	77	1063	490	103	742	102	212	267	79	301	443	69
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width (m)	3.5	3.6	3.3	3.7	3.7	3.5	4.8	3.6	3.8	3.6	3.8	3.3
Storage Length (m)	125.0		70.0	185.0		85.0	55.0		35.0	85.0		35.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	1.00		0.98	1.00		0.97	1.00		0.98	0.99		0.99
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1824	3619	1508	1830	3525	1303	2031	3725	1738	1881	3808	1643
Flt Permitted	0.306			0.164			0.257			0.555		
Satd. Flow (perm)	587	3619	1485	316	3525	1270	549	3725	1704	1093	3808	1622
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			364			145			114			141
Link Speed (k/h)		70			70			60			60	
Link Distance (m)		324.4			502.9			426.7			282.0	
Travel Time (s)		16.7			25.9			25.6			16.9	
Confl. Peds. (#/hr)	2		2	2		2	1		6	6		1
Confl. Bikes (#/hr)			1			1						
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	3%	5%	9%	5%	9%	29%	6%	2%	0%	1%	2%	0%
Adj. Flow (vph)	79	1085	500	105	757	104	216	272	81	307	452	70
Shared Lane Traffic (%)												
Lane Group Flow (vph)	79	1085	500	105	757	104	216	272	81	307	452	70
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			4.8			4.8	
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	0.95	0.94	0.98	0.92	0.92	0.95	0.79	0.94	0.91	0.94	0.91	0.98
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lanes, Volumes, Timings

1: Leslie Street & Green Lane East

09/23/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6		6	2		2	8		8	4		4
Detector Phase	1	6	6	5	2	2	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	7.0	30.0	30.0	7.0	30.0	30.0	7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	11.0	44.5	44.5	11.0	44.5	44.5	11.0	45.0	45.0	11.0	45.0	45.0
Total Split (s)	24.0	77.5	77.5	19.0	72.5	72.5	24.0	43.0	43.0	19.0	38.0	38.0
Total Split (%)	15.1%	48.9%	48.9%	12.0%	45.7%	45.7%	15.1%	27.1%	27.1%	12.0%	24.0%	24.0%
Maximum Green (s)	20.0	70.0	70.0	15.0	65.0	65.0	20.0	35.0	35.0	15.0	30.0	30.0
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	4.5	4.5	3.0	4.5	4.5
All-Red Time (s)	1.0	2.5	2.5	1.0	2.5	2.5	1.0	3.5	3.5	1.0	3.5	3.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	7.5	7.5	4.0	7.5	7.5	4.0	8.0	8.0	4.0	8.0	8.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		30.0	30.0		30.0	30.0		30.0	30.0		30.0	30.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	82.1	70.3	70.3	84.5	71.5	71.5	43.8	23.7	23.7	41.7	22.6	22.6
Actuated g/C Ratio	0.58	0.49	0.49	0.59	0.50	0.50	0.31	0.17	0.17	0.29	0.16	0.16
v/c Ratio	0.19	0.61	0.54	0.36	0.43	0.15	0.64	0.44	0.21	0.76	0.75	0.19
Control Delay	13.8	29.1	9.4	16.2	24.5	1.4	44.7	54.9	3.9	53.9	65.7	1.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.8	29.1	9.4	16.2	24.5	1.4	44.7	54.9	3.9	53.9	65.7	1.1
LOS	B	C	A	B	C	A	D	D	A	D	E	A
Approach Delay		22.5			21.1			43.8			55.9	
Approach LOS		C			C			D			E	

Intersection Summary

Area Type: Other

Cycle Length: 158.5

Actuated Cycle Length: 142.2

Natural Cycle: 115

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.76

Intersection Signal Delay: 32.0

Intersection LOS: C

Intersection Capacity Utilization 84.5%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 1: Leslie Street & Green Lane East



FB_AM_2029 2:07 pm 08/21/2024 Baseline

Synchro 11 Report

Page 2

Queues

1: Leslie Street & Green Lane East

09/23/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	79	1085	500	105	757	104	216	272	81	307	452	70
v/c Ratio	0.19	0.61	0.54	0.36	0.43	0.15	0.64	0.44	0.21	0.76	0.75	0.19
Control Delay	13.8	29.1	9.4	16.2	24.5	1.4	44.7	54.9	3.9	53.9	65.7	1.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.8	29.1	9.4	16.2	24.5	1.4	44.7	54.9	3.9	53.9	65.7	1.1
Queue Length 50th (m)	8.7	114.4	21.8	11.7	69.7	0.0	45.3	36.4	0.0	68.8	64.6	0.0
Queue Length 95th (m)	18.3	162.4	62.7	23.3	101.3	3.7	68.3	51.3	5.7	99.4	87.4	0.0
Internal Link Dist (m)	300.4		478.9		402.7		258.0					
Turn Bay Length (m)	125.0		70.0	185.0		85.0	55.0		35.0	85.0		35.0
Base Capacity (vph)	535	1789	918	354	1771	710	390	921	507	403	806	455
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.61	0.54	0.30	0.43	0.15	0.55	0.30	0.16	0.76	0.56	0.15
Intersection Summary												

HCM Signalized Intersection Capacity Analysis

1: Leslie Street & Green Lane East

09/23/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	77	1063	490	103	742	102	212	267	79	301	443	69
Future Volume (vph)	77	1063	490	103	742	102	212	267	79	301	443	69
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width	3.5	3.6	3.3	3.7	3.7	3.5	4.8	3.6	3.8	3.6	3.8	3.3
Total Lost time (s)	4.0	7.5	7.5	4.0	7.5	7.5	4.0	8.0	8.0	4.0	8.0	8.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1824	3619	1485	1830	3525	1271	2031	3725	1705	1877	3808	1622
Flt Permitted	0.31	1.00	1.00	0.16	1.00	1.00	0.26	1.00	1.00	0.56	1.00	1.00
Satd. Flow (perm)	586	3619	1485	315	3525	1271	549	3725	1705	1096	3808	1622
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	79	1085	500	105	757	104	216	272	81	307	452	70
RTOR Reduction (vph)	0	0	184	0	0	52	0	0	67	0	0	59
Lane Group Flow (vph)	79	1085	316	105	757	52	216	272	14	307	452	11
Confl. Peds. (#/hr)	2		2	2		2	1		6	6		1
Confl. Bikes (#/hr)			1			1						
Heavy Vehicles (%)	3%	5%	9%	5%	9%	29%	6%	2%	0%	1%	2%	0%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6		6	2		2	8		8	4		4
Actuated Green, G (s)	78.6	70.3	70.3	81.0	71.5	71.5	39.9	23.7	23.7	37.7	22.6	22.6
Effective Green, g (s)	78.6	70.3	70.3	81.0	71.5	71.5	39.9	23.7	23.7	37.7	22.6	22.6
Actuated g/C Ratio	0.55	0.49	0.49	0.57	0.50	0.50	0.28	0.17	0.17	0.27	0.16	0.16
Clearance Time (s)	4.0	7.5	7.5	4.0	7.5	7.5	4.0	8.0	8.0	4.0	8.0	8.0
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	396	1790	734	280	1773	639	323	621	284	373	605	257
v/s Ratio Prot	0.01	c0.30		c0.03	0.21		0.08	0.07		c0.09	0.12	
v/s Ratio Perm	0.10		0.21	0.19		0.04	0.11		0.01	c0.13		0.01
v/c Ratio	0.20	0.61	0.43	0.38	0.43	0.08	0.67	0.44	0.05	0.82	0.75	0.04
Uniform Delay, d1	15.3	25.9	23.1	17.2	22.3	18.3	41.7	53.2	49.7	46.6	57.0	50.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	1.5	1.8	0.8	0.8	0.3	5.2	0.5	0.1	13.6	5.0	0.1
Delay (s)	15.6	27.4	24.9	18.0	23.1	18.5	46.9	53.7	49.8	60.2	62.0	50.7
Level of Service	B	C	C	B	C	B	D	D	D	E	E	D
Approach Delay (s)		26.1			22.1			50.6			60.4	
Approach LOS		C			C			D			E	
Intersection Summary												
HCM 2000 Control Delay			35.7				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.65									
Actuated Cycle Length (s)			142.1				Sum of lost time (s)			23.5		
Intersection Capacity Utilization			84.5%				ICU Level of Service			E		
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings

2: Harry Walker Parkway/Extension of HWP & Green Lane East

09/23/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	1278	197	192	881	53	34	13	42	28	0	0
Future Volume (vph)	7	1278	197	192	881	53	34	13	42	28	0	0
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width (m)	3.7	3.8	3.8	3.3	3.7	3.7	3.0	3.7	3.0	3.7	3.7	3.7
Storage Length (m)	65.0		65.0	50.0		30.0	0.0		0.0	60.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	7.6			7.6			7.6			2.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.886				
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1921	3735	1671	1766	3461	1719	1430	1642	0	1921	2022	0
Flt Permitted	0.311			0.153			0.950			0.000		
Satd. Flow (perm)	629	3735	1671	284	3461	1719	1430	1642	0	0	2022	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			131			62			44			
Link Speed (k/h)		70			70			50			50	
Link Distance (m)		502.9			92.9			200.4			84.4	
Travel Time (s)		25.9			4.8			14.4			6.1	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	4%	4%	4%	11%	0%	24%	0%	12%	0%	0%	0%
Adj. Flow (vph)	7	1331	205	200	918	55	35	14	44	29	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	7	1331	205	200	918	55	35	58	0	29	0	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)		4.9			4.9			4.9			1.6	
Two way Left Turn Lane												
Headway Factor	0.92	0.91	0.91	0.98	0.92	0.92	1.02	0.92	1.02	0.92	0.92	0.92
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		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	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt		

Lanes, Volumes, Timings

2: Harry Walker Parkway/Extension of HWP & Green Lane East

09/23/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		6		5	2		3	8		7	4	
Permitted Phases	6		6	2		2	8			4		
Detector Phase	6	6	6	5	2	2	3	8		7	4	
Switch Phase												
Minimum Initial (s)	30.0	30.0	30.0	7.0	30.0	30.0	5.0	10.0		7.0	5.0	
Minimum Split (s)	37.5	37.5	37.5	11.0	37.5	37.5	9.5	32.0		11.0	25.0	
Total Split (s)	81.0	81.0	81.0	25.0	106.0	106.0	11.0	32.0		12.0	33.0	
Total Split (%)	54.0%	54.0%	54.0%	16.7%	70.7%	70.7%	7.3%	21.3%		8.0%	22.0%	
Maximum Green (s)	73.5	73.5	73.5	21.0	98.5	98.5	6.5	25.0		8.0	26.0	
Yellow Time (s)	5.0	5.0	5.0	3.0	5.0	5.0	3.5	4.0		3.0	4.0	
All-Red Time (s)	2.5	2.5	2.5	1.0	2.5	2.5	1.0	3.0		1.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.5	7.5	7.5	4.0	7.5	7.5	4.5	7.0		4.0	7.0	
Lead/Lag	Lag	Lag	Lag	Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	0.2	0.2	0.2	3.0	0.2	0.2	3.0	0.2		3.0	3.0	
Recall Mode	C-Max	C-Max	C-Max	None	C-Max	C-Max	None	None		None	None	
Walk Time (s)	7.0	7.0	7.0		0.0	0.0		7.0			7.0	
Flash Dont Walk (s)	19.0	19.0	19.0		0.0	0.0		18.0			11.0	
Pedestrian Calls (#/hr)	0	0	0		0	0		0			0	
Act Effct Green (s)	105.0	105.0	105.0	125.3	123.3	123.3	18.2	10.0		7.5		
Actuated g/C Ratio	0.70	0.70	0.70	0.84	0.82	0.82	0.12	0.07		0.05		
v/c Ratio	0.02	0.51	0.17	0.55	0.32	0.04	0.20	0.39		0.30		
Control Delay	11.7	13.7	4.6	9.5	4.9	0.9	58.4	32.9		76.9		
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0		
Total Delay	11.7	13.7	4.6	9.5	4.9	0.9	58.4	32.9		76.9		
LOS	B	B	A	A	A	A	E	C		E		
Approach Delay		12.5			5.5			42.5			76.9	
Approach LOS		B			A			D			E	

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

Natural Cycle: 95

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.55

Intersection Signal Delay: 11.2

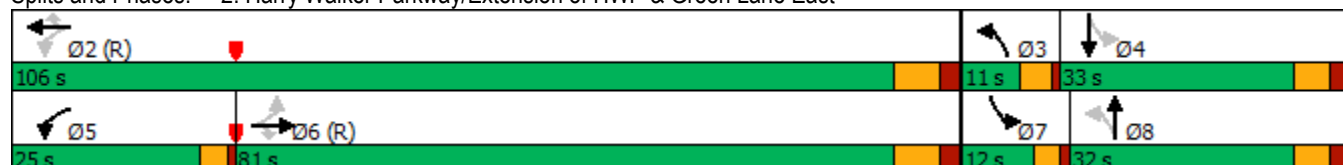
Intersection LOS: B

Intersection Capacity Utilization 76.8%

ICU Level of Service D

Analysis Period (min) 15

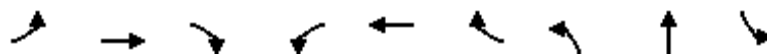
Splits and Phases: 2: Harry Walker Parkway/Extension of HWP & Green Lane East



Queues

2: Harry Walker Parkway/Extension of HWP & Green Lane East

09/23/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL
Lane Group Flow (vph)	7	1331	205	200	918	55	35	58	29
v/c Ratio	0.02	0.51	0.17	0.55	0.32	0.04	0.20	0.39	0.30
Control Delay	11.7	13.7	4.6	9.5	4.9	0.9	58.4	32.9	76.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.7	13.7	4.6	9.5	4.9	0.9	58.4	32.9	76.9
Queue Length 50th (m)	0.7	107.1	7.6	12.7	42.0	0.0	9.1	4.0	8.5
Queue Length 95th (m)	3.0	147.2	20.2	19.2	50.8	2.8	20.0	18.6	19.3
Internal Link Dist (m)		478.9			68.9			176.4	
Turn Bay Length (m)	65.0		65.0	50.0		30.0			60.0
Base Capacity (vph)	440	2615	1209	444	2843	1423	175	310	102
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.51	0.17	0.45	0.32	0.04	0.20	0.19	0.28
Intersection Summary									

HCM Signalized Intersection Capacity Analysis

2: Harry Walker Parkway/Extension of HWP & Green Lane East

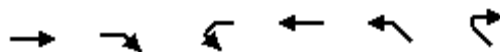
09/23/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	1278	197	192	881	53	34	13	42	28	0	0
Future Volume (vph)	7	1278	197	192	881	53	34	13	42	28	0	0
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width	3.7	3.8	3.8	3.3	3.7	3.7	3.0	3.7	3.0	3.7	3.7	3.7
Total Lost time (s)	7.5	7.5	7.5	4.0	7.5	7.5	4.5	7.0		4.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00		
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.89		1.00		
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95		
Satd. Flow (prot)	1921	3735	1671	1766	3461	1719	1430	1643		1921		
Flt Permitted	0.31	1.00	1.00	0.15	1.00	1.00	0.95	1.00		0.00		
Satd. Flow (perm)	629	3735	1671	285	3461	1719	1430	1643		0		
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	7	1331	205	200	918	55	35	14	44	29	0	0
RTOR Reduction (vph)	0	0	42	0	0	11	0	42	0	0	0	0
Lane Group Flow (vph)	7	1331	163	200	918	44	35	16	0	29	0	0
Heavy Vehicles (%)	0%	4%	4%	4%	11%	0%	24%	0%	12%	0%	0%	0%
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt		
Protected Phases		6		5	2		3	8		7	4	
Permitted Phases	6		6	2		2	8			4		
Actuated Green, G (s)	102.1	102.1	102.1	118.8	118.8	118.8	19.2	8.0		4.7		
Effective Green, g (s)	102.1	102.1	102.1	118.8	118.8	118.8	19.2	8.0		4.7		
Actuated g/C Ratio	0.68	0.68	0.68	0.79	0.79	0.79	0.13	0.05		0.03		
Clearance Time (s)	7.5	7.5	7.5	4.0	7.5	7.5	4.5	7.0		4.0		
Vehicle Extension (s)	0.2	0.2	0.2	3.0	0.2	0.2	3.0	0.2		3.0		
Lane Grp Cap (vph)	428	2542	1137	351	2741	1361	183	87		60		
v/s Ratio Prot		0.36		c0.05	0.27		c0.02	0.01		c0.02		
v/s Ratio Perm	0.01		0.10	c0.40		0.03						
v/c Ratio	0.02	0.52	0.14	0.57	0.33	0.03	0.19	0.19		0.48		
Uniform Delay, d1	7.7	11.9	8.5	8.8	4.4	3.3	58.5	67.9		71.5		
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00		
Incremental Delay, d2	0.1	0.8	0.3	2.1	0.3	0.0	0.5	0.4		6.0		
Delay (s)	7.8	12.7	8.7	10.9	4.7	3.4	59.0	68.3		77.5		
Level of Service	A	B	A	B	A	A	E	E		E		
Approach Delay (s)		12.1			5.7			64.8			77.5	
Approach LOS		B			A			E			E	
Intersection Summary												
HCM 2000 Control Delay			11.9				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.56									
Actuated Cycle Length (s)			150.0				Sum of lost time (s)			23.0		
Intersection Capacity Utilization			76.8%				ICU Level of Service			D		
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings

3: Highway 404 West-South On-ramp & Green Lane East

09/23/2024

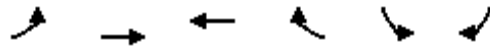


Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑↑	↑		↑↑		
Traffic Volume (vph)	7	12	0	53	0	0
Future Volume (vph)	7	12	0	53	0	0
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Width (m)	3.8	4.2	3.8	3.8	3.7	3.7
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	0.850					
Flt Protected						
Satd. Flow (prot)	3808	1778	0	3808	0	0
Flt Permitted						
Satd. Flow (perm)	3808	1778	0	3808	0	0
Link Speed (k/h)	70			70	60	
Link Distance (m)	92.9			303.3	172.8	
Travel Time (s)	4.8			15.6	10.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	8	13	0	58	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	8	13	0	58	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.3			3.3	0.0	
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	0.91	0.86	0.91	0.91	0.92	0.92
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Pretimed					
Intersection Capacity Utilization	6.7%			ICU Level of Service A		
Analysis Period (min)	15					

Lanes, Volumes, Timings

4: Green Lane East & Highway 404 North-East/West Off-Ramp

09/23/2024

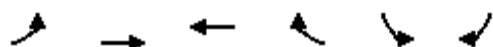


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↘↘	↗
Traffic Volume (vph)	0	392	691	0	24	456
Future Volume (vph)	0	392	691	0	24	456
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Width (m)	3.8	3.8	3.8	3.8	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	0.95
Frt					0.865	0.850
Flt Protected					0.995	
Satd. Flow (prot)	0	3597	3349	0	1751	1638
Flt Permitted					0.995	
Satd. Flow (perm)	0	3597	3349	0	1751	1638
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)					155	155
Link Speed (k/h)		70	70		60	
Link Distance (m)		303.3	111.8		268.4	
Travel Time (s)		15.6	5.7		16.1	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	8%	16%	0%	0%	3%
Adj. Flow (vph)	0	422	743	0	26	490
Shared Lane Traffic (%)						48%
Lane Group Flow (vph)	0	422	743	0	261	255
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		4.0	
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	0.91	0.91	0.91	0.91	0.88	0.88
Turning Speed (k/h)	24			14	24	14
Number of Detectors		2	2		1	1
Detector Template		Thru	Thru		Left	Right
Leading Detector (m)		30.5	30.5		6.1	6.1
Trailing Detector (m)		0.0	0.0		0.0	0.0
Detector 1 Position(m)		0.0	0.0		0.0	0.0
Detector 1 Size(m)		1.8	1.8		6.1	6.1
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0
Detector 2 Position(m)		28.7	28.7			
Detector 2 Size(m)		1.8	1.8			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type		NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases						4
Detector Phase		2	6		4	4

Lanes, Volumes, Timings

4: Green Lane East & Highway 404 North-East/West Off-Ramp

09/23/2024



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Switch Phase						
Minimum Initial (s)		30.0	30.0		15.0	15.0
Minimum Split (s)		37.7	37.7		22.2	22.2
Total Split (s)		52.7	52.7		37.2	37.2
Total Split (%)		58.6%	58.6%		41.4%	41.4%
Maximum Green (s)		45.0	45.0		30.0	30.0
Yellow Time (s)		5.9	5.9		5.1	5.1
All-Red Time (s)		1.8	1.8		2.1	2.1
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		7.7	7.7		7.2	7.2
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		4.0	4.0		3.0	3.0
Recall Mode		Max	Max		Max	Max
Act Effect Green (s)		45.0	45.0		30.0	30.0
Actuated g/C Ratio		0.50	0.50		0.33	0.33
v/c Ratio		0.23	0.44		0.38	0.39
Control Delay		13.1	15.5		11.1	11.1
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		13.1	15.5		11.1	11.1
LOS		B	B		B	B
Approach Delay		13.1	15.5		11.1	
Approach LOS		B	B		B	

Intersection Summary

Area Type: Other

Cycle Length: 89.9

Actuated Cycle Length: 89.9

Natural Cycle: 60

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.44

Intersection Signal Delay: 13.6

Intersection LOS: B

Intersection Capacity Utilization 55.3%

ICU Level of Service B

Analysis Period (min) 15

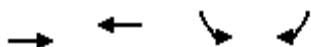
Splits and Phases: 4: Green Lane East & Highway 404 North-East/West Off-Ramp

→ Ø2		← Ø4
52.7 s		37.2 s
← Ø6		
52.7 s		

Queues

4: Green Lane East & Highway 404 North-East/West Off-Ramp

09/23/2024

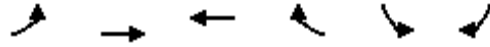


Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	422	743	261	255
v/c Ratio	0.23	0.44	0.38	0.39
Control Delay	13.1	15.5	11.1	11.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	13.1	15.5	11.1	11.1
Queue Length 50th (m)	20.6	41.3	12.8	12.7
Queue Length 95th (m)	29.4	55.2	31.2	32.2
Internal Link Dist (m)	279.3	87.8	244.4	
Turn Bay Length (m)				
Base Capacity (vph)	1800	1676	687	649
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.23	0.44	0.38	0.39
Intersection Summary				

HCM Signalized Intersection Capacity Analysis

4: Green Lane East & Highway 404 North-East/West Off-Ramp

09/23/2024

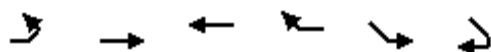


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↑↑	↑↑
Traffic Volume (vph)	0	392	691	0	24	456
Future Volume (vph)	0	392	691	0	24	456
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Width	3.8	3.8	3.8	3.8	4.0	4.0
Total Lost time (s)		7.7	7.7		7.2	7.2
Lane Util. Factor		0.95	0.95		1.00	0.95
Frt		1.00	1.00		0.86	0.85
Flt Protected		1.00	1.00		1.00	1.00
Satd. Flow (prot)		3597	3349		1751	1638
Flt Permitted		1.00	1.00		1.00	1.00
Satd. Flow (perm)		3597	3349		1751	1638
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	422	743	0	26	490
RTOR Reduction (vph)	0	0	0	0	103	103
Lane Group Flow (vph)	0	422	743	0	158	152
Heavy Vehicles (%)	0%	8%	16%	0%	0%	3%
Turn Type		NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases						4
Actuated Green, G (s)		45.0	45.0		30.0	30.0
Effective Green, g (s)		45.0	45.0		30.0	30.0
Actuated g/C Ratio		0.50	0.50		0.33	0.33
Clearance Time (s)		7.7	7.7		7.2	7.2
Vehicle Extension (s)		4.0	4.0		3.0	3.0
Lane Grp Cap (vph)		1800	1676		584	546
v/s Ratio Prot		0.12	c0.22		0.09	
v/s Ratio Perm						c0.09
v/c Ratio		0.23	0.44		0.27	0.28
Uniform Delay, d1		12.7	14.4		21.9	22.0
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.3	0.9		1.1	1.3
Delay (s)		13.0	15.3		23.1	23.3
Level of Service		B	B		C	C
Approach Delay (s)		13.0	15.3		23.2	
Approach LOS		B	B		C	
Intersection Summary						
HCM 2000 Control Delay			17.1		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.38			
Actuated Cycle Length (s)			89.9		Sum of lost time (s)	14.9
Intersection Capacity Utilization			55.3%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

Lanes, Volumes, Timings

5: Green Lane East & Highway 404 East-South On-Ramp

09/23/2024



Lane Group	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations		↑↑	↑↑	↗		
Traffic Volume (vph)	0	7	46	0	0	0
Future Volume (vph)	0	7	46	0	0	0
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Width (m)	3.8	3.8	3.8	3.8	3.7	3.7
Storage Length (m)	0.0			70.0	0.0	0.0
Storage Lanes	0			0	0	0
Taper Length (m)	7.6				7.6	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	0	3808	3808	2004	0	0
Flt Permitted						
Satd. Flow (perm)	0	3808	3808	2004	0	0
Link Speed (k/h)		70	70		30	
Link Distance (m)		111.8	136.3		95.7	
Travel Time (s)		5.7	7.0		11.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	8	50	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	8	50	0	0	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		0.0	
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	0.91	0.91	0.91	0.91	0.92	0.92
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Pretimed					
Intersection Capacity Utilization	55.3%			ICU Level of Service B		
Analysis Period (min)	15					

Lanes, Volumes, Timings

6: Highway 404 West-North On-Ramp & Green Lane East

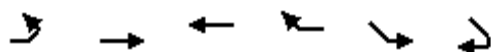
09/23/2024

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑↑	↑		↑↑		
Traffic Volume (vph)	0	7	0	51	0	0
Future Volume (vph)	0	7	0	51	0	0
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Width (m)	3.8	4.0	3.7	3.7	3.7	3.7
Storage Length (m)		15.0	0.0		0.0	0.0
Storage Lanes		1	0		0	0
Taper Length (m)			7.6		7.6	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt		0.850				
Flt Protected						
Satd. Flow (prot)	3808	1741	0	3767	0	0
Flt Permitted						
Satd. Flow (perm)	3808	1741	0	3767	0	0
Link Speed (k/h)	70			70	30	
Link Distance (m)	136.3			93.2	107.1	
Travel Time (s)	7.0			4.8	12.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	8	0	55	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	8	0	55	0	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	0.0	
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	0.91	0.88	0.92	0.92	0.92	0.92
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Pretimed					
Intersection Capacity Utilization 6.7%	ICU Level of Service A					
Analysis Period (min) 15						

Lanes, Volumes, Timings

7: Green Lane East & Highway 404 East-North On-Ramp

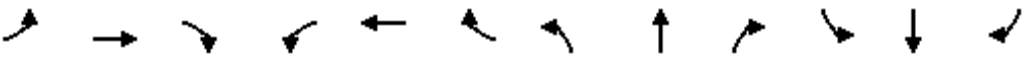
09/23/2024



Lane Group	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations		↑↑	↑↑	↗		
Traffic Volume (vph)	0	0	46	4	0	0
Future Volume (vph)	0	0	46	4	0	0
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	0.850					
Flt Protected						
Satd. Flow (prot)	0	3767	3767	1719	0	0
Flt Permitted						
Satd. Flow (perm)	0	3767	3767	1719	0	0
Link Speed (k/h)	70		48	40		
Link Distance (m)	93.2		36.9	98.9		
Travel Time (s)	4.8		2.8	8.9		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	0%	2%	2%
Adj. Flow (vph)	0	0	50	4	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	50	4	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)	3.8		3.8	0.0		
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	0.92	0.92	0.92	0.92	0.92	0.92
Turning Speed (k/h)	24			14	24	14
Sign Control	Free		Free	Free		
Intersection Summary						
Area Type:	Other					
Control Type:	Pretimed					
Intersection Capacity Utilization 6.7%				ICU Level of Service A		
Analysis Period (min) 15						

Lanes, Volumes, Timings

8: Highway 404 South-East/West Off-Ramp/Carpool Parking Lot Access & Green Lane East

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	283	0	0	269	0	453	4	40	0	0	7
Future Volume (vph)	8	283	0	0	269	0	453	4	40	0	0	7
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width (m)	3.8	3.8	3.8	3.8	3.8	3.8	3.8	4.0	4.0	4.0	4.0	4.0
Storage Length (m)	20.0		0.0	0.0		20.0	0.0		60.0	0.0		0.0
Storage Lanes	1		0	0		0	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91	0.91	0.95	0.95	1.00	1.00	1.00	1.00
Fr't									0.850			0.850
Flt Protected	0.950						0.950	0.953				
Satd. Flow (prot)	1719	3665	0	0	4770	0	1619	1662	1420	2089	0	1544
Flt Permitted	0.509						0.950	0.953				
Satd. Flow (perm)	921	3665	0	0	4770	0	1619	1662	1420	2089	0	1544
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)									111			332
Link Speed (k/h)		70			70			60				40
Link Distance (m)		36.9			312.7			301.6				147.9
Travel Time (s)		1.9			16.1			18.1				13.3
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	13%	6%	0%	0%	17%	0%	14%	0%	25%	0%	0%	15%
Adj. Flow (vph)	9	304	0	0	289	0	487	4	43	0	0	8
Shared Lane Traffic (%)							50%					
Lane Group Flow (vph)	9	304	0	0	289	0	243	248	43	0	0	8
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)		3.8			3.8			4.0			4.0	
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	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.88	0.88	0.88	0.88	0.88
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2			2		1	2	1	1		1
Detector Template	Left	Thru			Thru		Left	Thru	Right	Left		Right
Leading Detector (m)	6.1	30.5			30.5		6.1	30.5	6.1	6.1		6.1
Trailing Detector (m)	0.0	0.0			0.0		0.0	0.0	0.0	0.0		0.0
Detector 1 Position(m)	0.0	0.0			0.0		0.0	0.0	0.0	0.0		0.0
Detector 1 Size(m)	6.1	1.8			1.8		6.1	1.8	6.1	6.1		6.1
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0	0.0	0.0		0.0
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0	0.0	0.0		0.0
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0	0.0	0.0		0.0
Detector 2 Position(m)		28.7			28.7			28.7				
Detector 2 Size(m)		1.8			1.8			1.8				
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	pm+pt	NA			NA		Split	NA	Perm	Prot		Prot

Lanes, Volumes, Timings

8: Highway 404 South-East/West Off-Ramp/Carpool Parking Lot Access & Green Lane East

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	5	2			6		8	8		7		7
Permitted Phases	2								8			
Detector Phase	5	2			6		8	8	8	7		7
Switch Phase												
Minimum Initial (s)	7.0	20.0			20.0		10.0	10.0	10.0	10.0		10.0
Minimum Split (s)	11.0	41.0			41.0		40.5	40.5	40.5	17.5		17.5
Total Split (s)	19.0	74.0			55.0		57.5	57.5	57.5	30.5		30.5
Total Split (%)	11.7%	45.7%			34.0%		35.5%	35.5%	35.5%	18.8%		18.8%
Maximum Green (s)	15.0	66.0			47.0		50.0	50.0	50.0	23.0		23.0
Yellow Time (s)	3.0	5.0			5.0		4.5	4.5	4.5	4.5		4.5
All-Red Time (s)	1.0	3.0			3.0		3.0	3.0	3.0	3.0		3.0
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	4.0	8.0			8.0		7.5	7.5	7.5	7.5		7.5
Lead/Lag	Lead				Lag		Lag	Lag	Lag	Lead		Lead
Lead-Lag Optimize?	Yes				Yes		Yes	Yes	Yes	Yes		Yes
Vehicle Extension (s)	3.0	4.0			4.0		3.0	3.0	3.0	3.0		3.0
Recall Mode	None	Ped			Ped		None	None	None	None		None
Walk Time (s)		7.0			7.0		7.0	7.0	7.0			
Flash Dont Walk (s)		26.0			26.0		26.0	26.0	26.0			
Pedestrian Calls (#/hr)		0			0		0	0	0			
Act Effct Green (s)	40.2	36.0			34.5		16.5	16.5	16.5			10.5
Actuated g/C Ratio	0.57	0.51			0.49		0.23	0.23	0.23			0.15
v/c Ratio	0.01	0.16			0.12		0.65	0.64	0.10			0.02
Control Delay	11.1	11.8			13.6		34.5	34.1	0.5			0.0
Queue Delay	0.0	0.0			0.0		0.0	0.0	0.0			0.0
Total Delay	11.1	11.8			13.6		34.5	34.1	0.5			0.0
LOS	B	B			B		C	C	A			A
Approach Delay		11.7			13.6			31.6				
Approach LOS		B			B			C				

Intersection Summary

Area Type: Other

Cycle Length: 162

Actuated Cycle Length: 71.1

Natural Cycle: 110

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.65

Intersection Signal Delay: 21.4

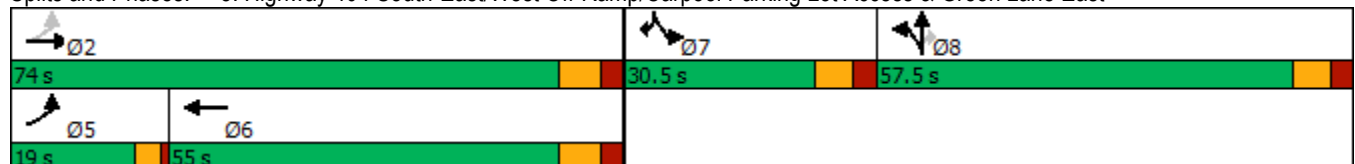
Intersection LOS: C

Intersection Capacity Utilization 56.2%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 8: Highway 404 South-East/West Off-Ramp/Carpool Parking Lot Access & Green Lane East



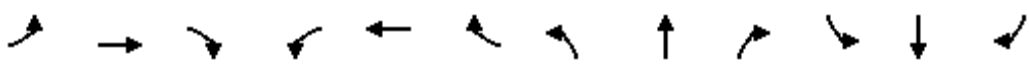
Queues

8: Highway 404 South-East/West Off-Ramp/Carpool Parking Lot Access & Green Lane East

							
Lane Group	EBL	EBT	WBT	NBL	NBT	NBR	SBR
Lane Group Flow (vph)	9	304	289	243	248	43	8
v/c Ratio	0.01	0.16	0.12	0.65	0.64	0.10	0.02
Control Delay	11.1	11.8	13.6	34.5	34.1	0.5	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.1	11.8	13.6	34.5	34.1	0.5	0.0
Queue Length 50th (m)	0.4	9.2	5.9	27.0	27.5	0.0	0.0
Queue Length 95th (m)	3.8	29.5	22.8	71.4	72.3	0.0	0.0
Internal Link Dist (m)		12.9	288.7		277.6		
Turn Bay Length (m)	20.0					60.0	
Base Capacity (vph)	696	3391	3299	1191	1222	1074	742
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	0.01	0.09	0.09	0.20	0.20	0.04	0.01
Intersection Summary							

HCM Signalized Intersection Capacity Analysis

8: Highway 404 South-East/West Off-Ramp/Carpool Parking Lot Access & Green Lane East

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↗			↗		↰	↗	↗	↰		↗
Traffic Volume (vph)	8	283	0	0	269	0	453	4	40	0	0	7
Future Volume (vph)	8	283	0	0	269	0	453	4	40	0	0	7
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width	3.8	3.8	3.8	3.8	3.8	3.8	3.8	4.0	4.0	4.0	4.0	4.0
Total Lost time (s)	4.0	8.0			8.0		7.5	7.5	7.5			7.5
Lane Util. Factor	1.00	0.95			0.91		0.95	0.95	1.00			1.00
Frt	1.00	1.00			1.00		1.00	1.00	0.85			0.85
Flt Protected	0.95	1.00			1.00		0.95	0.95	1.00			1.00
Satd. Flow (prot)	1719	3665			4770		1619	1662	1420			1544
Flt Permitted	0.51	1.00			1.00		0.95	0.95	1.00			1.00
Satd. Flow (perm)	921	3665			4770		1619	1662	1420			1544
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	9	304	0	0	289	0	487	4	43	0	0	8
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	34	0	0	8
Lane Group Flow (vph)	9	304	0	0	289	0	243	248	9	0	0	0
Heavy Vehicles (%)	13%	6%	0%	0%	17%	0%	14%	0%	25%	0%	0%	15%
Turn Type	pm+pt	NA			NA		Split	NA	Perm	Prot		Prot
Protected Phases	5	2			6		8	8		7		7
Permitted Phases	2								8			
Actuated Green, G (s)	39.4	39.4			34.5		16.5	16.5	16.5			1.4
Effective Green, g (s)	39.4	39.4			34.5		16.5	16.5	16.5			1.4
Actuated g/C Ratio	0.49	0.49			0.43		0.21	0.21	0.21			0.02
Clearance Time (s)	4.0	8.0			8.0		7.5	7.5	7.5			7.5
Vehicle Extension (s)	3.0	4.0			4.0		3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	460	1798			2049		332	341	291			26
v/s Ratio Prot	0.00	c0.08			0.06		c0.15	0.15				c0.00
v/s Ratio Perm	0.01								0.01			
v/c Ratio	0.02	0.17			0.14		0.73	0.73	0.03			0.01
Uniform Delay, d1	10.6	11.4			13.9		29.8	29.8	25.5			38.8
Progression Factor	1.00	1.00			1.00		1.00	1.00	1.00			1.00
Incremental Delay, d2	0.0	0.1			0.0		8.1	7.5	0.0			0.1
Delay (s)	10.6	11.4			13.9		37.9	37.3	25.5			38.8
Level of Service	B	B			B		D	D	C			D
Approach Delay (s)		11.4			13.9			36.6			38.8	
Approach LOS		B			B			D			D	
Intersection Summary												
HCM 2000 Control Delay			24.0				HCM 2000 Level of Service		C			
HCM 2000 Volume to Capacity ratio			0.35									
Actuated Cycle Length (s)			80.3				Sum of lost time (s)		27.0			
Intersection Capacity Utilization			56.2%				ICU Level of Service		B			
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings
101: Leslie Street & Industrial Development Site Access

09/23/2024

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	356	0	0	777
Future Volume (vph)	0	0	356	0	0	777
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1983	0	1983	0	0	1983
Flt Permitted						
Satd. Flow (perm)	1983	0	1983	0	0	1983
Link Speed (k/h)	30		60			60
Link Distance (m)	318.5		282.0			250.3
Travel Time (s)	38.2		16.9			15.0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	0	379	0	0	827
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	379	0	0	827
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		3.6			3.6
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	0.92	0.92	0.92	0.92	0.92	0.92
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 42.2%			ICU Level of Service A			
Analysis Period (min) 15						

HCM Unsignalized Intersection Capacity Analysis

101: Leslie Street & Industrial Development Site Access

09/23/2024

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	356	0	0	777
Future Volume (Veh/h)	0	0	356	0	0	777
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	0	379	0	0	827
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (m)			282			
pX, platoon unblocked	0.91	0.91			0.91	
vC, conflicting volume	1206	379			379	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1176	265			265	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	192	702			1179	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	0	379	827			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1700	1179			
Volume to Capacity	0.00	0.22	0.00			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay		0.0				
Intersection Capacity Utilization		42.2%		ICU Level of Service		A
Analysis Period (min)		15				

Lanes, Volumes, Timings
102: Extension of HWP & Site Access

09/23/2024

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	45	16	0
Future Volume (vph)	0	0	0	45	16	0
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frnt						
Flt Protected						
Satd. Flow (prot)	1983	0	0	1983	1983	0
Flt Permitted						
Satd. Flow (perm)	1983	0	0	1983	1983	0
Link Speed (k/h)	30			50	50	
Link Distance (m)	73.6			84.4	135.0	
Travel Time (s)	8.8			6.1	9.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	49	17	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	49	17	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	0.92	0.92	0.92	0.92	0.92	0.92
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 6.7%	ICU Level of Service A					
Analysis Period (min) 15						

HCM Unsignalized Intersection Capacity Analysis

102: Extension of HWP & Site Access

09/23/2024

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	45	16	0
Future Volume (Veh/h)	0	0	0	45	16	0
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)	0	0	0	49	17	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (m)				84		
pX, platoon unblocked						
vC, conflicting volume	66	17	17			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	66	17	17			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	939	1062	1600			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	0	49	17			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1600	1700			
Volume to Capacity	0.00	0.00	0.01			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			6.7%	ICU Level of Service		A
Analysis Period (min)			15			

Lanes, Volumes, Timings
1: Leslie Street & Green Lane East

09/23/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	77	1173	490	103	816	102	212	284	79	301	477	69
Future Volume (vph)	77	1173	490	103	816	102	212	284	79	301	477	69
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width (m)	3.5	3.6	3.3	3.7	3.7	3.5	4.8	3.6	3.8	3.6	3.8	3.3
Storage Length (m)	125.0		70.0	185.0		85.0	55.0		35.0	85.0		35.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	1.00		0.98	1.00		0.98	1.00		0.98	0.99		0.99
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1824	3619	1508	1830	3525	1303	2031	3725	1738	1881	3808	1643
Flt Permitted	0.268			0.127			0.225			0.531		
Satd. Flow (perm)	514	3619	1485	245	3525	1284	481	3725	1704	1046	3808	1622
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			330			145			114			141
Link Speed (k/h)		70			70			60			60	
Link Distance (m)		324.4			502.9			426.7			282.0	
Travel Time (s)		16.7			25.9			25.6			16.9	
Confl. Peds. (#/hr)	2		2	2		2	1		6	6		1
Confl. Bikes (#/hr)			1			1						
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	3%	5%	9%	5%	9%	29%	6%	2%	0%	1%	2%	0%
Adj. Flow (vph)	79	1197	500	105	833	104	216	290	81	307	487	70
Shared Lane Traffic (%)												
Lane Group Flow (vph)	79	1197	500	105	833	104	216	290	81	307	487	70
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			4.8			4.8	
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	0.95	0.94	0.98	0.92	0.92	0.95	0.79	0.94	0.91	0.94	0.91	0.98
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lanes, Volumes, Timings

1: Leslie Street & Green Lane East

09/23/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6		6	2		2	8		8	4		4
Detector Phase	1	6	6	5	2	2	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	7.0	30.0	30.0	7.0	30.0	30.0	7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	11.0	44.5	44.5	11.0	44.5	44.5	11.0	45.0	45.0	11.0	45.0	45.0
Total Split (s)	24.0	77.5	77.5	19.0	72.5	72.5	24.0	43.0	43.0	19.0	38.0	38.0
Total Split (%)	15.1%	48.9%	48.9%	12.0%	45.7%	45.7%	15.1%	27.1%	27.1%	12.0%	24.0%	24.0%
Maximum Green (s)	20.0	70.0	70.0	15.0	65.0	65.0	20.0	35.0	35.0	15.0	30.0	30.0
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	4.5	4.5	3.0	4.5	4.5
All-Red Time (s)	1.0	2.5	2.5	1.0	2.5	2.5	1.0	3.5	3.5	1.0	3.5	3.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	7.5	7.5	4.0	7.5	7.5	4.0	8.0	8.0	4.0	8.0	8.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		30.0	30.0		30.0	30.0		30.0	30.0		30.0	30.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	82.2	70.3	70.3	84.5	71.5	71.5	44.9	24.9	24.9	42.8	23.7	23.7
Actuated g/C Ratio	0.57	0.49	0.49	0.59	0.50	0.50	0.31	0.17	0.17	0.30	0.17	0.17
v/c Ratio	0.21	0.67	0.56	0.42	0.47	0.15	0.66	0.45	0.21	0.77	0.77	0.18
Control Delay	14.4	31.6	11.4	18.2	25.8	1.4	45.6	54.9	3.8	54.3	66.7	1.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.4	31.6	11.4	18.2	25.8	1.4	45.6	54.9	3.8	54.3	66.7	1.0
LOS	B	C	B	B	C	A	D	D	A	D	E	A
Approach Delay		25.1			22.6			44.4			57.0	
Approach LOS		C			C			D			E	

Intersection Summary

Area Type: Other

Cycle Length: 158.5

Actuated Cycle Length: 143.4

Natural Cycle: 115

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.77

Intersection Signal Delay: 33.6

Intersection LOS: C

Intersection Capacity Utilization 84.5%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 1: Leslie Street & Green Lane East



FB_AM_2034 2:07 pm 08/21/2024 Baseline

Synchro 11 Report

Page 2

Queues

1: Leslie Street & Green Lane East

09/23/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	79	1197	500	105	833	104	216	290	81	307	487	70
v/c Ratio	0.21	0.67	0.56	0.42	0.47	0.15	0.66	0.45	0.21	0.77	0.77	0.18
Control Delay	14.4	31.6	11.4	18.2	25.8	1.4	45.6	54.9	3.8	54.3	66.7	1.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.4	31.6	11.4	18.2	25.8	1.4	45.6	54.9	3.8	54.3	66.7	1.0
Queue Length 50th (m)	8.9	135.2	30.5	12.0	80.8	0.0	45.4	39.1	0.0	68.9	70.4	0.0
Queue Length 95th (m)	18.3	186.2	73.1	23.3	113.6	3.7	68.3	54.5	5.7	99.4	94.2	0.0
Internal Link Dist (m)	300.4			478.9			402.7			258.0		
Turn Bay Length (m)	125.0		70.0	185.0		85.0	55.0		35.0	85.0		35.0
Base Capacity (vph)	496	1774	896	315	1756	712	378	913	503	400	800	452
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.67	0.56	0.33	0.47	0.15	0.57	0.32	0.16	0.77	0.61	0.15
Intersection Summary												

HCM Signalized Intersection Capacity Analysis

1: Leslie Street & Green Lane East

09/23/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	77	1173	490	103	816	102	212	284	79	301	477	69
Future Volume (vph)	77	1173	490	103	816	102	212	284	79	301	477	69
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width	3.5	3.6	3.3	3.7	3.7	3.5	4.8	3.6	3.8	3.6	3.8	3.3
Total Lost time (s)	4.0	7.5	7.5	4.0	7.5	7.5	4.0	8.0	8.0	4.0	8.0	8.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1824	3619	1485	1830	3525	1284	2031	3725	1705	1877	3808	1622
Flt Permitted	0.27	1.00	1.00	0.13	1.00	1.00	0.23	1.00	1.00	0.53	1.00	1.00
Satd. Flow (perm)	515	3619	1485	245	3525	1284	482	3725	1705	1049	3808	1622
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	79	1197	500	105	833	104	216	290	81	307	487	70
RTOR Reduction (vph)	0	0	168	0	0	52	0	0	67	0	0	58
Lane Group Flow (vph)	79	1197	332	105	833	52	216	290	14	307	487	12
Confl. Peds. (#/hr)	2		2	2		2	1		6	6		1
Confl. Bikes (#/hr)			1			1						
Heavy Vehicles (%)	3%	5%	9%	5%	9%	29%	6%	2%	0%	1%	2%	0%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6		6	2		2	8		8	4		4
Actuated Green, G (s)	78.8	70.4	70.4	81.0	71.5	71.5	41.2	24.9	24.9	38.8	23.7	23.7
Effective Green, g (s)	78.8	70.4	70.4	81.0	71.5	71.5	41.2	24.9	24.9	38.8	23.7	23.7
Actuated g/C Ratio	0.55	0.49	0.49	0.56	0.50	0.50	0.29	0.17	0.17	0.27	0.17	0.17
Clearance Time (s)	4.0	7.5	7.5	4.0	7.5	7.5	4.0	8.0	8.0	4.0	8.0	8.0
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	359	1776	729	243	1757	640	314	646	296	371	629	268
v/s Ratio Prot	0.01	c0.33		c0.03	0.24		0.08	0.08		c0.09	0.13	
v/s Ratio Perm	0.11		0.22	0.22		0.04	0.12		0.01	c0.14		0.01
v/c Ratio	0.22	0.67	0.46	0.43	0.47	0.08	0.69	0.45	0.05	0.83	0.77	0.04
Uniform Delay, d1	16.1	27.8	23.9	19.3	23.6	18.8	41.5	53.1	49.4	46.5	57.3	50.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	2.1	2.0	1.2	0.9	0.2	6.1	0.5	0.1	14.0	5.9	0.1
Delay (s)	16.4	29.8	26.0	20.6	24.5	19.0	47.7	53.6	49.4	60.6	63.2	50.4
Level of Service	B	C	C	C	C	B	D	D	D	E	E	D
Approach Delay (s)		28.2			23.6			50.8			61.2	
Approach LOS		C			C			D			E	
Intersection Summary												
HCM 2000 Control Delay			36.8				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.70									
Actuated Cycle Length (s)			143.4				Sum of lost time (s)			23.5		
Intersection Capacity Utilization			84.5%				ICU Level of Service			E		
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings

2: Harry Walker Parkway/Extension of HWP & Green Lane East

09/23/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	1411	197	192	968	53	34	13	42	28	0	0
Future Volume (vph)	7	1411	197	192	968	53	34	13	42	28	0	0
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width (m)	3.7	3.8	3.8	3.3	3.7	3.7	3.0	3.7	3.0	3.7	3.7	3.7
Storage Length (m)	65.0		65.0	50.0		30.0	0.0		0.0	60.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	7.6			7.6			7.6			2.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t			0.850			0.850		0.886				
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1921	3735	1671	1766	3461	1719	1430	1642	0	1921	2022	0
Flt Permitted	0.284			0.118			0.950			0.000		
Satd. Flow (perm)	574	3735	1671	219	3461	1719	1430	1642	0	0	2022	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			118			62			44			
Link Speed (k/h)		70			70			50			50	
Link Distance (m)		502.9			92.9			200.4			84.4	
Travel Time (s)		25.9			4.8			14.4			6.1	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	4%	4%	4%	11%	0%	24%	0%	12%	0%	0%	0%
Adj. Flow (vph)	7	1470	205	200	1008	55	35	14	44	29	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	7	1470	205	200	1008	55	35	58	0	29	0	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)		4.9			4.9			4.9			1.6	
Two way Left Turn Lane												
Headway Factor	0.92	0.91	0.91	0.98	0.92	0.92	1.02	0.92	1.02	0.92	0.92	0.92
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		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	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt		

Lanes, Volumes, Timings

2: Harry Walker Parkway/Extension of HWP & Green Lane East

09/23/2024

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		6		5	2		3	8		7	4	
Permitted Phases	6		6	2		2	8			4		
Detector Phase	6	6	6	5	2	2	3	8		7	4	
Switch Phase												
Minimum Initial (s)	30.0	30.0	30.0	7.0	30.0	30.0	5.0	10.0		7.0	5.0	
Minimum Split (s)	37.5	37.5	37.5	11.0	37.5	37.5	9.5	32.0		11.0	25.0	
Total Split (s)	80.0	80.0	80.0	26.0	106.0	106.0	10.6	32.0		12.0	33.4	
Total Split (%)	53.3%	53.3%	53.3%	17.3%	70.7%	70.7%	7.1%	21.3%		8.0%	22.3%	
Maximum Green (s)	72.5	72.5	72.5	22.0	98.5	98.5	6.1	25.0		8.0	26.4	
Yellow Time (s)	5.0	5.0	5.0	3.0	5.0	5.0	3.5	4.0		3.0	4.0	
All-Red Time (s)	2.5	2.5	2.5	1.0	2.5	2.5	1.0	3.0		1.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.5	7.5	7.5	4.0	7.5	7.5	4.5	7.0		4.0	7.0	
Lead/Lag	Lag	Lag	Lag	Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	0.2	0.2	0.2	3.0	0.2	0.2	3.0	0.2		3.0	3.0	
Recall Mode	C-Max	C-Max	C-Max	None	C-Max	C-Max	None	None		None	None	
Walk Time (s)	7.0	7.0	7.0		0.0	0.0		7.0			7.0	
Flash Dont Walk (s)	19.0	19.0	19.0		0.0	0.0		18.0			11.0	
Pedestrian Calls (#/hr)	0	0	0		0	0		0			0	
Act Effct Green (s)	101.8	101.8	101.8	125.3	123.3	123.3	18.2	10.0		7.5		
Actuated g/C Ratio	0.68	0.68	0.68	0.84	0.82	0.82	0.12	0.07		0.05		
v/c Ratio	0.02	0.58	0.18	0.58	0.35	0.04	0.20	0.39		0.30		
Control Delay	13.4	16.9	5.9	14.9	5.1	0.9	58.4	32.9		76.9		
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0		
Total Delay	13.4	16.9	5.9	14.9	5.1	0.9	58.4	32.9		76.9		
LOS	B	B	A	B	A	A	E	C		E		
Approach Delay		15.5			6.5			42.5			76.9	
Approach LOS		B			A			D			E	

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

Natural Cycle: 95

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.58

Intersection Signal Delay: 13.2

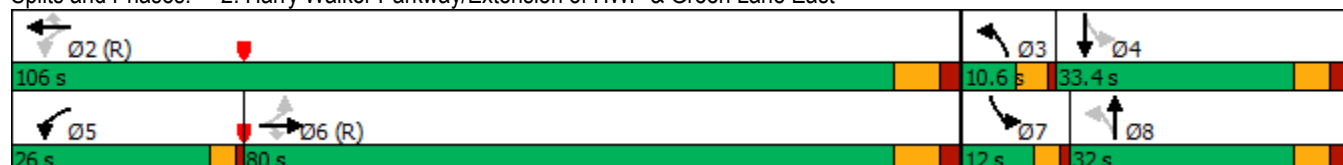
Intersection LOS: B

Intersection Capacity Utilization 77.2%

ICU Level of Service D

Analysis Period (min) 15

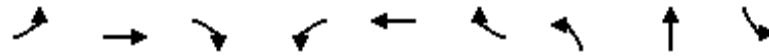
Splits and Phases: 2: Harry Walker Parkway/Extension of HWP & Green Lane East



Queues

2: Harry Walker Parkway/Extension of HWP & Green Lane East

09/23/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL
Lane Group Flow (vph)	7	1470	205	200	1008	55	35	58	29
v/c Ratio	0.02	0.58	0.18	0.58	0.35	0.04	0.20	0.39	0.30
Control Delay	13.4	16.9	5.9	14.9	5.1	0.9	58.4	32.9	76.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.4	16.9	5.9	14.9	5.1	0.9	58.4	32.9	76.9
Queue Length 50th (m)	0.8	136.6	9.8	12.7	47.7	0.0	9.1	4.0	8.5
Queue Length 95th (m)	3.2	182.9	23.7	34.2	57.4	2.8	20.0	18.6	19.3
Internal Link Dist (m)		478.9			68.9			176.4	
Turn Bay Length (m)	65.0		65.0	50.0		30.0			60.0
Base Capacity (vph)	389	2534	1171	414	2843	1423	175	310	102
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.58	0.18	0.48	0.35	0.04	0.20	0.19	0.28
Intersection Summary									

HCM Signalized Intersection Capacity Analysis

2: Harry Walker Parkway/Extension of HWP & Green Lane East

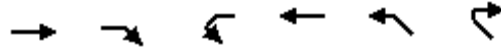
09/23/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 							
Traffic Volume (vph)	7	1411	197	192	968	53	34	13	42	28	0	0
Future Volume (vph)	7	1411	197	192	968	53	34	13	42	28	0	0
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width	3.7	3.8	3.8	3.3	3.7	3.7	3.0	3.7	3.0	3.7	3.7	3.7
Total Lost time (s)	7.5	7.5	7.5	4.0	7.5	7.5	4.5	7.0		4.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00		
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.89		1.00		
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95		
Satd. Flow (prot)	1921	3735	1671	1766	3461	1719	1430	1643		1921		
Flt Permitted	0.28	1.00	1.00	0.12	1.00	1.00	0.95	1.00		0.00		
Satd. Flow (perm)	575	3735	1671	219	3461	1719	1430	1643		0		
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	7	1470	205	200	1008	55	35	14	44	29	0	0
RTOR Reduction (vph)	0	0	40	0	0	11	0	42	0	0	0	0
Lane Group Flow (vph)	7	1470	165	200	1008	44	35	16	0	29	0	0
Heavy Vehicles (%)	0%	4%	4%	4%	11%	0%	24%	0%	12%	0%	0%	0%
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt		
Protected Phases		6		5	2		3	8		7	4	
Permitted Phases	6		6	2		2	8			4		
Actuated Green, G (s)	98.8	98.8	98.8	118.8	118.8	118.8	19.2	8.0		4.7		
Effective Green, g (s)	98.8	98.8	98.8	118.8	118.8	118.8	19.2	8.0		4.7		
Actuated g/C Ratio	0.66	0.66	0.66	0.79	0.79	0.79	0.13	0.05		0.03		
Clearance Time (s)	7.5	7.5	7.5	4.0	7.5	7.5	4.5	7.0		4.0		
Vehicle Extension (s)	0.2	0.2	0.2	3.0	0.2	0.2	3.0	0.2		3.0		
Lane Grp Cap (vph)	378	2460	1100	338	2741	1361	183	87		60		
v/s Ratio Prot		0.39		c0.06	0.29		c0.02	0.01		c0.02		
v/s Ratio Perm	0.01		0.10	c0.41		0.03						
v/c Ratio	0.02	0.60	0.15	0.59	0.37	0.03	0.19	0.19		0.48		
Uniform Delay, d1	8.8	14.4	9.7	14.0	4.6	3.3	58.5	67.9		71.5		
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00		
Incremental Delay, d2	0.1	1.1	0.3	2.8	0.4	0.0	0.5	0.4		6.0		
Delay (s)	8.9	15.5	10.0	16.7	5.0	3.4	59.0	68.3		77.5		
Level of Service	A	B	A	B	A	A	E	E		E		
Approach Delay (s)		14.8			6.8			64.8			77.5	
Approach LOS		B			A			E			E	
Intersection Summary												
HCM 2000 Control Delay			13.6				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.58									
Actuated Cycle Length (s)			150.0				Sum of lost time (s)			23.0		
Intersection Capacity Utilization			77.2%				ICU Level of Service			D		
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings

3: Highway 404 West-South On-ramp & Green Lane East

09/23/2024

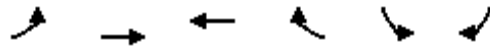


Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑↑	↑		↑↑		
Traffic Volume (vph)	7	12	0	53	0	0
Future Volume (vph)	7	12	0	53	0	0
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Width (m)	3.8	4.2	3.8	3.8	3.7	3.7
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	0.850					
Flt Protected						
Satd. Flow (prot)	3808	1778	0	3808	0	0
Flt Permitted						
Satd. Flow (perm)	3808	1778	0	3808	0	0
Link Speed (k/h)	70			70	60	
Link Distance (m)	92.9			303.3	172.8	
Travel Time (s)	4.8			15.6	10.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	8	13	0	58	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	8	13	0	58	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.3			3.3	0.0	
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	0.91	0.86	0.91	0.91	0.92	0.92
Turning Speed (k/h)	14		24	24		14
Sign Control	Free			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Pretimed					
Intersection Capacity Utilization	6.7%			ICU Level of Service A		
Analysis Period (min)	15					

Lanes, Volumes, Timings

4: Green Lane East & Highway 404 North-East/West Off-Ramp

09/23/2024

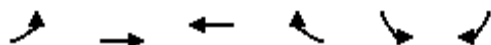


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↘↘	↗
Traffic Volume (vph)	0	432	755	0	26	501
Future Volume (vph)	0	432	755	0	26	501
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Width (m)	3.8	3.8	3.8	3.8	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	0.95
Frt					0.865	0.850
Flt Protected					0.995	
Satd. Flow (prot)	0	3597	3349	0	1750	1638
Flt Permitted					0.995	
Satd. Flow (perm)	0	3597	3349	0	1750	1638
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)					128	128
Link Speed (k/h)		70	70		60	
Link Distance (m)		303.3	111.8		268.4	
Travel Time (s)		15.6	5.7		16.1	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	8%	16%	0%	0%	3%
Adj. Flow (vph)	0	465	812	0	28	539
Shared Lane Traffic (%)						48%
Lane Group Flow (vph)	0	465	812	0	287	280
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		4.0	
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	0.91	0.91	0.91	0.91	0.88	0.88
Turning Speed (k/h)	24			14	24	14
Number of Detectors		2	2		1	1
Detector Template		Thru	Thru		Left	Right
Leading Detector (m)		30.5	30.5		6.1	6.1
Trailing Detector (m)		0.0	0.0		0.0	0.0
Detector 1 Position(m)		0.0	0.0		0.0	0.0
Detector 1 Size(m)		1.8	1.8		6.1	6.1
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0
Detector 2 Position(m)		28.7	28.7			
Detector 2 Size(m)		1.8	1.8			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type		NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases						4
Detector Phase		2	6		4	4

Lanes, Volumes, Timings

4: Green Lane East & Highway 404 North-East/West Off-Ramp

09/23/2024



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Switch Phase						
Minimum Initial (s)		30.0	30.0		15.0	15.0
Minimum Split (s)		37.7	37.7		22.2	22.2
Total Split (s)		52.7	52.7		37.2	37.2
Total Split (%)		58.6%	58.6%		41.4%	41.4%
Maximum Green (s)		45.0	45.0		30.0	30.0
Yellow Time (s)		5.9	5.9		5.1	5.1
All-Red Time (s)		1.8	1.8		2.1	2.1
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		7.7	7.7		7.2	7.2
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		4.0	4.0		3.0	3.0
Recall Mode		Max	Max		Max	Max
Act Effct Green (s)		45.0	45.0		30.0	30.0
Actuated g/C Ratio		0.50	0.50		0.33	0.33
v/c Ratio		0.26	0.48		0.43	0.44
Control Delay		13.4	16.0		14.8	14.9
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		13.4	16.0		14.8	14.9
LOS		B	B		B	B
Approach Delay		13.4	16.0		14.8	
Approach LOS		B	B		B	
Intersection Summary						
Area Type:	Other					
Cycle Length: 89.9						
Actuated Cycle Length: 89.9						
Natural Cycle: 60						
Control Type: Semi Act-Uncoord						
Maximum v/c Ratio: 0.48						
Intersection Signal Delay: 15.0				Intersection LOS: B		
Intersection Capacity Utilization 57.1%				ICU Level of Service B		
Analysis Period (min) 15						

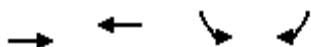
Splits and Phases: 4: Green Lane East & Highway 404 North-East/West Off-Ramp

→ Ø2	← Ø4
52.7 s	37.2 s
← Ø6	
52.7 s	

Queues

4: Green Lane East & Highway 404 North-East/West Off-Ramp

09/23/2024

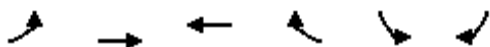


Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	465	812	287	280
v/c Ratio	0.26	0.48	0.43	0.44
Control Delay	13.4	16.0	14.8	14.9
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	13.4	16.0	14.8	14.9
Queue Length 50th (m)	23.0	46.3	19.9	20.1
Queue Length 95th (m)	32.4	61.4	41.1	42.5
Internal Link Dist (m)	279.3	87.8	244.4	
Turn Bay Length (m)				
Base Capacity (vph)	1800	1676	669	631
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.26	0.48	0.43	0.44
Intersection Summary				

HCM Signalized Intersection Capacity Analysis

4: Green Lane East & Highway 404 North-East/West Off-Ramp

09/23/2024



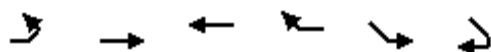
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↑↑	↑↑
Traffic Volume (vph)	0	432	755	0	26	501
Future Volume (vph)	0	432	755	0	26	501
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Width	3.8	3.8	3.8	3.8	4.0	4.0
Total Lost time (s)		7.7	7.7		7.2	7.2
Lane Util. Factor		0.95	0.95		1.00	0.95
Frt		1.00	1.00		0.86	0.85
Flt Protected		1.00	1.00		1.00	1.00
Satd. Flow (prot)		3597	3349		1750	1638
Flt Permitted		1.00	1.00		1.00	1.00
Satd. Flow (perm)		3597	3349		1750	1638
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	465	812	0	28	539
RTOR Reduction (vph)	0	0	0	0	85	85
Lane Group Flow (vph)	0	465	812	0	202	195
Heavy Vehicles (%)	0%	8%	16%	0%	0%	3%
Turn Type		NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases						4
Actuated Green, G (s)		45.0	45.0		30.0	30.0
Effective Green, g (s)		45.0	45.0		30.0	30.0
Actuated g/C Ratio		0.50	0.50		0.33	0.33
Clearance Time (s)		7.7	7.7		7.2	7.2
Vehicle Extension (s)		4.0	4.0		3.0	3.0
Lane Grp Cap (vph)		1800	1676		583	546
v/s Ratio Prot		0.13	c0.24		0.12	
v/s Ratio Perm						c0.12
v/c Ratio		0.26	0.48		0.35	0.36
Uniform Delay, d1		12.9	14.8		22.6	22.7
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.3	1.0		1.6	1.8
Delay (s)		13.2	15.8		24.2	24.5
Level of Service		B	B		C	C
Approach Delay (s)		13.2	15.8		24.3	
Approach LOS		B	B		C	
Intersection Summary						
HCM 2000 Control Delay			17.8		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.43			
Actuated Cycle Length (s)			89.9		Sum of lost time (s)	14.9
Intersection Capacity Utilization			57.1%		ICU Level of Service	B
Analysis Period (min)			15			

c Critical Lane Group

Lanes, Volumes, Timings

5: Green Lane East & Highway 404 East-South On-Ramp

09/23/2024



Lane Group	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations		↑↑	↑↑	↗		
Traffic Volume (vph)	0	7	46	0	0	0
Future Volume (vph)	0	7	46	0	0	0
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Width (m)	3.8	3.8	3.8	3.8	3.7	3.7
Storage Length (m)	0.0			70.0	0.0	0.0
Storage Lanes	0			0	0	0
Taper Length (m)	7.6				7.6	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	0	3808	3808	2004	0	0
Flt Permitted						
Satd. Flow (perm)	0	3808	3808	2004	0	0
Link Speed (k/h)		70	70		30	
Link Distance (m)		111.8	136.3		95.7	
Travel Time (s)		5.7	7.0		11.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	8	50	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	8	50	0	0	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		0.0	
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	0.91	0.91	0.91	0.91	0.92	0.92
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Pretimed					
Intersection Capacity Utilization 57.1%				ICU Level of Service B		
Analysis Period (min) 15						

Lanes, Volumes, Timings

6: Highway 404 West-North On-Ramp & Green Lane East

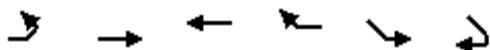
09/23/2024

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑↑	↑		↑↑		
Traffic Volume (vph)	0	7	0	51	0	0
Future Volume (vph)	0	7	0	51	0	0
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Width (m)	3.8	4.0	3.7	3.7	3.7	3.7
Storage Length (m)		15.0	0.0		0.0	0.0
Storage Lanes		1	0		0	0
Taper Length (m)			7.6		7.6	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt		0.850				
Flt Protected						
Satd. Flow (prot)	3808	1741	0	3767	0	0
Flt Permitted						
Satd. Flow (perm)	3808	1741	0	3767	0	0
Link Speed (k/h)	70			70	30	
Link Distance (m)	136.3			93.2	107.1	
Travel Time (s)	7.0			4.8	12.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	8	0	55	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	8	0	55	0	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	0.0	
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	0.91	0.88	0.92	0.92	0.92	0.92
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Pretimed					
Intersection Capacity Utilization 6.7%	ICU Level of Service A					
Analysis Period (min) 15						

Lanes, Volumes, Timings

7: Green Lane East & Highway 404 East-North On-Ramp

09/23/2024



Lane Group	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations		↑↑	↑↑	↑		
Traffic Volume (vph)	0	0	46	4	0	0
Future Volume (vph)	0	0	46	4	0	0
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt	0.850					
Flt Protected						
Satd. Flow (prot)	0	3767	3767	1719	0	0
Flt Permitted						
Satd. Flow (perm)	0	3767	3767	1719	0	0
Link Speed (k/h)	70		48	40		
Link Distance (m)	93.2		36.9	98.9		
Travel Time (s)	4.8		2.8	8.9		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	0%	2%	2%
Adj. Flow (vph)	0	0	50	4	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	50	4	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)	3.8		3.8	0.0		
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	0.92	0.92	0.92	0.92	0.92	0.92
Turning Speed (k/h)	24			14	24	14
Sign Control	Free		Free	Free		
Intersection Summary						
Area Type:	Other					
Control Type:	Pretimed					
Intersection Capacity Utilization	6.7%			ICU Level of Service A		
Analysis Period (min)	15					

Lanes, Volumes, Timings

8: Highway 404 South-East/West Off-Ramp/Carpool Parking Lot Access & Green Lane East

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	312	0	0	296	0	493	4	44	0	0	7
Future Volume (vph)	8	312	0	0	296	0	493	4	44	0	0	7
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width (m)	3.8	3.8	3.8	3.8	3.8	3.8	3.8	4.0	4.0	4.0	4.0	4.0
Storage Length (m)	20.0		0.0	0.0		20.0	0.0		60.0	0.0		0.0
Storage Lanes	1		0	0		0	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91	0.91	0.95	0.95	1.00	1.00	1.00	1.00
Fr't									0.850			0.850
Flt Protected	0.950						0.950	0.953				
Satd. Flow (prot)	1719	3665	0	0	4770	0	1619	1662	1420	2089	0	1544
Flt Permitted	0.494						0.950	0.953				
Satd. Flow (perm)	894	3665	0	0	4770	0	1619	1662	1420	2089	0	1544
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)									111			306
Link Speed (k/h)		70			70			60			40	
Link Distance (m)		36.9			312.7			301.6			147.9	
Travel Time (s)		1.9			16.1			18.1			13.3	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	13%	6%	0%	0%	17%	0%	14%	0%	25%	0%	0%	15%
Adj. Flow (vph)	9	335	0	0	318	0	530	4	47	0	0	8
Shared Lane Traffic (%)							50%					
Lane Group Flow (vph)	9	335	0	0	318	0	265	269	47	0	0	8
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)		3.8			3.8			4.0			4.0	
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	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.88	0.88	0.88	0.88	0.88
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2			2		1	2	1	1		1
Detector Template	Left	Thru			Thru		Left	Thru	Right	Left		Right
Leading Detector (m)	6.1	30.5			30.5		6.1	30.5	6.1	6.1		6.1
Trailing Detector (m)	0.0	0.0			0.0		0.0	0.0	0.0	0.0		0.0
Detector 1 Position(m)	0.0	0.0			0.0		0.0	0.0	0.0	0.0		0.0
Detector 1 Size(m)	6.1	1.8			1.8		6.1	1.8	6.1	6.1		6.1
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0	0.0	0.0		0.0
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0	0.0	0.0		0.0
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0	0.0	0.0		0.0
Detector 2 Position(m)		28.7			28.7			28.7				
Detector 2 Size(m)		1.8			1.8			1.8				
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	pm+pt	NA			NA		Split	NA	Perm	Prot		Prot

Lanes, Volumes, Timings

8: Highway 404 South-East/West Off-Ramp/Carpool Parking Lot Access & Green Lane East

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	5	2			6		8	8		7		7
Permitted Phases	2								8			
Detector Phase	5	2			6		8	8	8	7		7
Switch Phase												
Minimum Initial (s)	7.0	20.0			20.0		10.0	10.0	10.0	10.0		10.0
Minimum Split (s)	11.0	41.0			41.0		40.5	40.5	40.5	17.5		17.5
Total Split (s)	19.0	74.0			55.0		57.5	57.5	57.5	30.5		30.5
Total Split (%)	11.7%	45.7%			34.0%		35.5%	35.5%	35.5%	18.8%		18.8%
Maximum Green (s)	15.0	66.0			47.0		50.0	50.0	50.0	23.0		23.0
Yellow Time (s)	3.0	5.0			5.0		4.5	4.5	4.5	4.5		4.5
All-Red Time (s)	1.0	3.0			3.0		3.0	3.0	3.0	3.0		3.0
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	4.0	8.0			8.0		7.5	7.5	7.5	7.5		7.5
Lead/Lag	Lead				Lag		Lag	Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	Yes				Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	4.0			4.0		3.0	3.0	3.0	3.0		3.0
Recall Mode	None	Ped			Ped		None	None	None	None		None
Walk Time (s)		7.0			7.0		7.0	7.0	7.0			
Flash Dont Walk (s)		26.0			26.0		26.0	26.0	26.0			
Pedestrian Calls (#/hr)		0			0		0	0	0			
Act Effct Green (s)	40.2	36.0			34.5		17.6	17.6	17.6			10.5
Actuated g/C Ratio	0.56	0.50			0.48		0.24	0.24	0.24			0.15
v/c Ratio	0.02	0.18			0.14		0.67	0.66	0.11			0.02
Control Delay	11.8	12.4			14.2		34.9	34.3	0.5			0.0
Queue Delay	0.0	0.0			0.0		0.0	0.0	0.0			0.0
Total Delay	11.8	12.4			14.2		34.9	34.3	0.5			0.0
LOS	B	B			B		C	C	A			A
Approach Delay		12.4			14.2			31.9				
Approach LOS		B			B			C				

Intersection Summary

Area Type: Other

Cycle Length: 162

Actuated Cycle Length: 72.2

Natural Cycle: 110

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.67

Intersection Signal Delay: 21.8

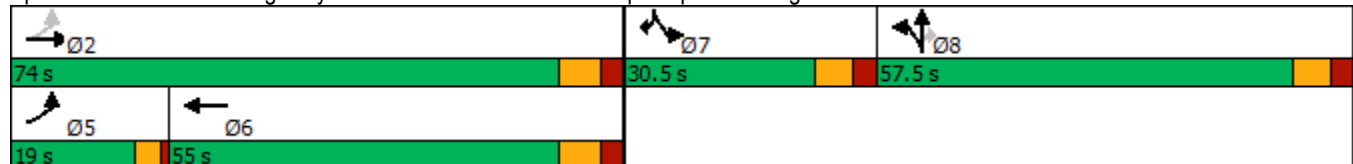
Intersection LOS: C

Intersection Capacity Utilization 57.2%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 8: Highway 404 South-East/West Off-Ramp/Carpool Parking Lot Access & Green Lane East



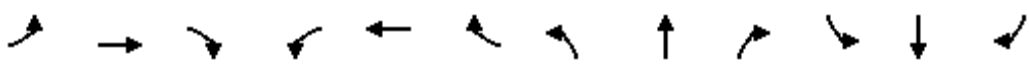
Queues

8: Highway 404 South-East/West Off-Ramp/Carpool Parking Lot Access & Green Lane East

							
Lane Group	EBL	EBT	WBT	NBL	NBT	NBR	SBR
Lane Group Flow (vph)	9	335	318	265	269	47	8
v/c Ratio	0.02	0.18	0.14	0.67	0.66	0.11	0.02
Control Delay	11.8	12.4	14.2	34.9	34.3	0.5	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.8	12.4	14.2	34.9	34.3	0.5	0.0
Queue Length 50th (m)	0.4	10.6	6.8	30.0	30.3	0.0	0.0
Queue Length 95th (m)	3.9	33.4	25.5	77.8	78.5	0.0	0.0
Internal Link Dist (m)		12.9	288.7		277.6		
Turn Bay Length (m)	20.0					60.0	
Base Capacity (vph)	677	3374	3250	1173	1204	1059	718
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	0.01	0.10	0.10	0.23	0.22	0.04	0.01
Intersection Summary							

HCM Signalized Intersection Capacity Analysis

8: Highway 404 South-East/West Off-Ramp/Carpool Parking Lot Access & Green Lane East

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱↱			↱↱↱		↰	↱	↱	↰		↱
Traffic Volume (vph)	8	312	0	0	296	0	493	4	44	0	0	7
Future Volume (vph)	8	312	0	0	296	0	493	4	44	0	0	7
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width	3.8	3.8	3.8	3.8	3.8	3.8	3.8	4.0	4.0	4.0	4.0	4.0
Total Lost time (s)	4.0	8.0			8.0		7.5	7.5	7.5			7.5
Lane Util. Factor	1.00	0.95			0.91		0.95	0.95	1.00			1.00
Frt	1.00	1.00			1.00		1.00	1.00	0.85			0.85
Flt Protected	0.95	1.00			1.00		0.95	0.95	1.00			1.00
Satd. Flow (prot)	1719	3665			4770		1619	1662	1420			1544
Flt Permitted	0.49	1.00			1.00		0.95	0.95	1.00			1.00
Satd. Flow (perm)	894	3665			4770		1619	1662	1420			1544
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	9	335	0	0	318	0	530	4	47	0	0	8
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	37	0	0	8
Lane Group Flow (vph)	9	335	0	0	318	0	265	269	10	0	0	0
Heavy Vehicles (%)	13%	6%	0%	0%	17%	0%	14%	0%	25%	0%	0%	15%
Turn Type	pm+pt	NA			NA		Split	NA	Perm	Prot		Prot
Protected Phases	5	2			6		8	8		7		7
Permitted Phases	2								8			
Actuated Green, G (s)	39.5	39.5			34.6		17.6	17.6	17.6			1.3
Effective Green, g (s)	39.5	39.5			34.6		17.6	17.6	17.6			1.3
Actuated g/C Ratio	0.49	0.49			0.43		0.22	0.22	0.22			0.02
Clearance Time (s)	4.0	8.0			8.0		7.5	7.5	7.5			7.5
Vehicle Extension (s)	3.0	4.0			4.0		3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	442	1778			2027		350	359	307			24
v/s Ratio Prot	0.00	c0.09			0.07		c0.16	0.16				c0.00
v/s Ratio Perm	0.01								0.01			
v/c Ratio	0.02	0.19			0.16		0.76	0.75	0.03			0.01
Uniform Delay, d1	10.9	11.9			14.4		29.9	29.8	25.2			39.4
Progression Factor	1.00	1.00			1.00		1.00	1.00	1.00			1.00
Incremental Delay, d2	0.0	0.1			0.0		9.0	8.3	0.0			0.1
Delay (s)	11.0	11.9			14.5		38.9	38.2	25.2			39.5
Level of Service	B	B			B		D	D	C			D
Approach Delay (s)		11.9			14.5			37.5			39.5	
Approach LOS		B			B			D			D	
Intersection Summary												
HCM 2000 Control Delay			24.6				HCM 2000 Level of Service		C			
HCM 2000 Volume to Capacity ratio			0.38									
Actuated Cycle Length (s)			81.4				Sum of lost time (s)		27.0			
Intersection Capacity Utilization			57.2%				ICU Level of Service		B			
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings

101: Leslie Street & Industrial Development Site Access

09/23/2024

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			 			 
Traffic Volume (vph)	0	0	356	0	0	777
Future Volume (vph)	0	0	356	0	0	777
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Storage Length (m)	0.0	0.0		60.0	30.0	
Storage Lanes	1	1		1	1	
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frt						
Flt Protected						
Satd. Flow (prot)	1983	1983	3767	1983	1983	3767
Flt Permitted						
Satd. Flow (perm)	1983	1983	3767	1983	1983	3767
Link Speed (k/h)	30		60			60
Link Distance (m)	318.5		282.0			250.3
Travel Time (s)	38.2		16.9			15.0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	0	379	0	0	827
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	379	0	0	827
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		3.7			3.7
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	1.6		1.6			1.6
Two way Left Turn Lane						
Headway Factor	0.92	0.92	0.92	0.92	0.92	0.92
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	23.7%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis

101: Leslie Street & Industrial Development Site Access

09/23/2024

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations			 			 		
Traffic Volume (veh/h)	0	0	356	0	0	777		
Future Volume (Veh/h)	0	0	356	0	0	777		
Sign Control	Stop		Free			Free		
Grade	0%		0%			0%		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94		
Hourly flow rate (vph)	0	0	379	0	0	827		
Pedestrians								
Lane Width (m)								
Walking Speed (m/s)								
Percent Blockage								
Right turn flare (veh)								
Median type			None			None		
Median storage veh								
Upstream signal (m)			282					
pX, platoon unblocked	0.96	0.96			0.96			
vC, conflicting volume	792	190			379			
vC1, stage 1 conf vol								
vC2, stage 2 conf vol								
vCu, unblocked vol	695	66			264			
tC, single (s)	6.8	6.9			4.1			
tC, 2 stage (s)								
tF (s)	3.5	3.3			2.2			
p0 queue free %	100	100			100			
cM capacity (veh/h)	360	943			1243			
Direction, Lane #	WB 1	WB 2	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	0	0	190	190	0	0	414	414
Volume Left	0	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.00	0.00	0.11	0.11	0.00	0.00	0.24	0.24
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A	A						
Approach Delay (s)	0.0		0.0			0.0		
Approach LOS	A							
Intersection Summary								
Average Delay			0.0					
Intersection Capacity Utilization			23.7%		ICU Level of Service			A
Analysis Period (min)			15					

Lanes, Volumes, Timings

102: Extension of HWP & Site Access

09/23/2024



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	45	16	0
Future Volume (vph)	0	0	0	45	16	0
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1983	0	0	1983	1983	0
Flt Permitted						
Satd. Flow (perm)	1983	0	0	1983	1983	0
Link Speed (k/h)	30			50	50	
Link Distance (m)	73.6			84.4	135.0	
Travel Time (s)	8.8			6.1	9.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	49	17	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	49	17	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	0.92	0.92	0.92	0.92	0.92	0.92
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 6.7%	ICU Level of Service A					
Analysis Period (min) 15						

HCM Unsignalized Intersection Capacity Analysis

102: Extension of HWP & Site Access

09/23/2024

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	45	16	0
Future Volume (Veh/h)	0	0	0	45	16	0
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)	0	0	0	49	17	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (m)				84		
pX, platoon unblocked						
vC, conflicting volume	66	17	17			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	66	17	17			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	939	1062	1600			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	0	49	17			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1600	1700			
Volume to Capacity	0.00	0.00	0.01			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			6.7%	ICU Level of Service		A
Analysis Period (min)			15			

Lanes, Volumes, Timings

1: Leslie Street & Green Lane East

09/24/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	118	1071	429	61	1366	259	463	677	153	138	338	103
Future Volume (vph)	118	1071	429	61	1366	259	463	677	153	138	338	103
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width (m)	3.5	3.6	3.3	3.7	3.7	3.5	4.8	3.6	3.8	3.6	3.8	3.3
Storage Length (m)	125.0		70.0	185.0		85.0	55.0		35.0	85.0		35.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor			0.99	1.00		0.98			0.99	1.00		
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1860	3689	1580	1847	3730	1664	2111	3762	1721	1881	3846	1595
Flt Permitted	0.056			0.155			0.403			0.157		
Satd. Flow (perm)	110	3689	1559	301	3730	1630	896	3762	1696	311	3846	1595
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			316			169			114			141
Link Speed (k/h)		70			70			60			60	
Link Distance (m)		324.4			502.9			426.7			282.0	
Travel Time (s)		16.7			25.9			25.6			16.9	
Confl. Peds. (#/hr)			1	1					2	2		
Confl. Bikes (#/hr)						1						
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	1%	3%	4%	4%	3%	1%	2%	1%	1%	1%	1%	3%
Adj. Flow (vph)	126	1139	456	65	1453	276	493	720	163	147	360	110
Shared Lane Traffic (%)												
Lane Group Flow (vph)	126	1139	456	65	1453	276	493	720	163	147	360	110
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			4.8			4.8	
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	0.95	0.94	0.98	0.92	0.92	0.95	0.79	0.94	0.91	0.94	0.91	0.98
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lanes, Volumes, Timings

1: Leslie Street & Green Lane East

09/24/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6		6	2		2	8		8	4		4
Detector Phase	1	6	6	5	2	2	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	7.0	30.0	30.0	7.0	30.0	30.0	7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	11.0	44.5	44.5	11.0	44.5	44.5	11.0	45.0	45.0	11.0	45.0	45.0
Total Split (s)	24.0	77.5	77.5	19.0	72.5	72.5	24.0	43.0	43.0	19.0	38.0	38.0
Total Split (%)	15.1%	48.9%	48.9%	12.0%	45.7%	45.7%	15.1%	27.1%	27.1%	12.0%	24.0%	24.0%
Maximum Green (s)	20.0	70.0	70.0	15.0	65.0	65.0	20.0	35.0	35.0	15.0	30.0	30.0
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	4.5	4.5	3.0	4.5	4.5
All-Red Time (s)	1.0	2.5	2.5	1.0	2.5	2.5	1.0	3.5	3.5	1.0	3.5	3.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	-3.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	7.5	7.5	4.0	7.5	7.5	1.0	8.0	8.0	4.0	8.0	8.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		30.0	30.0		30.0	30.0		30.0	30.0		30.0	30.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	84.5	72.0	72.0	77.9	66.3	66.3	56.6	32.5	32.5	42.5	25.4	25.4
Actuated g/C Ratio	0.58	0.49	0.49	0.53	0.45	0.45	0.39	0.22	0.22	0.29	0.17	0.17
v/c Ratio	0.64	0.63	0.49	0.27	0.86	0.33	0.92	0.86	0.35	0.64	0.54	0.28
Control Delay	41.9	30.9	9.8	17.5	43.5	11.7	61.4	67.0	18.6	46.3	58.4	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.9	30.9	9.8	17.5	43.5	11.7	61.4	67.0	18.6	46.3	58.4	5.0
LOS	D	C	A	B	D	B	E	E	B	D	E	A
Approach Delay		26.1			37.7			59.3			46.0	
Approach LOS		C			D			E			D	

Intersection Summary

Area Type: Other

Cycle Length: 158.5

Actuated Cycle Length: 146.7

Natural Cycle: 115

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.92

Intersection Signal Delay: 40.4

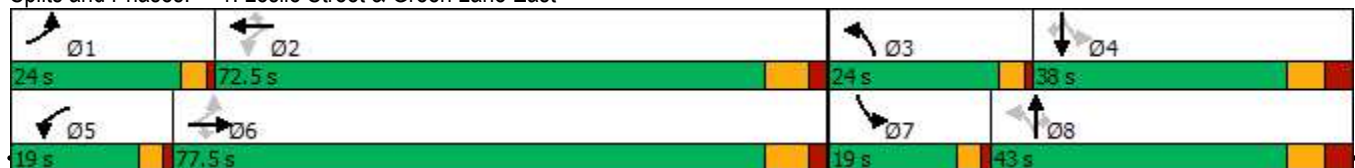
Intersection LOS: D

Intersection Capacity Utilization 94.9%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 1: Leslie Street & Green Lane East



FB_PM_2029 3:42 pm 08/21/2024

Synchro 11 Report

Page 2

Queues

1: Leslie Street & Green Lane East

09/24/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	126	1139	456	65	1453	276	493	720	163	147	360	110
v/c Ratio	0.64	0.63	0.49	0.27	0.86	0.33	0.92	0.86	0.35	0.64	0.54	0.28
Control Delay	41.9	30.9	9.8	17.5	43.5	11.7	61.4	67.0	18.6	46.3	58.4	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.9	30.9	9.8	17.5	43.5	11.7	61.4	67.0	18.6	46.3	58.4	5.0
Queue Length 50th (m)	19.8	136.6	25.5	8.4	205.2	18.8	114.6	108.4	11.7	29.4	50.9	0.0
Queue Length 95th (m)	41.8	165.3	56.8	15.7	#262.3	42.8	#187.2	137.3	33.1	47.8	69.1	8.5
Internal Link Dist (m)		300.4			478.9			402.7			258.0	
Turn Bay Length (m)	125.0		70.0	185.0		85.0	55.0		35.0	85.0		35.0
Base Capacity (vph)	303	1810	926	330	1686	829	536	900	492	255	789	439
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.63	0.49	0.20	0.86	0.33	0.92	0.80	0.33	0.58	0.46	0.25

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

1: Leslie Street & Green Lane East

09/24/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	118	1071	429	61	1366	259	463	677	153	138	338	103
Future Volume (vph)	118	1071	429	61	1366	259	463	677	153	138	338	103
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width	3.5	3.6	3.3	3.7	3.7	3.5	4.8	3.6	3.8	3.6	3.8	3.3
Total Lost time (s)	4.0	7.5	7.5	4.0	7.5	7.5	1.0	8.0	8.0	4.0	8.0	8.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1860	3689	1559	1847	3730	1630	2111	3762	1696	1881	3846	1595
Flt Permitted	0.06	1.00	1.00	0.16	1.00	1.00	0.40	1.00	1.00	0.16	1.00	1.00
Satd. Flow (perm)	110	3689	1559	301	3730	1630	895	3762	1696	311	3846	1595
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	126	1139	456	65	1453	276	493	720	163	147	360	110
RTOR Reduction (vph)	0	0	162	0	0	92	0	0	89	0	0	91
Lane Group Flow (vph)	126	1139	294	65	1453	184	493	720	74	147	360	19
Confl. Peds. (#/hr)			1	1					2	2		
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	1%	3%	4%	4%	3%	1%	2%	1%	1%	1%	1%	3%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6		6	2		2	8		8	4		4
Actuated Green, G (s)	82.5	72.0	72.0	73.7	67.2	67.2	49.6	32.6	32.6	38.5	25.5	25.5
Effective Green, g (s)	82.5	72.0	72.0	73.7	67.2	67.2	52.6	32.6	32.6	38.5	25.5	25.5
Actuated g/C Ratio	0.56	0.49	0.49	0.50	0.46	0.46	0.36	0.22	0.22	0.26	0.17	0.17
Clearance Time (s)	4.0	7.5	7.5	4.0	7.5	7.5	4.0	8.0	8.0	4.0	8.0	8.0
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	195	1799	760	218	1698	742	509	830	374	219	664	275
v/s Ratio Prot	c0.05	0.31		0.01	c0.39		c0.15	c0.19		0.06	0.09	
v/s Ratio Perm	0.31		0.19	0.14		0.11	0.19		0.04	0.12		0.01
v/c Ratio	0.65	0.63	0.39	0.30	0.86	0.25	0.97	0.87	0.20	0.67	0.54	0.07
Uniform Delay, d1	33.6	28.0	23.9	21.7	35.9	24.7	42.3	55.4	46.9	44.7	55.7	51.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.2	1.7	1.5	0.8	5.8	0.8	31.6	9.5	0.3	7.8	0.9	0.1
Delay (s)	40.8	29.7	25.4	22.5	41.6	25.5	73.9	64.9	47.1	52.6	56.6	51.2
Level of Service	D	C	C	C	D	C	E	E	D	D	E	D
Approach Delay (s)		29.4			38.5			66.0			54.7	
Approach LOS		C			D			E			D	
Intersection Summary												
HCM 2000 Control Delay			44.3									
HCM 2000 Volume to Capacity ratio			0.89									
Actuated Cycle Length (s)			147.6									
Intersection Capacity Utilization			94.9%									
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings

2: Harry Walker Parkway/Extension of HWP & Green Lane East

09/24/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	1275	89	64	1440	0	252	9	282	67	12	1
Future Volume (vph)	8	1275	89	64	1440	0	252	9	282	67	12	1
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width (m)	3.7	3.8	3.8	3.3	3.7	3.7	3.0	3.7	3.0	3.7	3.7	3.7
Storage Length (m)	65.0		65.0	50.0		30.0	0.0		0.0	60.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	7.6			7.6			7.6			2.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr't			0.850					0.855			0.989	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1921	3771	1671	1766	3730	2022	1739	1712	0	1921	2000	0
Flt Permitted	0.127			0.126			0.494					
Satd. Flow (perm)	257	3771	1671	234	3730	2022	904	1712	0	2022	2000	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			120					162			1	
Link Speed (k/h)		70			70			50			50	
Link Distance (m)		502.9			92.9			200.4			84.4	
Travel Time (s)		25.9			4.8			14.4			6.1	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	3%	4%	4%	3%	0%	2%	0%	1%	0%	0%	0%
Adj. Flow (vph)	9	1356	95	68	1532	0	268	10	300	71	13	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	9	1356	95	68	1532	0	268	310	0	71	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			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			1.6	
Two way Left Turn Lane												
Headway Factor	0.92	0.91	0.91	0.98	0.92	0.92	1.02	0.92	1.02	0.92	0.92	0.92
Turning Speed (k/h)	97		14	24		97	24		14	97		97
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		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	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	

Lanes, Volumes, Timings

2: Harry Walker Parkway/Extension of HWP & Green Lane East

09/24/2024

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		6		5	2		3	8		7	4	
Permitted Phases	6		6	2		2	8			4		
Detector Phase	6	6	6	5	2	2	3	8		7	4	
Switch Phase												
Minimum Initial (s)	30.0	30.0	30.0	7.0	30.0	30.0	5.0	10.0		7.0	5.0	
Minimum Split (s)	37.5	37.5	37.5	11.0	37.5	37.5	9.5	32.0		11.0	25.0	
Total Split (s)	85.0	85.0	85.0	11.0	96.0	96.0	29.0	43.0		11.0	25.0	
Total Split (%)	56.7%	56.7%	56.7%	7.3%	64.0%	64.0%	19.3%	28.7%		7.3%	16.7%	
Maximum Green (s)	77.5	77.5	77.5	7.0	88.5	88.5	24.5	36.0		7.0	18.0	
Yellow Time (s)	5.0	5.0	5.0	3.0	5.0	5.0	3.5	4.0		3.0	4.0	
All-Red Time (s)	2.5	2.5	2.5	1.0	2.5	2.5	1.0	3.0		1.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.5	7.5	7.5	4.0	7.5	7.5	4.5	7.0		4.0	7.0	
Lead/Lag	Lag	Lag	Lag	Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	0.2	0.2	0.2	3.0	0.2	0.2	3.0	0.2		3.0	3.0	
Recall Mode	C-Max	C-Max	C-Max	None	C-Max	C-Max	None	None		None	None	
Walk Time (s)	7.0	7.0	7.0		0.0	0.0		7.0			7.0	
Flash Dont Walk (s)	19.0	19.0	19.0		0.0	0.0		18.0			11.0	
Pedestrian Calls (#/hr)	0	0	0		0	0		0			0	
Act Effct Green (s)	95.9	95.9	95.9	108.9	105.4		32.6	19.1		11.8	7.1	
Actuated g/C Ratio	0.64	0.64	0.64	0.73	0.70		0.22	0.13		0.08	0.05	
v/c Ratio	0.05	0.56	0.09	0.28	0.58		0.78	0.86		0.46	0.15	
Control Delay	15.5	18.1	1.3	9.9	13.3		69.7	52.3		63.9	67.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	15.5	18.1	1.3	9.9	13.3		69.7	52.3		63.9	67.3	
LOS	B	B	A	A	B		E	D		E	E	
Approach Delay		17.0			13.2			60.4			64.5	
Approach LOS		B			B			E			E	

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

Natural Cycle: 95

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.86

Intersection Signal Delay: 23.2

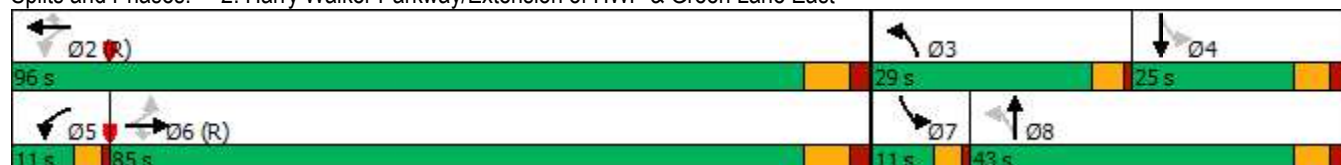
Intersection LOS: C

Intersection Capacity Utilization 88.8%

ICU Level of Service E

Analysis Period (min) 15

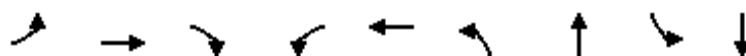
Splits and Phases: 2: Harry Walker Parkway/Extension of HWP & Green Lane East



Queues

2: Harry Walker Parkway/Extension of HWP & Green Lane East

09/24/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	9	1356	95	68	1532	268	310	71	14
v/c Ratio	0.05	0.56	0.09	0.28	0.58	0.78	0.86	0.46	0.15
Control Delay	15.5	18.1	1.3	9.9	13.3	69.7	52.3	63.9	67.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.5	18.1	1.3	9.9	13.3	69.7	52.3	63.9	67.3
Queue Length 50th (m)	1.0	114.7	0.0	5.1	108.6	75.2	45.6	21.3	3.8
Queue Length 95th (m)	4.4	167.8	4.9	12.3	160.9	97.6	75.5	28.5	11.2
Internal Link Dist (m)		478.9			68.9		176.4		60.4
Turn Bay Length (m)	65.0		65.0	50.0				60.0	
Base Capacity (vph)	164	2411	1111	247	2620	345	534	153	240
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.56	0.09	0.28	0.58	0.78	0.58	0.46	0.06
Intersection Summary									

HCM Signalized Intersection Capacity Analysis

2: Harry Walker Parkway/Extension of HWP & Green Lane East

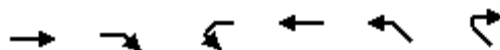
09/24/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 				
Traffic Volume (vph)	8	1275	89	64	1440	0	252	9	282	67	12	1
Future Volume (vph)	8	1275	89	64	1440	0	252	9	282	67	12	1
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width	3.7	3.8	3.8	3.3	3.7	3.7	3.0	3.7	3.0	3.7	3.7	3.7
Total Lost time (s)	7.5	7.5	7.5	4.0	7.5		4.5	7.0		4.0	7.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.85		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1921	3771	1671	1766	3730		1739	1712		1921	2001	
Flt Permitted	0.13	1.00	1.00	0.13	1.00		0.49	1.00		1.00	1.00	
Satd. Flow (perm)	258	3771	1671	235	3730		904	1712		2022	2001	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	9	1356	95	68	1532	0	268	10	300	71	13	1
RTOR Reduction (vph)	0	0	37	0	0	0	0	137	0	0	1	0
Lane Group Flow (vph)	9	1356	58	68	1532	0	268	173	0	71	13	0
Heavy Vehicles (%)	0%	3%	4%	4%	3%	0%	2%	0%	1%	0%	0%	0%
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases		6		5	2		3	8		7	4	
Permitted Phases	6		6	2		2	8			4		
Actuated Green, G (s)	91.0	91.0	91.0	101.2	101.2		34.3	23.3		10.6	3.6	
Effective Green, g (s)	91.0	91.0	91.0	101.2	101.2		34.3	23.3		10.6	3.6	
Actuated g/C Ratio	0.61	0.61	0.61	0.67	0.67		0.23	0.16		0.07	0.02	
Clearance Time (s)	7.5	7.5	7.5	4.0	7.5		4.5	7.0		4.0	7.0	
Vehicle Extension (s)	0.2	0.2	0.2	3.0	0.2		3.0	0.2		3.0	3.0	
Lane Grp Cap (vph)	156	2287	1013	221	2516		352	265		138	48	
v/s Ratio Prot		0.36		0.01	c0.41		c0.13	0.10		0.02	0.01	
v/s Ratio Perm	0.03		0.03	0.19			c0.04			0.01		
v/c Ratio	0.06	0.59	0.06	0.31	0.61		0.76	0.65		0.51	0.27	
Uniform Delay, d1	12.0	18.1	12.0	13.3	13.5		52.8	59.6		67.3	71.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.7	1.1	0.1	0.8	1.1		9.4	4.4		3.2	3.0	
Delay (s)	12.7	19.3	12.1	14.1	14.6		62.2	63.9		70.5	75.0	
Level of Service	B	B	B	B	B		E	E		E	E	
Approach Delay (s)		18.8			14.6			63.1			71.2	
Approach LOS		B			B			E			E	
Intersection Summary												
HCM 2000 Control Delay	25.0			HCM 2000 Level of Service			C					
HCM 2000 Volume to Capacity ratio	0.68											
Actuated Cycle Length (s)	150.0			Sum of lost time (s)			23.0					
Intersection Capacity Utilization	88.8%			ICU Level of Service			E					
Analysis Period (min)	15											
c Critical Lane Group												

Lanes, Volumes, Timings

3: Highway 404 West-South On-ramp & Green Lane East

09/24/2024

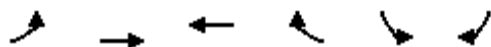


Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑↑	↑		↑↑		
Traffic Volume (vph)	14	27	0	30	0	0
Future Volume (vph)	14	27	0	30	0	0
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Width (m)	3.8	4.2	3.8	3.8	3.7	3.7
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	0.850					
Flt Protected						
Satd. Flow (prot)	3808	1778	0	3808	0	0
Flt Permitted						
Satd. Flow (perm)	3808	1778	0	3808	0	0
Link Speed (k/h)	70			70	60	
Link Distance (m)	92.9			303.3	172.8	
Travel Time (s)	4.8			15.6	10.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	15	29	0	33	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	15	29	0	33	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.3			3.3	0.0	
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	0.91	0.86	0.91	0.91	0.92	0.92
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	6.7%			ICU Level of Service A		
Analysis Period (min)	15					

Lanes, Volumes, Timings

4: Green Lane East & Highway 404 North-East/West Off-Ramp

09/24/2024

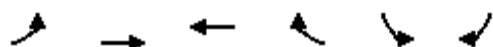


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↘↘	↗
Traffic Volume (vph)	0	904	1228	0	20	291
Future Volume (vph)	0	904	1228	0	20	291
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Width (m)	3.8	3.8	3.8	3.8	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	0.95
Frt					0.869	0.850
Flt Protected					0.994	
Satd. Flow (prot)	0	3771	3771	0	1773	1654
Flt Permitted					0.994	
Satd. Flow (perm)	0	3771	3771	0	1773	1654
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)					32	32
Link Speed (k/h)		70	70		60	
Link Distance (m)		303.3	111.8		268.4	
Travel Time (s)		15.6	5.7		16.1	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	3%	3%	0%	0%	2%
Adj. Flow (vph)	0	962	1306	0	21	310
Shared Lane Traffic (%)						47%
Lane Group Flow (vph)	0	962	1306	0	167	164
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		4.0	
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	0.91	0.91	0.91	0.91	0.88	0.88
Turning Speed (k/h)	24			14	24	14
Number of Detectors		2	2		1	1
Detector Template		Thru	Thru		Left	Right
Leading Detector (m)		30.5	30.5		6.1	6.1
Trailing Detector (m)		0.0	0.0		0.0	0.0
Detector 1 Position(m)		0.0	0.0		0.0	0.0
Detector 1 Size(m)		1.8	1.8		6.1	6.1
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0
Detector 2 Position(m)		28.7	28.7			
Detector 2 Size(m)		1.8	1.8			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type		NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases						4
Detector Phase		2	6		4	4

Lanes, Volumes, Timings

4: Green Lane East & Highway 404 North-East/West Off-Ramp

09/24/2024



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Switch Phase						
Minimum Initial (s)		30.0	30.0		15.0	15.0
Minimum Split (s)		37.7	37.7		22.2	22.2
Total Split (s)		52.7	52.7		37.2	37.2
Total Split (%)		58.6%	58.6%		41.4%	41.4%
Maximum Green (s)		45.0	45.0		30.0	30.0
Yellow Time (s)		5.9	5.9		5.1	5.1
All-Red Time (s)		1.8	1.8		2.1	2.1
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		7.7	7.7		7.2	7.2
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		4.0	4.0		3.0	3.0
Recall Mode		Max	Max		Max	Max
Act Effect Green (s)		45.0	45.0		30.0	30.0
Actuated g/C Ratio		0.50	0.50		0.33	0.33
v/c Ratio		0.51	0.69		0.27	0.29
Control Delay		16.3	19.6		19.0	19.2
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		16.3	19.6		19.0	19.2
LOS		B	B		B	B
Approach Delay		16.3	19.6		19.1	
Approach LOS		B	B		B	

Intersection Summary

Area Type: Other

Cycle Length: 89.9

Actuated Cycle Length: 89.9

Natural Cycle: 60

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.69

Intersection Signal Delay: 18.3

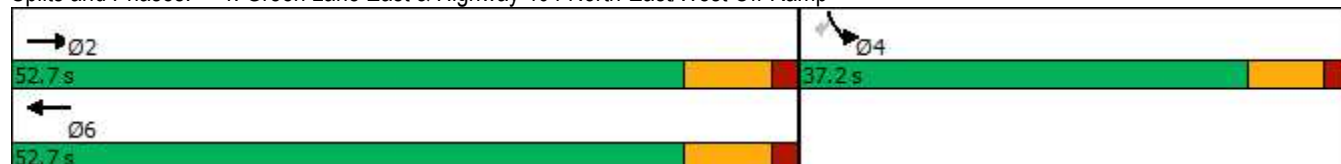
Intersection LOS: B

Intersection Capacity Utilization 56.6%

ICU Level of Service B

Analysis Period (min) 15

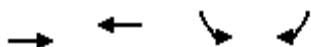
Splits and Phases: 4: Green Lane East & Highway 404 North-East/West Off-Ramp



Queues

4: Green Lane East & Highway 404 North-East/West Off-Ramp

09/24/2024

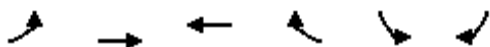


Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	962	1306	167	164
v/c Ratio	0.51	0.69	0.27	0.29
Control Delay	16.3	19.6	19.0	19.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	16.3	19.6	19.0	19.2
Queue Length 50th (m)	55.8	86.4	16.6	17.2
Queue Length 95th (m)	72.2	109.4	31.8	33.0
Internal Link Dist (m)	279.3	87.8	244.4	
Turn Bay Length (m)				
Base Capacity (vph)	1887	1887	612	573
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.51	0.69	0.27	0.29
Intersection Summary				

HCM Signalized Intersection Capacity Analysis

4: Green Lane East & Highway 404 North-East/West Off-Ramp

09/24/2024



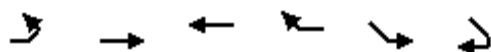
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↘	↗
Traffic Volume (vph)	0	904	1228	0	20	291
Future Volume (vph)	0	904	1228	0	20	291
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Width	3.8	3.8	3.8	3.8	4.0	4.0
Total Lost time (s)		7.7	7.7		7.2	7.2
Lane Util. Factor		0.95	0.95		1.00	0.95
Frt		1.00	1.00		0.87	0.85
Flt Protected		1.00	1.00		0.99	1.00
Satd. Flow (prot)		3771	3771		1773	1654
Flt Permitted		1.00	1.00		0.99	1.00
Satd. Flow (perm)		3771	3771		1773	1654
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	962	1306	0	21	310
RTOR Reduction (vph)	0	0	0	0	21	21
Lane Group Flow (vph)	0	962	1306	0	146	143
Heavy Vehicles (%)	0%	3%	3%	0%	0%	2%
Turn Type		NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases						4
Actuated Green, G (s)		45.0	45.0		30.0	30.0
Effective Green, g (s)		45.0	45.0		30.0	30.0
Actuated g/C Ratio		0.50	0.50		0.33	0.33
Clearance Time (s)		7.7	7.7		7.2	7.2
Vehicle Extension (s)		4.0	4.0		3.0	3.0
Lane Grp Cap (vph)		1887	1887		591	551
v/s Ratio Prot		0.26	c0.35		0.08	
v/s Ratio Perm						c0.09
v/c Ratio		0.51	0.69		0.25	0.26
Uniform Delay, d1		15.1	17.2		21.7	21.8
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		1.0	2.1		1.0	1.1
Delay (s)		16.0	19.3		22.7	23.0
Level of Service		B	B		C	C
Approach Delay (s)		16.0	19.3		22.9	
Approach LOS		B	B		C	
Intersection Summary						
HCM 2000 Control Delay			18.5		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.52			
Actuated Cycle Length (s)			89.9		Sum of lost time (s)	14.9
Intersection Capacity Utilization			56.6%		ICU Level of Service	B
Analysis Period (min)			15			

c Critical Lane Group

Lanes, Volumes, Timings

5: Green Lane East & Highway 404 East-South On-Ramp

09/24/2024

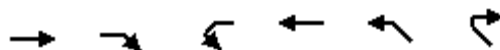


Lane Group	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations		↑↑	↑↑	↗		
Traffic Volume (vph)	0	14	30	0	0	0
Future Volume (vph)	0	14	30	0	0	0
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Width (m)	3.8	3.8	3.8	3.8	3.7	3.7
Storage Length (m)	0.0			70.0	0.0	0.0
Storage Lanes	0			0	0	0
Taper Length (m)	7.6				7.6	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	0	3808	3808	2004	0	0
Flt Permitted						
Satd. Flow (perm)	0	3808	3808	2004	0	0
Link Speed (k/h)		70	70		30	
Link Distance (m)		111.8	136.3		95.7	
Travel Time (s)		5.7	7.0		11.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	15	33	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	15	33	0	0	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		0.0	
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	0.91	0.91	0.91	0.91	0.92	0.92
Turning Speed (k/h)	24			97	97	14
Sign Control		Free	Free		Free	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 56.6%				ICU Level of Service B		
Analysis Period (min) 15						

Lanes, Volumes, Timings

6: Highway 404 West-North On-Ramp & Green Lane East

09/24/2024



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑↑	↑		↑↑		
Traffic Volume (vph)	3	11	0	0	0	0
Future Volume (vph)	3	11	0	0	0	0
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Width (m)	3.8	4.0	3.7	3.7	3.7	3.7
Storage Length (m)		15.0	0.0		0.0	0.0
Storage Lanes		1	0		0	0
Taper Length (m)			7.6		7.6	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt		0.850				
Flt Protected						
Satd. Flow (prot)	3808	1741	0	3767	0	0
Flt Permitted						
Satd. Flow (perm)	3808	1741	0	3767	0	0
Link Speed (k/h)	70			70	30	
Link Distance (m)	136.3			93.2	107.1	
Travel Time (s)	7.0			4.8	12.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	3	12	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	3	12	0	0	0	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	0.0	
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	0.91	0.88	0.92	0.92	0.92	0.92
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

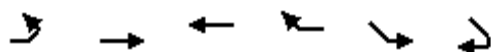
Intersection Capacity Utilization 6.7% ICU Level of Service A

Analysis Period (min) 15

Lanes, Volumes, Timings

7: Green Lane East & Highway 404 East-North On-Ramp

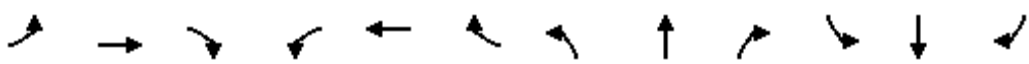
09/24/2024



Lane Group	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations		↑↑	↑↑	↑		
Traffic Volume (vph)	0	3	30	12	0	0
Future Volume (vph)	0	3	30	12	0	0
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Fr _t				0.850		
Flt Protected						
Satd. Flow (prot)	0	3767	3767	1719	0	0
Flt Permitted						
Satd. Flow (perm)	0	3767	3767	1719	0	0
Link Speed (k/h)		70	48		40	
Link Distance (m)		93.2	36.9		98.9	
Travel Time (s)		4.8	2.8		8.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	0%	2%	2%
Adj. Flow (vph)	0	3	33	13	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	3	33	13	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.8	3.8		0.0	
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	0.92	0.92	0.92	0.92	0.92	0.92
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 6.7%	ICU Level of Service A					
Analysis Period (min) 15						

Lanes, Volumes, Timings

8: Highway 404 South-East/West Off-Ramp/Carpool Parking Lot Access & Green Lane East

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	348	0	0	374	4	918	3	74	4	0	20
Future Volume (vph)	6	348	0	0	374	4	918	3	74	4	0	20
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width (m)	3.8	3.8	3.8	3.8	3.8	3.8	3.8	4.0	4.0	4.0	4.0	4.0
Storage Length (m)	20.0		0.0	0.0		20.0	0.0		60.0	0.0		0.0
Storage Lanes	1		0	0		0	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91	0.91	0.95	0.95	1.00	1.00	1.00	1.00
Frt					0.999				0.850			0.850
Flt Protected	0.950						0.950	0.953		0.950		
Satd. Flow (prot)	1942	3771	0	0	5313	0	1791	1836	1675	1984	0	1776
Flt Permitted	0.454						0.950	0.953		0.950		
Satd. Flow (perm)	928	3771	0	0	5313	0	1791	1836	1675	1984	0	1776
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					1				111			111
Link Speed (k/h)		70			70			60				40
Link Distance (m)		36.9			312.7			301.6				147.9
Travel Time (s)		1.9			16.1			18.1				13.3
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	3%	0%	0%	5%	0%	3%	0%	6%	0%	0%	0%
Adj. Flow (vph)	6	370	0	0	398	4	977	3	79	4	0	21
Shared Lane Traffic (%)							50%					
Lane Group Flow (vph)	6	370	0	0	402	0	488	492	79	4	0	21
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)		3.8			3.8			4.0			4.0	
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	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.88	0.88	0.88	0.88	0.88
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2			2		1	2	1	1		1
Detector Template	Left	Thru			Thru		Left	Thru	Right	Left		Right
Leading Detector (m)	6.1	30.5			30.5		6.1	30.5	6.1	6.1		6.1
Trailing Detector (m)	0.0	0.0			0.0		0.0	0.0	0.0	0.0		0.0
Detector 1 Position(m)	0.0	0.0			0.0		0.0	0.0	0.0	0.0		0.0
Detector 1 Size(m)	6.1	1.8			1.8		6.1	1.8	6.1	6.1		6.1
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0	0.0	0.0		0.0
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0	0.0	0.0		0.0
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0	0.0	0.0		0.0
Detector 2 Position(m)		28.7			28.7			28.7				
Detector 2 Size(m)		1.8			1.8			1.8				
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	pm+pt	NA			NA		Split	NA	Perm	Prot		Prot

Lanes, Volumes, Timings

8: Highway 404 South-East/West Off-Ramp/Carpool Parking Lot Access & Green Lane East

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	5	2			6		8	8		7		7
Permitted Phases	2								8			
Detector Phase	5	2			6		8	8	8	7		7
Switch Phase												
Minimum Initial (s)	7.0	20.0			20.0		10.0	10.0	10.0	10.0		10.0
Minimum Split (s)	11.0	41.0			41.0		40.5	40.5	40.5	17.5		17.5
Total Split (s)	19.0	74.0			55.0		57.5	57.5	57.5	30.5		30.5
Total Split (%)	11.7%	45.7%			34.0%		35.5%	35.5%	35.5%	18.8%		18.8%
Maximum Green (s)	15.0	66.0			47.0		50.0	50.0	50.0	23.0		23.0
Yellow Time (s)	3.0	5.0			5.0		4.5	4.5	4.5	4.5		4.5
All-Red Time (s)	1.0	3.0			3.0		3.0	3.0	3.0	3.0		3.0
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	4.0	8.0			8.0		7.5	7.5	7.5	7.5		7.5
Lead/Lag	Lead				Lag		Lag	Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	Yes				Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	4.0			4.0		3.0	3.0	3.0	3.0		3.0
Recall Mode	None	Ped			Ped		None	None	None	None		None
Walk Time (s)		7.0			7.0		7.0	7.0	7.0			
Flash Dont Walk (s)		26.0			26.0		26.0	26.0	26.0			
Pedestrian Calls (#/hr)		0			0		0	0	0			
Act Effct Green (s)	40.6	36.3			34.7		35.4	35.4	35.4	10.5		10.5
Actuated g/C Ratio	0.42	0.37			0.36		0.36	0.36	0.36	0.11		0.11
v/c Ratio	0.01	0.26			0.21		0.75	0.74	0.12	0.02		0.07
Control Delay	24.0	25.1			26.4		36.0	35.2	2.2	50.0		0.5
Queue Delay	0.0	0.0			0.0		0.0	0.0	0.0	0.0		0.0
Total Delay	24.0	25.1			26.4		36.0	35.2	2.2	50.0		0.5
LOS	C	C			C		D	D	A	D		A
Approach Delay		25.1			26.4			33.1				8.4
Approach LOS		C			C			C				A

Intersection Summary

Area Type: Other

Cycle Length: 162

Actuated Cycle Length: 97.1

Natural Cycle: 110

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 29.7

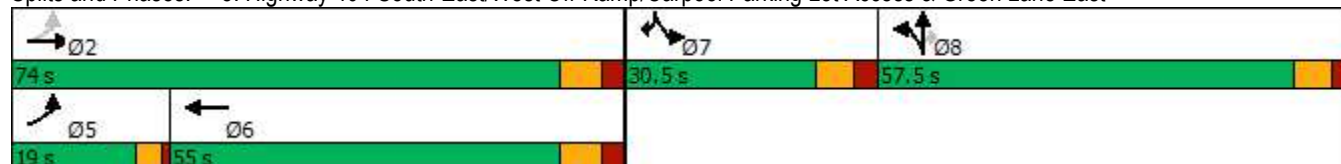
Intersection LOS: C

Intersection Capacity Utilization 68.4%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 8: Highway 404 South-East/West Off-Ramp/Carpool Parking Lot Access & Green Lane East



Queues

8: Highway 404 South-East/West Off-Ramp/Carpool Parking Lot Access & Green Lane East

								
Lane Group	EBL	EBT	WBT	NBL	NBT	NBR	SBL	SBR
Lane Group Flow (vph)	6	370	402	488	492	79	4	21
v/c Ratio	0.01	0.26	0.21	0.75	0.74	0.12	0.02	0.07
Control Delay	24.0	25.1	26.4	36.0	35.2	2.2	50.0	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.0	25.1	26.4	36.0	35.2	2.2	50.0	0.5
Queue Length 50th (m)	0.8	29.4	21.6	89.5	89.5	0.0	0.7	0.0
Queue Length 95th (m)	3.8	47.5	39.1	147.0	146.6	4.6	4.7	0.0
Internal Link Dist (m)		12.9	288.7		277.6			
Turn Bay Length (m)	20.0					60.0		
Base Capacity (vph)	552	2692	2702	968	993	956	493	525
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	0.14	0.15	0.50	0.50	0.08	0.01	0.04
Intersection Summary								

HCM Signalized Intersection Capacity Analysis

8: Highway 404 South-East/West Off-Ramp/Carpool Parking Lot Access & Green Lane East

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	348	0	0	374	4	918	3	74	4	0	20
Future Volume (vph)	6	348	0	0	374	4	918	3	74	4	0	20
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width	3.8	3.8	3.8	3.8	3.8	3.8	3.8	4.0	4.0	4.0	4.0	4.0
Total Lost time (s)	4.0	8.0			8.0		7.5	7.5	7.5	7.5		7.5
Lane Util. Factor	1.00	0.95			0.91		0.95	0.95	1.00	1.00		1.00
Flt	1.00	1.00			1.00		1.00	1.00	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00		0.95	0.95	1.00	0.95		1.00
Satd. Flow (prot)	1942	3771			5310		1791	1836	1675	1984		1776
Flt Permitted	0.45	1.00			1.00		0.95	0.95	1.00	0.95		1.00
Satd. Flow (perm)	929	3771			5310		1791	1836	1675	1984		1776
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	6	370	0	0	398	4	977	3	79	4	0	21
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	52	0	0	20
Lane Group Flow (vph)	6	370	0	0	401	0	488	492	27	4	0	1
Heavy Vehicles (%)	0%	3%	0%	0%	5%	0%	3%	0%	6%	0%	0%	0%
Turn Type	pm+pt	NA			NA		Split	NA	Perm	Prot		Prot
Protected Phases	5	2			6		8	8		7		7
Permitted Phases	2								8			
Actuated Green, G (s)	39.8	39.8			34.7		35.4	35.4	35.4	5.2		5.2
Effective Green, g (s)	39.8	39.8			34.7		35.4	35.4	35.4	5.2		5.2
Actuated g/C Ratio	0.38	0.38			0.34		0.34	0.34	0.34	0.05		0.05
Clearance Time (s)	4.0	8.0			8.0		7.5	7.5	7.5	7.5		7.5
Vehicle Extension (s)	3.0	4.0			4.0		3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	368	1451			1781		613	628	573	99		89
v/s Ratio Prot	0.00	c0.10			0.08		c0.27	0.27		c0.00		0.00
v/s Ratio Perm	0.01								0.02			
v/c Ratio	0.02	0.25			0.23		0.80	0.78	0.05	0.04		0.01
Uniform Delay, d1	19.7	21.7			24.7		30.7	30.6	22.7	46.7		46.7
Progression Factor	1.00	1.00			1.00		1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	0.0	0.1			0.1		7.1	6.3	0.0	0.2		0.1
Delay (s)	19.7	21.8			24.8		37.8	36.9	22.8	46.9		46.7
Level of Service	B	C			C		D	D	C	D		D
Approach Delay (s)		21.8			24.8			36.3			46.7	
Approach LOS		C			C			D			D	
Intersection Summary												
HCM 2000 Control Delay			31.0				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.50									
Actuated Cycle Length (s)			103.4				Sum of lost time (s)			27.0		
Intersection Capacity Utilization			68.4%				ICU Level of Service			C		
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings

101: Leslie Street & Industrial Development Site Access

09/24/2024



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	957	0	0	518
Future Volume (vph)	0	0	957	0	0	518
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1983	0	1983	0	0	1983
Flt Permitted						
Satd. Flow (perm)	1983	0	1983	0	0	1983
Link Speed (k/h)	48		48			48
Link Distance (m)	318.5		282.0			250.3
Travel Time (s)	23.9		21.2			18.8
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	0	1018	0	0	551
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	1018	0	0	551
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		3.6			3.6
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	0.92	0.92	0.92	0.92	0.92	0.92
Turning Speed (k/h)	97	97		97	97	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 51.2%			ICU Level of Service A			
Analysis Period (min) 15						

HCM Unsignalized Intersection Capacity Analysis

101: Leslie Street & Industrial Development Site Access

09/24/2024

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	957	0	0	518
Future Volume (Veh/h)	0	0	957	0	0	518
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	0	1018	0	0	551
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)			282			
pX, platoon unblocked	0.77	0.77			0.77	
vC, conflicting volume	1569	1018			1018	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1590	872			872	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	91	269			594	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	0	1018	551			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1700	594			
Volume to Capacity	0.00	0.60	0.00			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			51.2%	ICU Level of Service		A
Analysis Period (min)			15			

Lanes, Volumes, Timings
102: Extension of HWP & Site Access

09/24/2024

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	8	48	0
Future Volume (vph)	0	0	0	8	48	0
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frnt						
Flt Protected						
Satd. Flow (prot)	1983	0	0	1983	1983	0
Flt Permitted						
Satd. Flow (perm)	1983	0	0	1983	1983	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	73.6			84.4	135.0	
Travel Time (s)	5.5			6.3	10.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	9	52	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	9	52	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	0.92	0.92	0.92	0.92	0.92	0.92
Turning Speed (k/h)	97	97	97			97
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 6.7%	ICU Level of Service A					
Analysis Period (min) 15						

HCM Unsignalized Intersection Capacity Analysis

102: Extension of HWP & Site Access

09/24/2024

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	8	48	0
Future Volume (Veh/h)	0	0	0	8	48	0
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)	0	0	0	9	52	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (m)				84		
pX, platoon unblocked						
vC, conflicting volume	61	52	52			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	61	52	52			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	945	1016	1554			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	0	9	52			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1554	1700			
Volume to Capacity	0.00	0.00	0.03			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization		6.7%		ICU Level of Service		A
Analysis Period (min)		15				

Lanes, Volumes, Timings

1: Leslie Street & Green Lane East

09/23/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	118	1180	429	61	1504	259	463	726	153	138	362	103
Future Volume (vph)	118	1180	429	61	1504	259	463	726	153	138	362	103
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width (m)	3.5	3.6	3.3	3.7	3.7	3.5	4.8	3.6	3.8	3.6	3.8	3.3
Storage Length (m)	125.0		70.0	185.0		85.0	55.0		35.0	85.0		35.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor			0.99			0.99			0.99	1.00		
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1860	3689	1580	1847	3730	1664	2111	3762	1721	1881	3846	1595
Flt Permitted	0.056			0.115			0.380			0.149		
Satd. Flow (perm)	110	3689	1559	224	3730	1644	844	3762	1696	295	3846	1595
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			287			154			114			141
Link Speed (k/h)		70			70			60			60	
Link Distance (m)		324.4			502.9			426.7			282.0	
Travel Time (s)		16.7			25.9			25.6			16.9	
Confl. Peds. (#/hr)			1	1					2	2		
Confl. Bikes (#/hr)						1						
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	1%	3%	4%	4%	3%	1%	2%	1%	1%	1%	1%	3%
Adj. Flow (vph)	126	1255	456	65	1600	276	493	772	163	147	385	110
Shared Lane Traffic (%)												
Lane Group Flow (vph)	126	1255	456	65	1600	276	493	772	163	147	385	110
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			4.8			4.8	
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	0.95	0.94	0.98	0.92	0.92	0.95	0.79	0.94	0.91	0.94	0.91	0.98
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lanes, Volumes, Timings

1: Leslie Street & Green Lane East

09/23/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6		6	2		2	8		8	4		4
Detector Phase	1	6	6	5	2	2	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	7.0	30.0	30.0	7.0	30.0	30.0	7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	11.0	44.5	44.5	11.0	44.5	44.5	11.0	45.0	45.0	11.0	45.0	45.0
Total Split (s)	24.0	77.5	77.5	19.0	72.5	72.5	24.0	43.0	43.0	19.0	38.0	38.0
Total Split (%)	15.1%	48.9%	48.9%	12.0%	45.7%	45.7%	15.1%	27.1%	27.1%	12.0%	24.0%	24.0%
Maximum Green (s)	20.0	70.0	70.0	15.0	65.0	65.0	20.0	35.0	35.0	15.0	30.0	30.0
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	4.5	4.5	3.0	4.5	4.5
All-Red Time (s)	1.0	2.5	2.5	1.0	2.5	2.5	1.0	3.5	3.5	1.0	3.5	3.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	-3.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	7.5	7.5	4.0	7.5	7.5	1.0	8.0	8.0	4.0	8.0	8.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		30.0	30.0		30.0	30.0		30.0	30.0		30.0	30.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	84.5	72.0	72.0	77.9	66.3	66.3	57.9	33.8	33.8	43.8	26.8	26.8
Actuated g/C Ratio	0.57	0.49	0.49	0.53	0.45	0.45	0.39	0.23	0.23	0.30	0.18	0.18
v/c Ratio	0.64	0.70	0.50	0.32	0.96	0.34	0.94	0.90	0.34	0.65	0.55	0.27
Control Delay	42.5	33.5	11.7	19.1	54.0	13.2	64.0	70.1	18.4	46.6	58.5	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.5	33.5	11.7	19.1	54.0	13.2	64.0	70.1	18.4	46.6	58.5	4.9
LOS	D	C	B	B	D	B	E	E	B	D	E	A
Approach Delay		28.7			47.0			62.1			46.6	
Approach LOS		C			D			E			D	

Intersection Summary

Area Type: Other

Cycle Length: 158.5

Actuated Cycle Length: 148

Natural Cycle: 135

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.96

Intersection Signal Delay: 44.9

Intersection LOS: D

Intersection Capacity Utilization 99.2%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 1: Leslie Street & Green Lane East



FB_PM_2034 3:42 pm 08/21/2024

Synchro 11 Report

Page 2

Queues

1: Leslie Street & Green Lane East

09/23/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	126	1255	456	65	1600	276	493	772	163	147	385	110
v/c Ratio	0.64	0.70	0.50	0.32	0.96	0.34	0.94	0.90	0.34	0.65	0.55	0.27
Control Delay	42.5	33.5	11.7	19.1	54.0	13.2	64.0	70.1	18.4	46.6	58.5	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.5	33.5	11.7	19.1	54.0	13.2	64.0	70.1	18.4	46.6	58.5	4.9
Queue Length 50th (m)	19.8	157.6	32.4	8.4	241.5	21.7	114.6	118.2	11.7	29.4	54.8	0.0
Queue Length 95th (m)	41.8	189.8	64.8	15.7	#317.6	46.3	#192.7	#157.7	33.1	47.8	73.7	8.5
Internal Link Dist (m)	300.4			478.9			402.7			258.0		
Turn Bay Length (m)	125.0		70.0	185.0		85.0	55.0		35.0	85.0		35.0
Base Capacity (vph)	300	1793	905	291	1670	821	527	891	489	252	781	436
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.70	0.50	0.22	0.96	0.34	0.94	0.87	0.33	0.58	0.49	0.25

Intersection Summary

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

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

1: Leslie Street & Green Lane East

09/23/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 			 	
Traffic Volume (vph)	118	1180	429	61	1504	259	463	726	153	138	362	103
Future Volume (vph)	118	1180	429	61	1504	259	463	726	153	138	362	103
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width	3.5	3.6	3.3	3.7	3.7	3.5	4.8	3.6	3.8	3.6	3.8	3.3
Total Lost time (s)	4.0	7.5	7.5	4.0	7.5	7.5	1.0	8.0	8.0	4.0	8.0	8.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1860	3689	1559	1847	3730	1644	2111	3762	1696	1881	3846	1595
Flt Permitted	0.06	1.00	1.00	0.12	1.00	1.00	0.38	1.00	1.00	0.15	1.00	1.00
Satd. Flow (perm)	110	3689	1559	224	3730	1644	843	3762	1696	296	3846	1595
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	126	1255	456	65	1600	276	493	772	163	147	385	110
RTOR Reduction (vph)	0	0	148	0	0	84	0	0	88	0	0	90
Lane Group Flow (vph)	126	1255	308	65	1600	192	493	772	75	147	385	20
Confl. Peds. (#/hr)			1	1					2	2		
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	1%	3%	4%	4%	3%	1%	2%	1%	1%	1%	1%	3%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6		6	2		2	8		8	4		4
Actuated Green, G (s)	82.5	72.0	72.0	73.7	67.2	67.2	50.9	33.9	33.9	39.8	26.8	26.8
Effective Green, g (s)	82.5	72.0	72.0	73.7	67.2	67.2	53.9	33.9	33.9	39.8	26.8	26.8
Actuated g/C Ratio	0.55	0.48	0.48	0.49	0.45	0.45	0.36	0.23	0.23	0.27	0.18	0.18
Clearance Time (s)	4.0	7.5	7.5	4.0	7.5	7.5	4.0	8.0	8.0	4.0	8.0	8.0
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	193	1783	753	181	1683	741	501	856	386	217	692	287
v/s Ratio Prot	c0.05	0.34		0.02	c0.43		c0.15	c0.21		0.06	0.10	
v/s Ratio Perm	0.31		0.20	0.16		0.12	0.20		0.04	0.12		0.01
v/c Ratio	0.65	0.70	0.41	0.36	0.95	0.26	0.98	0.90	0.19	0.68	0.56	0.07
Uniform Delay, d1	36.4	30.1	24.7	23.8	39.3	25.4	42.4	55.9	46.5	44.7	55.6	50.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.7	2.4	1.6	1.2	13.0	0.8	35.8	12.6	0.2	8.1	1.0	0.1
Delay (s)	44.1	32.5	26.4	25.0	52.3	26.2	78.2	68.5	46.7	52.8	56.6	50.8
Level of Service	D	C	C	C	D	C	E	E	D	D	E	D
Approach Delay (s)		31.8			47.6			69.4			54.7	
Approach LOS		C			D			E			D	
Intersection Summary												
HCM 2000 Control Delay			48.7				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.95									
Actuated Cycle Length (s)			148.9				Sum of lost time (s)			23.5		
Intersection Capacity Utilization			99.2%				ICU Level of Service			F		
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings

2: Harry Walker Parkway/Extension of HWP & Green Lane East

09/23/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	1406	89	64	1587	0	252	9	282	67	12	1
Future Volume (vph)	8	1406	89	64	1587	0	252	9	282	67	12	1
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width (m)	3.7	3.8	3.8	3.3	3.7	3.7	3.0	3.7	3.0	3.7	3.7	3.7
Storage Length (m)	65.0		65.0	50.0		30.0	0.0		0.0	60.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	7.6			7.6			7.6			2.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr't			0.850					0.855			0.989	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1921	3771	1671	1766	3730	2022	1739	1712	0	1921	2000	0
Flt Permitted	0.096			0.096			0.476					
Satd. Flow (perm)	194	3771	1671	178	3730	2022	871	1712	0	2022	2000	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			120					153			1	
Link Speed (k/h)		70			70			50			50	
Link Distance (m)		502.9			92.9			200.4			84.4	
Travel Time (s)		25.9			4.8			14.4			6.1	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	3%	4%	4%	3%	0%	2%	0%	1%	0%	0%	0%
Adj. Flow (vph)	9	1496	95	68	1688	0	268	10	300	71	13	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	9	1496	95	68	1688	0	268	310	0	71	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			3.7			3.7	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			1.6	
Two way Left Turn Lane												
Headway Factor	0.92	0.91	0.91	0.98	0.92	0.92	1.02	0.92	1.02	0.92	0.92	0.92
Turning Speed (k/h)	97		14	24		97	24		14	97		97
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		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	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	

Lanes, Volumes, Timings

2: Harry Walker Parkway/Extension of HWP & Green Lane East

09/23/2024

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		6		5	2		3	8		7	4	
Permitted Phases	6		6	2		2	8			4		
Detector Phase	6	6	6	5	2	2	3	8		7	4	
Switch Phase												
Minimum Initial (s)	30.0	30.0	30.0	7.0	30.0	30.0	5.0	10.0		7.0	5.0	
Minimum Split (s)	37.5	37.5	37.5	11.0	37.5	37.5	9.5	32.0		11.0	25.0	
Total Split (s)	86.0	86.0	86.0	11.0	97.0	97.0	28.0	42.0		11.0	25.0	
Total Split (%)	57.3%	57.3%	57.3%	7.3%	64.7%	64.7%	18.7%	28.0%		7.3%	16.7%	
Maximum Green (s)	78.5	78.5	78.5	7.0	89.5	89.5	23.5	35.0		7.0	18.0	
Yellow Time (s)	5.0	5.0	5.0	3.0	5.0	5.0	3.5	4.0		3.0	4.0	
All-Red Time (s)	2.5	2.5	2.5	1.0	2.5	2.5	1.0	3.0		1.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.5	7.5	7.5	4.0	7.5	7.5	4.5	7.0		4.0	7.0	
Lead/Lag	Lag	Lag	Lag	Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	0.2	0.2	0.2	3.0	0.2	0.2	3.0	0.2		3.0	3.0	
Recall Mode	C-Max	C-Max	C-Max	None	C-Max	C-Max	None	None		None	None	
Walk Time (s)	7.0	7.0	7.0		0.0	0.0		7.0			7.0	
Flash Dont Walk (s)	19.0	19.0	19.0		0.0	0.0		18.0			11.0	
Pedestrian Calls (#/hr)	0	0	0		0	0		0			0	
Act Effct Green (s)	95.7	95.7	95.7	108.6	105.1		32.9	19.4		12.1	7.4	
Actuated g/C Ratio	0.64	0.64	0.64	0.72	0.70		0.22	0.13		0.08	0.05	
v/c Ratio	0.07	0.62	0.09	0.33	0.65		0.78	0.88		0.45	0.14	
Control Delay	16.6	19.6	1.4	11.3	14.7		69.7	56.2		63.1	66.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	16.6	19.6	1.4	11.3	14.7		69.7	56.2		63.1	66.2	
LOS	B	B	A	B	B		E	E		E	E	
Approach Delay		18.5			14.6			62.4			63.6	
Approach LOS		B			B			E			E	

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

Natural Cycle: 95

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.88

Intersection Signal Delay: 24.1

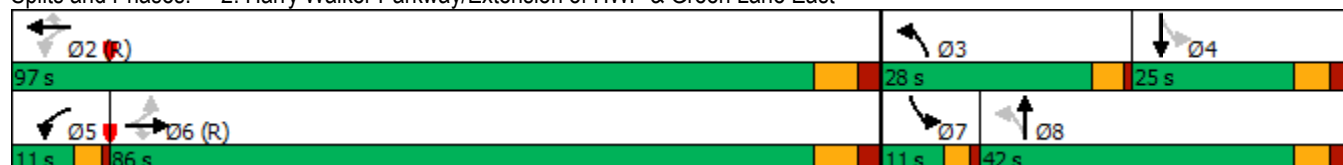
Intersection LOS: C

Intersection Capacity Utilization 88.8%

ICU Level of Service E

Analysis Period (min) 15

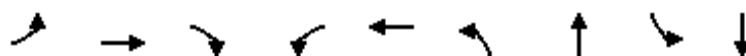
Splits and Phases: 2: Harry Walker Parkway/Extension of HWP & Green Lane East



Queues

2: Harry Walker Parkway/Extension of HWP & Green Lane East

09/23/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	9	1496	95	68	1688	268	310	71	14
v/c Ratio	0.07	0.62	0.09	0.33	0.65	0.78	0.88	0.45	0.14
Control Delay	16.6	19.6	1.4	11.3	14.7	69.7	56.2	63.1	66.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.6	19.6	1.4	11.3	14.7	69.7	56.2	63.1	66.2
Queue Length 50th (m)	1.0	136.2	0.0	5.2	131.3	74.7	48.3	21.3	3.8
Queue Length 95th (m)	4.7	198.2	5.0	12.5	193.1	96.9	78.1	28.3	11.1
Internal Link Dist (m)		478.9			68.9		176.4		60.4
Turn Bay Length (m)	65.0		65.0	50.0				60.0	
Base Capacity (vph)	123	2405	1109	209	2614	342	516	158	240
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.62	0.09	0.33	0.65	0.78	0.60	0.45	0.06
Intersection Summary									

HCM Signalized Intersection Capacity Analysis

2: Harry Walker Parkway/Extension of HWP & Green Lane East

09/23/2024

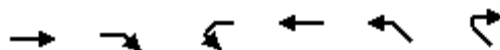
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 				
Traffic Volume (vph)	8	1406	89	64	1587	0	252	9	282	67	12	1
Future Volume (vph)	8	1406	89	64	1587	0	252	9	282	67	12	1
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width	3.7	3.8	3.8	3.3	3.7	3.7	3.0	3.7	3.0	3.7	3.7	3.7
Total Lost time (s)	7.5	7.5	7.5	4.0	7.5		4.5	7.0		4.0	7.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.85		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1921	3771	1671	1766	3730		1739	1712		1921	2001	
Flt Permitted	0.10	1.00	1.00	0.10	1.00		0.48	1.00		1.00	1.00	
Satd. Flow (perm)	194	3771	1671	178	3730		871	1712		2022	2001	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	9	1496	95	68	1688	0	268	10	300	71	13	1
RTOR Reduction (vph)	0	0	38	0	0	0	0	129	0	0	1	0
Lane Group Flow (vph)	9	1496	57	68	1688	0	268	181	0	71	13	0
Heavy Vehicles (%)	0%	3%	4%	4%	3%	0%	2%	0%	1%	0%	0%	0%
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases		6		5	2		3	8		7	4	
Permitted Phases	6		6	2		2	8			4		
Actuated Green, G (s)	90.7	90.7	90.7	101.0	101.0		34.5	23.5		10.9	3.9	
Effective Green, g (s)	90.7	90.7	90.7	101.0	101.0		34.5	23.5		10.9	3.9	
Actuated g/C Ratio	0.60	0.60	0.60	0.67	0.67		0.23	0.16		0.07	0.03	
Clearance Time (s)	7.5	7.5	7.5	4.0	7.5		4.5	7.0		4.0	7.0	
Vehicle Extension (s)	0.2	0.2	0.2	3.0	0.2		3.0	0.2		3.0	3.0	
Lane Grp Cap (vph)	117	2280	1010	186	2511		351	268		142	52	
v/s Ratio Prot		0.40		0.02	c0.45		c0.13	0.11		0.02	0.01	
v/s Ratio Perm	0.05		0.03	0.23			c0.04			0.01		
v/c Ratio	0.08	0.66	0.06	0.37	0.67		0.76	0.68		0.50	0.25	
Uniform Delay, d1	12.3	19.4	12.1	16.0	14.6		52.6	59.7		67.0	71.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.3	1.5	0.1	1.2	1.5		9.5	5.2		2.8	2.5	
Delay (s)	13.6	20.9	12.2	17.2	16.1		62.1	64.9		69.7	74.1	
Level of Service	B	C	B	B	B		E	E		E	E	
Approach Delay (s)		20.4			16.1			63.6			70.5	
Approach LOS		C			B			E			E	
Intersection Summary												
HCM 2000 Control Delay			25.8			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.74									
Actuated Cycle Length (s)			150.0			Sum of lost time (s)			23.0			
Intersection Capacity Utilization			88.8%			ICU Level of Service			E			
Analysis Period (min)			15									

c Critical Lane Group

Lanes, Volumes, Timings

3: Highway 404 West-South On-ramp & Green Lane East

09/23/2024

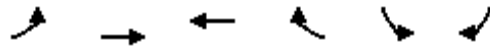


Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑↑	↑		↑↑		
Traffic Volume (vph)	14	27	0	30	0	0
Future Volume (vph)	14	27	0	30	0	0
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Width (m)	3.8	4.2	3.8	3.8	3.7	3.7
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	0.850					
Flt Protected						
Satd. Flow (prot)	3808	1778	0	3808	0	0
Flt Permitted						
Satd. Flow (perm)	3808	1778	0	3808	0	0
Link Speed (k/h)	70			70	60	
Link Distance (m)	92.9			303.3	172.8	
Travel Time (s)	4.8			15.6	10.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	15	29	0	33	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	15	29	0	33	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.3			3.3	0.0	
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	0.91	0.86	0.91	0.91	0.92	0.92
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	6.7%			ICU Level of Service A		
Analysis Period (min)	15					

Lanes, Volumes, Timings

4: Green Lane East & Highway 404 North-East/West Off-Ramp

09/23/2024

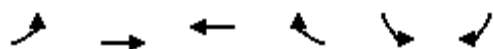


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↘↘	↗
Traffic Volume (vph)	0	997	1353	0	22	321
Future Volume (vph)	0	997	1353	0	22	321
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Width (m)	3.8	3.8	3.8	3.8	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	0.95
Frt					0.869	0.850
Flt Protected					0.994	
Satd. Flow (prot)	0	3771	3771	0	1773	1654
Flt Permitted					0.994	
Satd. Flow (perm)	0	3771	3771	0	1773	1654
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)					22	22
Link Speed (k/h)		70	70		60	
Link Distance (m)		303.3	111.8		268.4	
Travel Time (s)		15.6	5.7		16.1	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	3%	3%	0%	0%	2%
Adj. Flow (vph)	0	1061	1439	0	23	341
Shared Lane Traffic (%)						47%
Lane Group Flow (vph)	0	1061	1439	0	183	181
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		4.0	
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	0.91	0.91	0.91	0.91	0.88	0.88
Turning Speed (k/h)	24			14	24	14
Number of Detectors		2	2		1	1
Detector Template		Thru	Thru		Left	Right
Leading Detector (m)		30.5	30.5		6.1	6.1
Trailing Detector (m)		0.0	0.0		0.0	0.0
Detector 1 Position(m)		0.0	0.0		0.0	0.0
Detector 1 Size(m)		1.8	1.8		6.1	6.1
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0
Detector 2 Position(m)		28.7	28.7			
Detector 2 Size(m)		1.8	1.8			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type		NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases						4
Detector Phase		2	6		4	4

Lanes, Volumes, Timings

4: Green Lane East & Highway 404 North-East/West Off-Ramp

09/23/2024



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Switch Phase						
Minimum Initial (s)		30.0	30.0		15.0	15.0
Minimum Split (s)		37.7	37.7		22.2	22.2
Total Split (s)		52.7	52.7		37.2	37.2
Total Split (%)		58.6%	58.6%		41.4%	41.4%
Maximum Green (s)		45.0	45.0		30.0	30.0
Yellow Time (s)		5.9	5.9		5.1	5.1
All-Red Time (s)		1.8	1.8		2.1	2.1
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		7.7	7.7		7.2	7.2
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		4.0	4.0		3.0	3.0
Recall Mode		Max	Max		Max	Max
Act Effct Green (s)		45.0	45.0		30.0	30.0
Actuated g/C Ratio		0.50	0.50		0.33	0.33
v/c Ratio		0.56	0.76		0.30	0.32
Control Delay		17.1	21.5		21.1	21.4
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		17.1	21.5		21.1	21.4
LOS		B	C		C	C
Approach Delay		17.1	21.5		21.2	
Approach LOS		B	C		C	
Intersection Summary						
Area Type:	Other					
Cycle Length: 89.9						
Actuated Cycle Length: 89.9						
Natural Cycle: 60						
Control Type: Semi Act-Uncoord						
Maximum v/c Ratio: 0.76						
Intersection Signal Delay: 19.8				Intersection LOS: B		
Intersection Capacity Utilization 57.9%				ICU Level of Service B		
Analysis Period (min) 15						

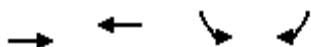
Splits and Phases: 4: Green Lane East & Highway 404 North-East/West Off-Ramp

→ Ø2	← Ø4
52.7 s	37.2 s
← Ø6	
52.7 s	

Queues

4: Green Lane East & Highway 404 North-East/West Off-Ramp

09/23/2024

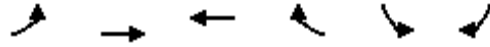


Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	1061	1439	183	181
v/c Ratio	0.56	0.76	0.30	0.32
Control Delay	17.1	21.5	21.1	21.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	17.1	21.5	21.1	21.4
Queue Length 50th (m)	63.8	100.6	20.1	21.0
Queue Length 95th (m)	81.8	127.0	36.5	38.4
Internal Link Dist (m)	279.3	87.8	244.4	
Turn Bay Length (m)				
Base Capacity (vph)	1887	1887	606	566
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.56	0.76	0.30	0.32
Intersection Summary				

HCM Signalized Intersection Capacity Analysis

4: Green Lane East & Highway 404 North-East/West Off-Ramp

09/23/2024

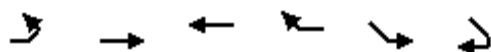


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↑↑	↑↑
Traffic Volume (vph)	0	997	1353	0	22	321
Future Volume (vph)	0	997	1353	0	22	321
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Width	3.8	3.8	3.8	3.8	4.0	4.0
Total Lost time (s)		7.7	7.7		7.2	7.2
Lane Util. Factor		0.95	0.95		1.00	0.95
Frt		1.00	1.00		0.87	0.85
Flt Protected		1.00	1.00		0.99	1.00
Satd. Flow (prot)		3771	3771		1773	1654
Flt Permitted		1.00	1.00		0.99	1.00
Satd. Flow (perm)		3771	3771		1773	1654
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	1061	1439	0	23	341
RTOR Reduction (vph)	0	0	0	0	15	15
Lane Group Flow (vph)	0	1061	1439	0	168	166
Heavy Vehicles (%)	0%	3%	3%	0%	0%	2%
Turn Type		NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases						4
Actuated Green, G (s)		45.0	45.0		30.0	30.0
Effective Green, g (s)		45.0	45.0		30.0	30.0
Actuated g/C Ratio		0.50	0.50		0.33	0.33
Clearance Time (s)		7.7	7.7		7.2	7.2
Vehicle Extension (s)		4.0	4.0		3.0	3.0
Lane Grp Cap (vph)		1887	1887		591	551
v/s Ratio Prot		0.28	c0.38		0.09	
v/s Ratio Perm						c0.10
v/c Ratio		0.56	0.76		0.28	0.30
Uniform Delay, d1		15.6	18.1		22.1	22.2
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		1.2	3.0		1.2	1.4
Delay (s)		16.8	21.1		23.3	23.6
Level of Service		B	C		C	C
Approach Delay (s)		16.8	21.1		23.4	
Approach LOS		B	C		C	
Intersection Summary						
HCM 2000 Control Delay		19.8		HCM 2000 Level of Service		B
HCM 2000 Volume to Capacity ratio		0.58				
Actuated Cycle Length (s)		89.9		Sum of lost time (s)		14.9
Intersection Capacity Utilization		57.9%		ICU Level of Service		B
Analysis Period (min)		15				
c Critical Lane Group						

Lanes, Volumes, Timings

5: Green Lane East & Highway 404 East-South On-Ramp

09/23/2024

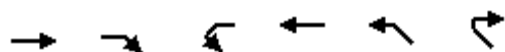


Lane Group	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations		↑↑	↑↑	↗		
Traffic Volume (vph)	0	14	30	0	0	0
Future Volume (vph)	0	14	30	0	0	0
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Width (m)	3.8	3.8	3.8	3.8	3.7	3.7
Storage Length (m)	0.0			70.0	0.0	0.0
Storage Lanes	0			0	0	0
Taper Length (m)	7.6				7.6	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	0	3808	3808	2004	0	0
Flt Permitted						
Satd. Flow (perm)	0	3808	3808	2004	0	0
Link Speed (k/h)		70	70		30	
Link Distance (m)		111.8	136.3		95.7	
Travel Time (s)		5.7	7.0		11.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	15	33	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	15	33	0	0	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		0.0	
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	0.91	0.91	0.91	0.91	0.92	0.92
Turning Speed (k/h)	24			97	97	14
Sign Control		Free	Free		Free	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 57.9%				ICU Level of Service B		
Analysis Period (min) 15						

Lanes, Volumes, Timings

6: Highway 404 West-North On-Ramp & Green Lane East

09/23/2024



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑↑	↑		↑↑		
Traffic Volume (vph)	3	11	0	0	0	0
Future Volume (vph)	3	11	0	0	0	0
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	1900
Lane Width (m)	3.8	4.0	3.7	3.7	3.7	3.7
Storage Length (m)		15.0	0.0		0.0	0.0
Storage Lanes		1	0		0	0
Taper Length (m)			7.6		7.6	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt		0.850				
Flt Protected						
Satd. Flow (prot)	3808	1741	0	3767	0	0
Flt Permitted						
Satd. Flow (perm)	3808	1741	0	3767	0	0
Link Speed (k/h)	70			70	30	
Link Distance (m)	136.3			93.2	107.1	
Travel Time (s)	7.0			4.8	12.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	3	12	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	3	12	0	0	0	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	0.0	
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	0.91	0.88	0.92	0.92	0.92	0.99
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

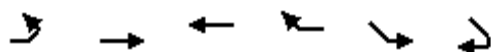
Intersection Capacity Utilization 6.7% ICU Level of Service A

Analysis Period (min) 15

Lanes, Volumes, Timings

7: Green Lane East & Highway 404 East-North On-Ramp

09/23/2024



Lane Group	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations		↑↑	↑↑	↑		
Traffic Volume (vph)	0	3	30	12	0	0
Future Volume (vph)	0	3	30	12	0	0
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Fr _t				0.850		
Flt Protected						
Satd. Flow (prot)	0	3767	3767	1719	0	0
Flt Permitted						
Satd. Flow (perm)	0	3767	3767	1719	0	0
Link Speed (k/h)		70	48		40	
Link Distance (m)		93.2	36.9		98.9	
Travel Time (s)		4.8	2.8		8.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	0%	2%	2%
Adj. Flow (vph)	0	3	33	13	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	3	33	13	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.8	3.8		0.0	
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	0.92	0.92	0.92	0.92	0.92	0.92
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 6.7%	ICU Level of Service A					
Analysis Period (min) 15						

Lanes, Volumes, Timings

8: Highway 404 South-East/West Off-Ramp/Carpool Parking Lot Access & Green Lane East

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	384	0	0	411	4	1012	3	82	4	0	20
Future Volume (vph)	6	384	0	0	411	4	1012	3	82	4	0	20
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width (m)	3.8	3.8	3.8	3.8	3.8	3.8	3.8	4.0	4.0	4.0	4.0	4.0
Storage Length (m)	20.0		0.0	0.0		20.0	0.0		60.0	0.0		0.0
Storage Lanes	1		0	0		0	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91	0.91	0.95	0.95	1.00	1.00	1.00	1.00
Frt					0.999				0.850			0.850
Flt Protected	0.950						0.950	0.953		0.950		
Satd. Flow (prot)	1942	3771	0	0	5313	0	1791	1836	1675	1984	0	1776
Flt Permitted	0.436						0.950	0.953		0.950		
Satd. Flow (perm)	891	3771	0	0	5313	0	1791	1836	1675	1984	0	1776
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					1				111			111
Link Speed (k/h)		70			70			60				40
Link Distance (m)		36.9			312.7			301.6				147.9
Travel Time (s)		1.9			16.1			18.1				13.3
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	3%	0%	0%	5%	0%	3%	0%	6%	0%	0%	0%
Adj. Flow (vph)	6	409	0	0	437	4	1077	3	87	4	0	21
Shared Lane Traffic (%)							50%					
Lane Group Flow (vph)	6	409	0	0	441	0	538	542	87	4	0	21
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)		3.8			3.8			4.0			4.0	
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	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.88	0.88	0.88	0.88	0.88
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2			2		1	2	1	1		1
Detector Template	Left	Thru			Thru		Left	Thru	Right	Left		Right
Leading Detector (m)	6.1	30.5			30.5		6.1	30.5	6.1	6.1		6.1
Trailing Detector (m)	0.0	0.0			0.0		0.0	0.0	0.0	0.0		0.0
Detector 1 Position(m)	0.0	0.0			0.0		0.0	0.0	0.0	0.0		0.0
Detector 1 Size(m)	6.1	1.8			1.8		6.1	1.8	6.1	6.1		6.1
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0	0.0	0.0		0.0
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0	0.0	0.0		0.0
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0	0.0	0.0		0.0
Detector 2 Position(m)		28.7			28.7			28.7				
Detector 2 Size(m)		1.8			1.8			1.8				
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	pm+pt	NA			NA		Split	NA	Perm	Prot		Prot

Lanes, Volumes, Timings

8: Highway 404 South-East/West Off-Ramp/Carpool Parking Lot Access & Green Lane East

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	5	2			6		8	8		7		7
Permitted Phases	2								8			
Detector Phase	5	2			6		8	8	8	7		7
Switch Phase												
Minimum Initial (s)	7.0	20.0			20.0		10.0	10.0	10.0	10.0		10.0
Minimum Split (s)	11.0	41.0			41.0		40.5	40.5	40.5	17.5		17.5
Total Split (s)	19.0	74.0			55.0		57.5	57.5	57.5	30.5		30.5
Total Split (%)	11.7%	45.7%			34.0%		35.5%	35.5%	35.5%	18.8%		18.8%
Maximum Green (s)	15.0	66.0			47.0		50.0	50.0	50.0	23.0		23.0
Yellow Time (s)	3.0	5.0			5.0		4.5	4.5	4.5	4.5		4.5
All-Red Time (s)	1.0	3.0			3.0		3.0	3.0	3.0	3.0		3.0
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	4.0	8.0			8.0		7.5	7.5	7.5	7.5		7.5
Lead/Lag	Lead				Lag		Lag	Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	Yes				Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	4.0			4.0		3.0	3.0	3.0	3.0		3.0
Recall Mode	None	Ped			Ped		None	None	None	None		None
Walk Time (s)		7.0			7.0		7.0	7.0	7.0			
Flash Dont Walk (s)		26.0			26.0		26.0	26.0	26.0			
Pedestrian Calls (#/hr)		0			0		0	0	0			
Act Effct Green (s)	40.0	35.9			34.1		43.4	43.4	43.4	10.3		10.3
Actuated g/C Ratio	0.38	0.34			0.33		0.42	0.42	0.42	0.10		0.10
v/c Ratio	0.01	0.32			0.25		0.72	0.71	0.11	0.02		0.08
Control Delay	25.7	28.6			29.6		33.8	33.1	2.8	51.8		0.6
Queue Delay	0.0	0.0			0.0		0.0	0.0	0.0	0.0		0.0
Total Delay	25.7	28.6			29.6		33.8	33.1	2.8	51.8		0.6
LOS	C	C			C		C	C	A	D		A
Approach Delay		28.5			29.6			31.1			8.7	
Approach LOS		C			C			C			A	

Intersection Summary

Area Type: Other

Cycle Length: 162

Actuated Cycle Length: 104.5

Natural Cycle: 110

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.72

Intersection Signal Delay: 30.0

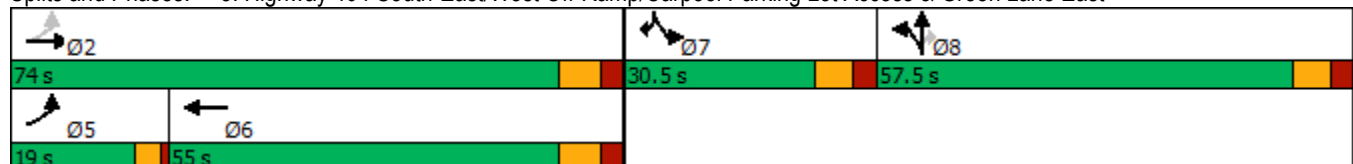
Intersection LOS: C

Intersection Capacity Utilization 70.9%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 8: Highway 404 South-East/West Off-Ramp/Carpool Parking Lot Access & Green Lane East



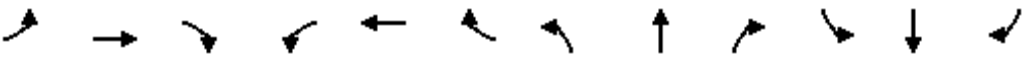
Queues

8: Highway 404 South-East/West Off-Ramp/Carpool Parking Lot Access & Green Lane East

								
Lane Group	EBL	EBT	WBT	NBL	NBT	NBR	SBL	SBR
Lane Group Flow (vph)	6	409	441	538	542	87	4	21
v/c Ratio	0.01	0.32	0.25	0.72	0.71	0.11	0.02	0.08
Control Delay	25.7	28.6	29.6	33.8	33.1	2.8	51.8	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.7	28.6	29.6	33.8	33.1	2.8	51.8	0.6
Queue Length 50th (m)	0.9	37.7	27.5	102.6	102.6	0.0	0.8	0.0
Queue Length 95th (m)	3.8	52.3	42.7	167.6	166.9	6.3	4.7	0.0
Internal Link Dist (m)		12.9	288.7		277.6			
Turn Bay Length (m)	20.0					60.0		
Base Capacity (vph)	496	2457	2466	884	906	883	450	489
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	0.17	0.18	0.61	0.60	0.10	0.01	0.04
Intersection Summary								

HCM Signalized Intersection Capacity Analysis

8: Highway 404 South-East/West Off-Ramp/Carpool Parking Lot Access & Green Lane East

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↗			↗		↰	↗	↗	↰		↗
Traffic Volume (vph)	6	384	0	0	411	4	1012	3	82	4	0	20
Future Volume (vph)	6	384	0	0	411	4	1012	3	82	4	0	20
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width	3.8	3.8	3.8	3.8	3.8	3.8	3.8	4.0	4.0	4.0	4.0	4.0
Total Lost time (s)	4.0	8.0			8.0		7.5	7.5	7.5	7.5		7.5
Lane Util. Factor	1.00	0.95			0.91		0.95	0.95	1.00	1.00		1.00
Frt	1.00	1.00			1.00		1.00	1.00	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00		0.95	0.95	1.00	0.95		1.00
Satd. Flow (prot)	1942	3771			5311		1791	1836	1675	1984		1776
Flt Permitted	0.44	1.00			1.00		0.95	0.95	1.00	0.95		1.00
Satd. Flow (perm)	891	3771			5311		1791	1836	1675	1984		1776
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	6	409	0	0	437	4	1077	3	87	4	0	21
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	53	0	0	20
Lane Group Flow (vph)	6	409	0	0	440	0	538	542	34	4	0	1
Heavy Vehicles (%)	0%	3%	0%	0%	5%	0%	3%	0%	6%	0%	0%	0%
Turn Type	pm+pt	NA			NA		Split	NA	Perm	Prot		Prot
Protected Phases	5	2			6		8	8		7		7
Permitted Phases	2								8			
Actuated Green, G (s)	39.3	39.3			34.1		43.4	43.4	43.4	5.3		5.3
Effective Green, g (s)	39.3	39.3			34.1		43.4	43.4	43.4	5.3		5.3
Actuated g/C Ratio	0.35	0.35			0.31		0.39	0.39	0.39	0.05		0.05
Clearance Time (s)	4.0	8.0			8.0		7.5	7.5	7.5	7.5		7.5
Vehicle Extension (s)	3.0	4.0			4.0		3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	326	1335			1631		700	717	654	94		84
v/s Ratio Prot	0.00	c0.11			0.08		c0.30	0.30		c0.00		0.00
v/s Ratio Perm	0.01								0.02			
v/c Ratio	0.02	0.31			0.27		0.77	0.76	0.05	0.04		0.01
Uniform Delay, d1	23.3	26.0			29.0		29.4	29.2	21.0	50.4		50.4
Progression Factor	1.00	1.00			1.00		1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	0.0	0.2			0.1		5.1	4.6	0.0	0.2		0.1
Delay (s)	23.3	26.2			29.2		34.5	33.8	21.0	50.6		50.4
Level of Service	C	C			C		C	C	C	D		D
Approach Delay (s)		26.1			29.2			33.2			50.4	
Approach LOS		C			C			C			D	
Intersection Summary												
HCM 2000 Control Delay			31.1				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.54									
Actuated Cycle Length (s)			111.0				Sum of lost time (s)			27.0		
Intersection Capacity Utilization			70.9%				ICU Level of Service			C		
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings
101: Leslie Street & Industrial Development Site Access

09/23/2024

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	957	0	0	518
Future Volume (vph)	0	0	957	0	0	518
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Storage Length (m)	0.0	0.0		60.0	30.0	
Storage Lanes	1	1		1	1	
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frt						
Flt Protected						
Satd. Flow (prot)	1983	1983	3767	1983	1983	3767
Flt Permitted						
Satd. Flow (perm)	1983	1983	3767	1983	1983	3767
Link Speed (k/h)	30		48			48
Link Distance (m)	318.5		282.0			250.3
Travel Time (s)	38.2		21.2			18.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	1040	0	0	563
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	1040	0	0	563
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		3.7			3.7
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	1.6		1.6			1.6
Two way Left Turn Lane						
Headway Factor	0.92	0.92	0.92	0.92	0.92	0.92
Turning Speed (k/h)	97	97		97	97	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	28.5%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis

101: Leslie Street & Industrial Development Site Access

09/23/2024

										
Movement	WBL	WBR	NBT	NBR	SBL	SBT				
Lane Configurations										
Traffic Volume (veh/h)	0	0	957	0	0	518				
Future Volume (Veh/h)	0	0	957	0	0	518				
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)	0	0	1040	0	0	563				
Pedestrians										
Lane Width (m)										
Walking Speed (m/s)										
Percent Blockage										
Right turn flare (veh)										
Median type			None			None				
Median storage (veh)										
Upstream signal (m)			282							
pX, platoon unblocked	0.81	0.81				0.81				
vC, conflicting volume	1322	520				1040				
vC1, stage 1 conf vol										
vC2, stage 2 conf vol										
vCu, unblocked vol	927	0				579				
tC, single (s)	6.8	6.9				4.1				
tC, 2 stage (s)										
tF (s)	3.5	3.3				2.2				
p0 queue free %	100	100				100				
cM capacity (veh/h)	216	878				802				
Direction, Lane #	WB 1	WB 2	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3		
Volume Total	0	0	520	520	0	0	282	282		
Volume Left	0	0	0	0	0	0	0	0		
Volume Right	0	0	0	0	0	0	0	0		
cSH	1700	1700	1700	1700	1700	1700	1700	1700		
Volume to Capacity	0.00	0.00	0.31	0.31	0.00	0.00	0.17	0.17		
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Lane LOS	A	A								
Approach Delay (s)	0.0		0.0			0.0				
Approach LOS	A									
Intersection Summary										
Average Delay			0.0							
Intersection Capacity Utilization			28.5%		ICU Level of Service		A			
Analysis Period (min)			15							

Lanes, Volumes, Timings
102: Extension of HWP & Site Access

09/23/2024

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	8	48	0
Future Volume (vph)	0	0	0	8	48	0
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1983	0	0	1983	1983	0
Flt Permitted						
Satd. Flow (perm)	1983	0	0	1983	1983	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	73.6			84.4	135.0	
Travel Time (s)	5.5			6.3	10.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	9	52	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	9	52	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	0.92	0.92	0.92	0.92	0.92	0.92
Turning Speed (k/h)	97	97	97			97
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 6.7%	ICU Level of Service A					
Analysis Period (min) 15						

HCM Unsignalized Intersection Capacity Analysis

102: Extension of HWP & Site Access

09/23/2024

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	8	48	0
Future Volume (Veh/h)	0	0	0	8	48	0
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)	0	0	0	9	52	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (m)				84		
pX, platoon unblocked						
vC, conflicting volume	61	52	52			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	61	52	52			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	945	1016	1554			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	0	9	52			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1554	1700			
Volume to Capacity	0.00	0.00	0.03			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization		6.7%		ICU Level of Service		A
Analysis Period (min)		15				

Lanes, Volumes, Timings
1: Leslie Street & Green Lane East

10/04/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	77	1068	490	106	742	104	212	267	92	307	443	69
Future Volume (vph)	77	1068	490	106	742	104	212	267	92	307	443	69
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width (m)	3.5	3.6	3.3	3.7	3.7	3.5	4.8	3.6	3.8	3.6	3.8	3.3
Storage Length (m)	125.0		70.0	185.0		85.0	55.0		35.0	85.0		35.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	1.00		0.98	1.00		0.97	1.00		0.98	0.99		0.99
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1824	3619	1508	1830	3525	1303	2031	3725	1738	1881	3808	1643
Flt Permitted	0.306			0.161			0.255			0.557		
Satd. Flow (perm)	587	3619	1485	310	3525	1270	545	3725	1704	1097	3808	1622
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			362			145			114			141
Link Speed (k/h)		70			70			60			60	
Link Distance (m)		324.4			502.9			426.7			282.0	
Travel Time (s)		16.7			25.9			25.6			16.9	
Confl. Peds. (#/hr)	2		2	2		2	1		6	6		1
Confl. Bikes (#/hr)			1			1						
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	3%	5%	9%	5%	9%	29%	6%	2%	0%	1%	2%	0%
Adj. Flow (vph)	79	1090	500	108	757	106	216	272	94	313	452	70
Shared Lane Traffic (%)												
Lane Group Flow (vph)	79	1090	500	108	757	106	216	272	94	313	452	70
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			4.8			4.8	
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	0.95	0.94	0.98	0.92	0.92	0.95	0.79	0.94	0.91	0.94	0.91	0.98
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lanes, Volumes, Timings

1: Leslie Street & Green Lane East

10/04/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6		6	2		2	8		8	4		4
Detector Phase	1	6	6	5	2	2	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	7.0	30.0	30.0	7.0	30.0	30.0	7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	11.0	44.5	44.5	11.0	44.5	44.5	11.0	45.0	45.0	11.0	45.0	45.0
Total Split (s)	24.0	77.5	77.5	19.0	72.5	72.5	24.0	43.0	43.0	19.0	38.0	38.0
Total Split (%)	15.1%	48.9%	48.9%	12.0%	45.7%	45.7%	15.1%	27.1%	27.1%	12.0%	24.0%	24.0%
Maximum Green (s)	20.0	70.0	70.0	15.0	65.0	65.0	20.0	35.0	35.0	15.0	30.0	30.0
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	4.5	4.5	3.0	4.5	4.5
All-Red Time (s)	1.0	2.5	2.5	1.0	2.5	2.5	1.0	3.5	3.5	1.0	3.5	3.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	7.5	7.5	4.0	7.5	7.5	4.0	8.0	8.0	4.0	8.0	8.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		30.0	30.0		30.0	30.0		30.0	30.0		30.0	30.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	82.2	70.4	70.4	84.7	71.6	71.6	43.8	23.8	23.8	41.7	22.6	22.6
Actuated g/C Ratio	0.58	0.49	0.49	0.59	0.50	0.50	0.31	0.17	0.17	0.29	0.16	0.16
v/c Ratio	0.19	0.61	0.55	0.38	0.43	0.15	0.64	0.44	0.25	0.77	0.75	0.19
Control Delay	13.8	29.3	9.6	16.5	24.5	1.5	44.8	55.0	6.2	55.1	65.8	1.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.8	29.3	9.6	16.5	24.5	1.5	44.8	55.0	6.2	55.1	65.8	1.1
LOS	B	C	A	B	C	A	D	D	A	E	E	A
Approach Delay		22.6			21.1			43.3			56.4	
Approach LOS		C			C			D			E	

Intersection Summary

Area Type: Other

Cycle Length: 158.5

Actuated Cycle Length: 142.4

Natural Cycle: 115

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.77

Intersection Signal Delay: 32.2

Intersection LOS: C

Intersection Capacity Utilization 84.8%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 1: Leslie Street & Green Lane East



FT_AM_2029 2:07 pm 08/21/2024 Baseline

Synchro 11 Report

Page 2

Queues

1: Leslie Street & Green Lane East

10/04/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	79	1090	500	108	757	106	216	272	94	313	452	70
v/c Ratio	0.19	0.61	0.55	0.38	0.43	0.15	0.64	0.44	0.25	0.77	0.75	0.19
Control Delay	13.8	29.3	9.6	16.5	24.5	1.5	44.8	55.0	6.2	55.1	65.8	1.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.8	29.3	9.6	16.5	24.5	1.5	44.8	55.0	6.2	55.1	65.8	1.1
Queue Length 50th (m)	8.7	115.2	22.3	12.0	69.7	0.0	45.4	36.4	0.0	70.5	64.7	0.0
Queue Length 95th (m)	18.3	163.6	63.0	23.9	101.3	3.9	68.4	51.4	10.0	101.7	87.5	0.0
Internal Link Dist (m)	300.4			478.9			402.7			258.0		
Turn Bay Length (m)	125.0		70.0	185.0		85.0	55.0		35.0	85.0		35.0
Base Capacity (vph)	535	1788	916	351	1772	710	389	920	506	404	806	454
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.61	0.55	0.31	0.43	0.15	0.56	0.30	0.19	0.77	0.56	0.15
Intersection Summary												

HCM Signalized Intersection Capacity Analysis

1: Leslie Street & Green Lane East

10/04/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	77	1068	490	106	742	104	212	267	92	307	443	69
Future Volume (vph)	77	1068	490	106	742	104	212	267	92	307	443	69
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width	3.5	3.6	3.3	3.7	3.7	3.5	4.8	3.6	3.8	3.6	3.8	3.3
Total Lost time (s)	4.0	7.5	7.5	4.0	7.5	7.5	4.0	8.0	8.0	4.0	8.0	8.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1824	3619	1485	1830	3525	1271	2031	3725	1705	1876	3808	1622
Flt Permitted	0.31	1.00	1.00	0.16	1.00	1.00	0.26	1.00	1.00	0.56	1.00	1.00
Satd. Flow (perm)	587	3619	1485	311	3525	1271	546	3725	1705	1101	3808	1622
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	79	1090	500	108	757	106	216	272	94	313	452	70
RTOR Reduction (vph)	0	0	183	0	0	53	0	0	78	0	0	59
Lane Group Flow (vph)	79	1090	317	108	757	53	216	272	16	313	452	11
Confl. Peds. (#/hr)	2		2	2		2	1		6	6		1
Confl. Bikes (#/hr)			1			1						
Heavy Vehicles (%)	3%	5%	9%	5%	9%	29%	6%	2%	0%	1%	2%	0%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6		6	2		2	8		8	4		4
Actuated Green, G (s)	78.6	70.3	70.3	81.2	71.6	71.6	40.1	23.8	23.8	37.7	22.6	22.6
Effective Green, g (s)	78.6	70.3	70.3	81.2	71.6	71.6	40.1	23.8	23.8	37.7	22.6	22.6
Actuated g/C Ratio	0.55	0.49	0.49	0.57	0.50	0.50	0.28	0.17	0.17	0.26	0.16	0.16
Clearance Time (s)	4.0	7.5	7.5	4.0	7.5	7.5	4.0	8.0	8.0	4.0	8.0	8.0
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	396	1787	733	279	1773	639	323	623	285	373	604	257
v/s Ratio Prot	0.01	c0.30		c0.03	0.21		0.08	0.07		c0.09	0.12	
v/s Ratio Perm	0.10		0.21	0.19		0.04	0.11		0.01	c0.13		0.01
v/c Ratio	0.20	0.61	0.43	0.39	0.43	0.08	0.67	0.44	0.06	0.84	0.75	0.04
Uniform Delay, d1	15.4	26.1	23.2	17.3	22.4	18.3	41.6	53.2	49.8	47.0	57.1	50.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	1.6	1.9	0.9	0.8	0.3	5.2	0.5	0.1	15.2	5.1	0.1
Delay (s)	15.7	27.6	25.0	18.2	23.1	18.6	46.8	53.7	49.9	62.1	62.2	50.8
Level of Service	B	C	C	B	C	B	D	D	D	E	E	D
Approach Delay (s)		26.3			22.1			50.5			61.2	
Approach LOS		C			C			D			E	
Intersection Summary												
HCM 2000 Control Delay			35.9				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.66									
Actuated Cycle Length (s)			142.3				Sum of lost time (s)			23.5		
Intersection Capacity Utilization			84.8%				ICU Level of Service			E		
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings

2: Harry Walker Parkway/Extension of HWP & Green Lane East

10/04/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	31	1278	197	192	881	90	34	20	42	48	0	5
Future Volume (vph)	31	1278	197	192	881	90	34	20	42	48	0	5
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width (m)	3.7	3.8	3.8	3.3	3.7	3.7	3.0	3.7	3.0	3.7	3.7	3.7
Storage Length (m)	65.0		65.0	50.0		30.0	0.0		0.0	60.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	7.6			7.6			7.6			2.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr't			0.850			0.850		0.898			0.850	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1921	3735	1671	1766	3461	1719	1430	1680	0	1921	1719	0
Flt Permitted	0.311			0.144			0.597					
Satd. Flow (perm)	629	3735	1671	268	3461	1719	899	1680	0	2022	1719	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			133			69		44			212	
Link Speed (k/h)		70			70			50			50	
Link Distance (m)		502.9			92.9			200.4			84.4	
Travel Time (s)		25.9			4.8			14.4			6.1	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	4%	4%	4%	11%	0%	24%	0%	12%	0%	0%	0%
Adj. Flow (vph)	32	1331	205	200	918	94	35	21	44	50	0	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	32	1331	205	200	918	94	35	65	0	50	5	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)		4.9			4.9			4.9			1.6	
Two way Left Turn Lane												
Headway Factor	0.92	0.91	0.91	0.98	0.92	0.92	1.02	0.92	1.02	0.92	0.92	0.92
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		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	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	

Lanes, Volumes, Timings

2: Harry Walker Parkway/Extension of HWP & Green Lane East

10/04/2024

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		6		5	2		3	8		7	4	
Permitted Phases	6		6	2		2	8			4		
Detector Phase	6	6	6	5	2	2	3	8		7	4	
Switch Phase												
Minimum Initial (s)	30.0	30.0	30.0	7.0	30.0	30.0	5.0	10.0		7.0	5.0	
Minimum Split (s)	37.5	37.5	37.5	11.0	37.5	37.5	9.5	32.0		11.0	25.0	
Total Split (s)	82.0	82.0	82.0	25.0	107.0	107.0	10.0	32.0		11.0	33.0	
Total Split (%)	54.7%	54.7%	54.7%	16.7%	71.3%	71.3%	6.7%	21.3%		7.3%	22.0%	
Maximum Green (s)	74.5	74.5	74.5	21.0	99.5	99.5	5.5	25.0		7.0	26.0	
Yellow Time (s)	5.0	5.0	5.0	3.0	5.0	5.0	3.5	4.0		3.0	4.0	
All-Red Time (s)	2.5	2.5	2.5	1.0	2.5	2.5	1.0	3.0		1.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.5	7.5	7.5	4.0	7.5	7.5	4.5	7.0		4.0	7.0	
Lead/Lag	Lag	Lag	Lag	Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	0.2	0.2	0.2	3.0	0.2	0.2	3.0	0.2		3.0	3.0	
Recall Mode	C-Max	C-Max	C-Max	None	C-Max	C-Max	None	None		None	None	
Walk Time (s)	7.0	7.0	7.0		0.0	0.0		7.0			7.0	
Flash Dont Walk (s)	19.0	19.0	19.0		0.0	0.0		18.0			11.0	
Pedestrian Calls (#/hr)	0	0	0		0	0		0			0	
Act Effct Green (s)	103.5	103.5	103.5	123.6	121.6	121.6	18.8	10.0		9.8	6.6	
Actuated g/C Ratio	0.69	0.69	0.69	0.82	0.81	0.81	0.13	0.07		0.07	0.04	
v/c Ratio	0.07	0.52	0.17	0.58	0.33	0.07	0.21	0.42		0.39	0.02	
Control Delay	11.6	14.1	4.5	11.6	5.2	1.6	58.5	36.5		73.6	0.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	11.6	14.1	4.5	11.6	5.2	1.6	58.5	36.5		73.6	0.2	
LOS	B	B	A	B	A	A	E	D		E	A	
Approach Delay		12.8			6.0			44.2			66.9	
Approach LOS		B			A			D			E	

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

Natural Cycle: 95

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.58

Intersection Signal Delay: 12.1

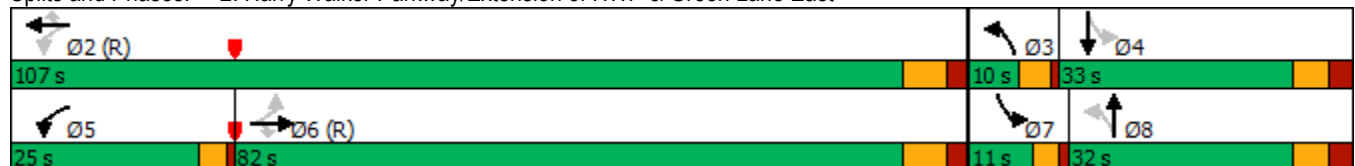
Intersection LOS: B

Intersection Capacity Utilization 77.5%

ICU Level of Service D

Analysis Period (min) 15

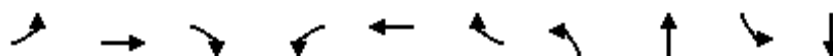
Splits and Phases: 2: Harry Walker Parkway/Extension of HWP & Green Lane East



Queues

2: Harry Walker Parkway/Extension of HWP & Green Lane East

10/04/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	32	1331	205	200	918	94	35	65	50	5
v/c Ratio	0.07	0.52	0.17	0.58	0.33	0.07	0.21	0.42	0.39	0.02
Control Delay	11.6	14.1	4.5	11.6	5.2	1.6	58.5	36.5	73.6	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.6	14.1	4.5	11.6	5.2	1.6	58.5	36.5	73.6	0.2
Queue Length 50th (m)	3.3	104.6	7.2	12.4	41.0	1.6	9.1	6.0	14.9	0.0
Queue Length 95th (m)	8.9	143.1	19.3	22.2	49.2	5.7	20.2	21.6	25.5	0.0
Internal Link Dist (m)		478.9			68.9			176.4		60.4
Turn Bay Length (m)	65.0		65.0	50.0		30.0			60.0	
Base Capacity (vph)	434	2576	1193	430	2805	1406	170	316	127	473
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.52	0.17	0.47	0.33	0.07	0.21	0.21	0.39	0.01
Intersection Summary										

HCM Signalized Intersection Capacity Analysis

2: Harry Walker Parkway/Extension of HWP & Green Lane East

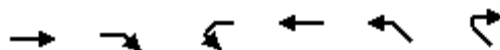
10/04/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	31	1278	197	192	881	90	34	20	42	48	0	5
Future Volume (vph)	31	1278	197	192	881	90	34	20	42	48	0	5
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width	3.7	3.8	3.8	3.3	3.7	3.7	3.0	3.7	3.0	3.7	3.7	3.7
Total Lost time (s)	7.5	7.5	7.5	4.0	7.5	7.5	4.5	7.0		4.0	7.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.90		1.00	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1921	3735	1671	1766	3461	1719	1430	1680		1921	1719	
Flt Permitted	0.31	1.00	1.00	0.14	1.00	1.00	0.60	1.00		1.00	1.00	
Satd. Flow (perm)	629	3735	1671	268	3461	1719	899	1680		2022	1719	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	32	1331	205	200	918	94	35	21	44	50	0	5
RTOR Reduction (vph)	0	0	47	0	0	17	0	40	0	0	5	0
Lane Group Flow (vph)	32	1331	158	200	918	77	35	25	0	50	0	0
Heavy Vehicles (%)	0%	4%	4%	4%	11%	0%	24%	0%	12%	0%	0%	0%
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases		6		5	2		3	8		7	4	
Permitted Phases	6		6	2		2	8			4		
Actuated Green, G (s)	97.0	97.0	97.0	113.6	113.6	113.6	21.9	12.3		7.8	2.2	
Effective Green, g (s)	97.0	97.0	97.0	113.6	113.6	113.6	21.9	12.3		7.8	2.2	
Actuated g/C Ratio	0.65	0.65	0.65	0.76	0.76	0.76	0.15	0.08		0.05	0.01	
Clearance Time (s)	7.5	7.5	7.5	4.0	7.5	7.5	4.5	7.0		4.0	7.0	
Vehicle Extension (s)	0.2	0.2	0.2	3.0	0.2	0.2	3.0	0.2		3.0	3.0	
Lane Grp Cap (vph)	406	2415	1080	328	2621	1301	185	137		101	25	
v/s Ratio Prot		0.36		c0.05	0.27		c0.02	0.01		c0.02	0.00	
v/s Ratio Perm	0.05		0.09	c0.41		0.04	0.01			c0.01		
v/c Ratio	0.08	0.55	0.15	0.61	0.35	0.06	0.19	0.18		0.50	0.00	
Uniform Delay, d1	9.9	14.5	10.3	11.4	6.0	4.6	56.1	64.1		69.2	72.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.4	0.9	0.3	3.2	0.4	0.1	0.5	0.2		3.8	0.0	
Delay (s)	10.2	15.5	10.6	14.6	6.4	4.7	56.6	64.4		73.0	72.9	
Level of Service	B	B	B	B	A	A	E	E		E	E	
Approach Delay (s)		14.7			7.6			61.7			73.0	
Approach LOS		B			A			E			E	
Intersection Summary												
HCM 2000 Control Delay			14.5									
HCM 2000 Volume to Capacity ratio			0.58									
Actuated Cycle Length (s)			150.0									
Intersection Capacity Utilization			77.5%									
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings

3: Highway 404 West-South On-ramp & Green Lane East

10/04/2024

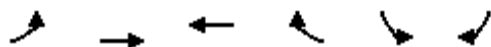


Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑↑	↑		↑↑		
Traffic Volume (vph)	16	23	0	90	0	0
Future Volume (vph)	16	23	0	90	0	0
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Width (m)	3.8	4.2	3.8	3.8	3.7	3.7
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	0.850					
Flt Protected						
Satd. Flow (prot)	3808	1778	0	3808	0	0
Flt Permitted						
Satd. Flow (perm)	3808	1778	0	3808	0	0
Link Speed (k/h)	70			70	60	
Link Distance (m)	92.9			303.3	172.8	
Travel Time (s)	4.8			15.6	10.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	17	25	0	98	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	17	25	0	98	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.3			3.3	0.0	
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	0.91	0.86	0.91	0.91	0.92	0.92
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Pretimed					
Intersection Capacity Utilization	6.7%			ICU Level of Service A		
Analysis Period (min)	15					

Lanes, Volumes, Timings

4: Green Lane East & Highway 404 North-East/West Off-Ramp

10/04/2024

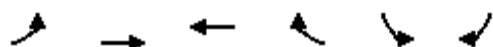


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↘↘	↗
Traffic Volume (vph)	0	401	718	0	24	466
Future Volume (vph)	0	401	718	0	24	466
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Width (m)	3.8	3.8	3.8	3.8	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	0.95
Frt					0.865	0.850
Flt Protected					0.995	
Satd. Flow (prot)	0	3597	3349	0	1750	1638
Flt Permitted					0.995	
Satd. Flow (perm)	0	3597	3349	0	1750	1638
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)					143	143
Link Speed (k/h)		70	70		60	
Link Distance (m)		303.3	111.8		268.4	
Travel Time (s)		15.6	5.7		16.1	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	8%	16%	0%	0%	3%
Adj. Flow (vph)	0	431	772	0	26	501
Shared Lane Traffic (%)						48%
Lane Group Flow (vph)	0	431	772	0	266	261
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		4.0	
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	0.91	0.91	0.91	0.91	0.88	0.88
Turning Speed (k/h)	24			14	24	14
Number of Detectors		2	2		1	1
Detector Template		Thru	Thru		Left	Right
Leading Detector (m)		30.5	30.5		6.1	6.1
Trailing Detector (m)		0.0	0.0		0.0	0.0
Detector 1 Position(m)		0.0	0.0		0.0	0.0
Detector 1 Size(m)		1.8	1.8		6.1	6.1
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0
Detector 2 Position(m)		28.7	28.7			
Detector 2 Size(m)		1.8	1.8			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type		NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases						4
Detector Phase		2	6		4	4

Lanes, Volumes, Timings

4: Green Lane East & Highway 404 North-East/West Off-Ramp

10/04/2024



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Switch Phase						
Minimum Initial (s)		30.0	30.0		15.0	15.0
Minimum Split (s)		37.7	37.7		22.2	22.2
Total Split (s)		52.7	52.7		37.2	37.2
Total Split (%)		58.6%	58.6%		41.4%	41.4%
Maximum Green (s)		45.0	45.0		30.0	30.0
Yellow Time (s)		5.9	5.9		5.1	5.1
All-Red Time (s)		1.8	1.8		2.1	2.1
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		7.7	7.7		7.2	7.2
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		4.0	4.0		3.0	3.0
Recall Mode		Max	Max		Max	Max
Act Effct Green (s)		45.0	45.0		30.0	30.0
Actuated g/C Ratio		0.50	0.50		0.33	0.33
v/c Ratio		0.24	0.46		0.39	0.41
Control Delay		13.2	15.7		12.3	12.4
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		13.2	15.7		12.3	12.4
LOS		B	B		B	B
Approach Delay		13.2	15.7		12.4	
Approach LOS		B	B		B	
Intersection Summary						
Area Type:	Other					
Cycle Length: 89.9						
Actuated Cycle Length: 89.9						
Natural Cycle: 60						
Control Type: Semi Act-Uncoord						
Maximum v/c Ratio: 0.46						
Intersection Signal Delay: 14.1				Intersection LOS: B		
Intersection Capacity Utilization 55.7%				ICU Level of Service B		
Analysis Period (min) 15						

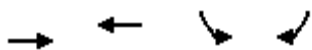
Splits and Phases: 4: Green Lane East & Highway 404 North-East/West Off-Ramp

→ Ø2		↖ Ø4
52.7 s		37.2 s
← Ø6		
52.7 s		

Queues

4: Green Lane East & Highway 404 North-East/West Off-Ramp

10/04/2024

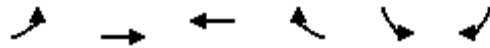


Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	431	772	266	261
v/c Ratio	0.24	0.46	0.39	0.41
Control Delay	13.2	15.7	12.3	12.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	13.2	15.7	12.3	12.4
Queue Length 50th (m)	21.2	43.3	15.1	15.2
Queue Length 95th (m)	30.0	57.7	34.2	35.6
Internal Link Dist (m)	279.3	87.8	244.4	
Turn Bay Length (m)				
Base Capacity (vph)	1800	1676	679	641
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.24	0.46	0.39	0.41
Intersection Summary				

HCM Signalized Intersection Capacity Analysis

4: Green Lane East & Highway 404 North-East/West Off-Ramp

10/04/2024



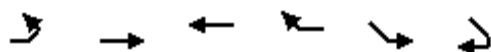
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↑↑	↑↑
Traffic Volume (vph)	0	401	718	0	24	466
Future Volume (vph)	0	401	718	0	24	466
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Width	3.8	3.8	3.8	3.8	4.0	4.0
Total Lost time (s)		7.7	7.7		7.2	7.2
Lane Util. Factor		0.95	0.95		1.00	0.95
Frt		1.00	1.00		0.86	0.85
Flt Protected		1.00	1.00		1.00	1.00
Satd. Flow (prot)		3597	3349		1750	1638
Flt Permitted		1.00	1.00		1.00	1.00
Satd. Flow (perm)		3597	3349		1750	1638
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	431	772	0	26	501
RTOR Reduction (vph)	0	0	0	0	95	95
Lane Group Flow (vph)	0	431	772	0	171	166
Heavy Vehicles (%)	0%	8%	16%	0%	0%	3%
Turn Type		NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases						4
Actuated Green, G (s)		45.0	45.0		30.0	30.0
Effective Green, g (s)		45.0	45.0		30.0	30.0
Actuated g/C Ratio		0.50	0.50		0.33	0.33
Clearance Time (s)		7.7	7.7		7.2	7.2
Vehicle Extension (s)		4.0	4.0		3.0	3.0
Lane Grp Cap (vph)		1800	1676		583	546
v/s Ratio Prot		0.12	c0.23		0.10	
v/s Ratio Perm						c0.10
v/c Ratio		0.24	0.46		0.29	0.30
Uniform Delay, d1		12.7	14.6		22.1	22.2
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.3	0.9		1.3	1.4
Delay (s)		13.1	15.5		23.4	23.6
Level of Service		B	B		C	C
Approach Delay (s)		13.1	15.5		23.5	
Approach LOS		B	B		C	
Intersection Summary						
HCM 2000 Control Delay			17.3		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.40			
Actuated Cycle Length (s)			89.9		Sum of lost time (s)	14.9
Intersection Capacity Utilization			55.7%		ICU Level of Service	B
Analysis Period (min)			15			

c Critical Lane Group

Lanes, Volumes, Timings

5: Green Lane East & Highway 404 East-South On-Ramp

10/04/2024



Lane Group	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations		↑↑	↑↑	↗		
Traffic Volume (vph)	0	16	73	0	0	0
Future Volume (vph)	0	16	73	0	0	0
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Width (m)	3.8	3.8	3.8	3.8	3.7	3.7
Storage Length (m)	0.0			70.0	0.0	0.0
Storage Lanes	0			0	0	0
Taper Length (m)	7.6				7.6	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	0	3808	3808	2004	0	0
Flt Permitted						
Satd. Flow (perm)	0	3808	3808	2004	0	0
Link Speed (k/h)		70	70		30	
Link Distance (m)		111.8	136.3		95.7	
Travel Time (s)		5.7	7.0		11.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	17	79	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	17	79	0	0	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		0.0	
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	0.91	0.91	0.91	0.91	0.92	0.92
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Pretimed					
Intersection Capacity Utilization	55.7%			ICU Level of Service B		
Analysis Period (min)	15					

Lanes, Volumes, Timings

6: Highway 404 West-North On-Ramp & Green Lane East

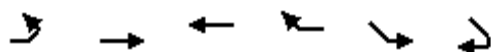
10/04/2024

						
Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑↑	↑		↑↑		
Traffic Volume (vph)	0	16	0	78	0	0
Future Volume (vph)	0	16	0	78	0	0
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Width (m)	3.8	4.0	3.7	3.7	3.7	3.7
Storage Length (m)		15.0	0.0		0.0	0.0
Storage Lanes		1	0		0	0
Taper Length (m)			7.6		7.6	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt		0.850				
Flt Protected						
Satd. Flow (prot)	3808	1741	0	3767	0	0
Flt Permitted						
Satd. Flow (perm)	3808	1741	0	3767	0	0
Link Speed (k/h)	70			70	30	
Link Distance (m)	136.3			93.2	107.1	
Travel Time (s)	7.0			4.8	12.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	17	0	85	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	17	0	85	0	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	0.0	
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	0.91	0.88	0.92	0.92	0.92	0.92
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Pretimed					
Intersection Capacity Utilization 6.7%	ICU Level of Service A					
Analysis Period (min) 15						

Lanes, Volumes, Timings

7: Green Lane East & Highway 404 East-North On-Ramp

10/04/2024



Lane Group	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations		↑↑	↑↑	↗		
Traffic Volume (vph)	0	0	73	4	0	0
Future Volume (vph)	0	0	73	4	0	0
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt				0.850		
Flt Protected						
Satd. Flow (prot)	0	3767	3767	1719	0	0
Flt Permitted						
Satd. Flow (perm)	0	3767	3767	1719	0	0
Link Speed (k/h)		70	48		40	
Link Distance (m)		93.2	36.9		98.9	
Travel Time (s)		4.8	2.8		8.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	0%	2%	2%
Adj. Flow (vph)	0	0	79	4	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	79	4	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.8	3.8		0.0	
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	0.92	0.92	0.92	0.92	0.92	0.92
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Pretimed					
Intersection Capacity Utilization	6.7%			ICU Level of Service A		
Analysis Period (min)	15					

Lanes, Volumes, Timings

8: Highway 404 South-East/West Off-Ramp/Carpool Parking Lot Access & Green Lane East

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	283	0	0	272	0	477	4	40	0	0	7
Future Volume (vph)	8	283	0	0	272	0	477	4	40	0	0	7
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width (m)	3.8	3.8	3.8	3.8	3.8	3.8	3.8	4.0	4.0	4.0	4.0	4.0
Storage Length (m)	20.0		0.0	0.0		20.0	0.0		60.0	0.0		0.0
Storage Lanes	1		0	0		0	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91	0.91	0.95	0.95	1.00	1.00	1.00	1.00
Fr't									0.850			0.850
Flt Protected	0.950						0.950	0.953				
Satd. Flow (prot)	1719	3665	0	0	4770	0	1619	1662	1420	2089	0	1544
Flt Permitted	0.507						0.950	0.953				
Satd. Flow (perm)	917	3665	0	0	4770	0	1619	1662	1420	2089	0	1544
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)									111			324
Link Speed (k/h)		70			70			60			40	
Link Distance (m)		36.9			312.7			301.6			147.9	
Travel Time (s)		1.9			16.1			18.1			13.3	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	13%	6%	0%	0%	17%	0%	14%	0%	25%	0%	0%	15%
Adj. Flow (vph)	9	304	0	0	292	0	513	4	43	0	0	8
Shared Lane Traffic (%)							50%					
Lane Group Flow (vph)	9	304	0	0	292	0	256	261	43	0	0	8
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)		3.8			3.8			4.0			4.0	
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	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.88	0.88	0.88	0.88	0.88
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2			2		1	2	1	1		1
Detector Template	Left	Thru			Thru		Left	Thru	Right	Left		Right
Leading Detector (m)	6.1	30.5			30.5		6.1	30.5	6.1	6.1		6.1
Trailing Detector (m)	0.0	0.0			0.0		0.0	0.0	0.0	0.0		0.0
Detector 1 Position(m)	0.0	0.0			0.0		0.0	0.0	0.0	0.0		0.0
Detector 1 Size(m)	6.1	1.8			1.8		6.1	1.8	6.1	6.1		6.1
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0	0.0	0.0		0.0
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0	0.0	0.0		0.0
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0	0.0	0.0		0.0
Detector 2 Position(m)		28.7			28.7			28.7				
Detector 2 Size(m)		1.8			1.8			1.8				
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	pm+pt	NA			NA		Split	NA	Perm	Prot		Prot

Lanes, Volumes, Timings

8: Highway 404 South-East/West Off-Ramp/Carpool Parking Lot Access & Green Lane East

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	5	2			6		8	8		7		7
Permitted Phases	2								8			
Detector Phase	5	2			6		8	8	8	7		7
Switch Phase												
Minimum Initial (s)	7.0	20.0			20.0		10.0	10.0	10.0	10.0		10.0
Minimum Split (s)	11.0	41.0			41.0		40.5	40.5	40.5	17.5		17.5
Total Split (s)	19.0	74.0			55.0		57.5	57.5	57.5	30.5		30.5
Total Split (%)	11.7%	45.7%			34.0%		35.5%	35.5%	35.5%	18.8%		18.8%
Maximum Green (s)	15.0	66.0			47.0		50.0	50.0	50.0	23.0		23.0
Yellow Time (s)	3.0	5.0			5.0		4.5	4.5	4.5	4.5		4.5
All-Red Time (s)	1.0	3.0			3.0		3.0	3.0	3.0	3.0		3.0
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	4.0	8.0			8.0		7.5	7.5	7.5	7.5		7.5
Lead/Lag	Lead				Lag		Lag	Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	Yes				Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	4.0			4.0		3.0	3.0	3.0	3.0		3.0
Recall Mode	None	Ped			Ped		None	None	None	None		None
Walk Time (s)		7.0			7.0		7.0	7.0	7.0			
Flash Dont Walk (s)		26.0			26.0		26.0	26.0	26.0			
Pedestrian Calls (#/hr)		0			0		0	0	0			
Act Effct Green (s)	40.2	36.0			34.6		17.2	17.2	17.2			10.5
Actuated g/C Ratio	0.56	0.50			0.48		0.24	0.24	0.24			0.15
v/c Ratio	0.02	0.17			0.13		0.66	0.66	0.10			0.02
Control Delay	11.5	12.1			14.0		34.7	34.3	0.5			0.0
Queue Delay	0.0	0.0			0.0		0.0	0.0	0.0			0.0
Total Delay	11.5	12.1			14.0		34.7	34.3	0.5			0.0
LOS	B	B			B		C	C	A			A
Approach Delay		12.1			14.0			31.9				
Approach LOS		B			B			C				

Intersection Summary

Area Type: Other

Cycle Length: 162

Actuated Cycle Length: 71.8

Natural Cycle: 110

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.66

Intersection Signal Delay: 21.9

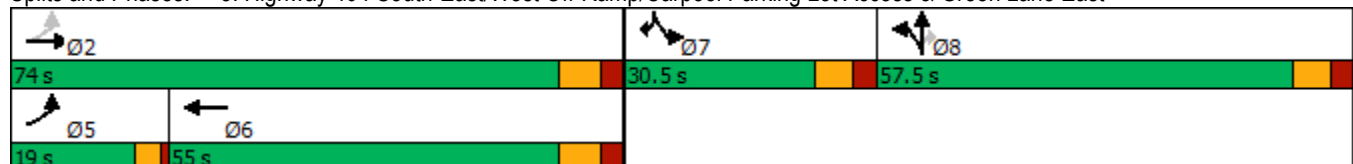
Intersection LOS: C

Intersection Capacity Utilization 56.8%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 8: Highway 404 South-East/West Off-Ramp/Carpool Parking Lot Access & Green Lane East



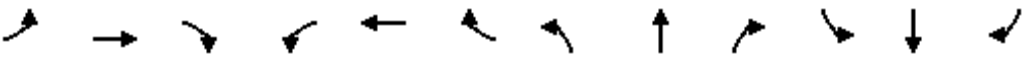
Queues

8: Highway 404 South-East/West Off-Ramp/Carpool Parking Lot Access & Green Lane East

							
Lane Group	EBL	EBT	WBT	NBL	NBT	NBR	SBR
Lane Group Flow (vph)	9	304	292	256	261	43	8
v/c Ratio	0.02	0.17	0.13	0.66	0.66	0.10	0.02
Control Delay	11.5	12.1	14.0	34.7	34.3	0.5	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.5	12.1	14.0	34.7	34.3	0.5	0.0
Queue Length 50th (m)	0.4	9.4	6.1	28.7	29.2	0.0	0.0
Queue Length 95th (m)	3.9	30.1	23.4	75.1	76.2	0.0	0.0
Internal Link Dist (m)		12.9	288.7		277.6		
Turn Bay Length (m)	20.0					60.0	
Base Capacity (vph)	689	3381	3270	1180	1212	1065	733
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	0.01	0.09	0.09	0.22	0.22	0.04	0.01
Intersection Summary							

HCM Signalized Intersection Capacity Analysis

8: Highway 404 South-East/West Off-Ramp/Carpool Parking Lot Access & Green Lane East

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	283	0	0	272	0	477	4	40	0	0	7
Future Volume (vph)	8	283	0	0	272	0	477	4	40	0	0	7
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width	3.8	3.8	3.8	3.8	3.8	3.8	3.8	4.0	4.0	4.0	4.0	4.0
Total Lost time (s)	4.0	8.0			8.0		7.5	7.5	7.5			7.5
Lane Util. Factor	1.00	0.95			0.91		0.95	0.95	1.00			1.00
Frt	1.00	1.00			1.00		1.00	1.00	0.85			0.85
Flt Protected	0.95	1.00			1.00		0.95	0.95	1.00			1.00
Satd. Flow (prot)	1719	3665			4770		1619	1662	1420			1544
Flt Permitted	0.51	1.00			1.00		0.95	0.95	1.00			1.00
Satd. Flow (perm)	918	3665			4770		1619	1662	1420			1544
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	9	304	0	0	292	0	513	4	43	0	0	8
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	34	0	0	8
Lane Group Flow (vph)	9	304	0	0	292	0	256	261	9	0	0	0
Heavy Vehicles (%)	13%	6%	0%	0%	17%	0%	14%	0%	25%	0%	0%	15%
Turn Type	pm+pt	NA			NA		Split	NA	Perm	Prot		Prot
Protected Phases	5	2			6		8	8		7		7
Permitted Phases	2								8			
Actuated Green, G (s)	39.4	39.4			34.5		17.2	17.2	17.2			1.3
Effective Green, g (s)	39.4	39.4			34.5		17.2	17.2	17.2			1.3
Actuated g/C Ratio	0.49	0.49			0.43		0.21	0.21	0.21			0.02
Clearance Time (s)	4.0	8.0			8.0		7.5	7.5	7.5			7.5
Vehicle Extension (s)	3.0	4.0			4.0		3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	455	1784			2034		344	353	301			24
v/s Ratio Prot	0.00	c0.08			0.06		c0.16	0.16				c0.00
v/s Ratio Perm	0.01								0.01			
v/c Ratio	0.02	0.17			0.14		0.74	0.74	0.03			0.01
Uniform Delay, d1	10.8	11.6			14.2		29.8	29.8	25.2			39.2
Progression Factor	1.00	1.00			1.00		1.00	1.00	1.00			1.00
Incremental Delay, d2	0.0	0.1			0.0		8.5	7.9	0.0			0.1
Delay (s)	10.8	11.7			14.2		38.2	37.6	25.3			39.3
Level of Service	B	B			B		D	D	C			D
Approach Delay (s)		11.6			14.2			37.0			39.3	
Approach LOS		B			B			D			D	
Intersection Summary												
HCM 2000 Control Delay			24.6				HCM 2000 Level of Service		C			
HCM 2000 Volume to Capacity ratio			0.36									
Actuated Cycle Length (s)			80.9				Sum of lost time (s)		27.0			
Intersection Capacity Utilization			56.8%				ICU Level of Service		B			
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings

101: Leslie Street & Industrial Development Site Access

10/04/2024



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	358	0	0	783
Future Volume (vph)	0	0	358	0	0	783
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1983	0	1983	0	0	1983
Flt Permitted						
Satd. Flow (perm)	1983	0	1983	0	0	1983
Link Speed (k/h)	30		60			60
Link Distance (m)	318.5		282.0			250.3
Travel Time (s)	38.2		16.9			15.0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	0	381	0	0	833
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	381	0	0	833
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		3.6			3.6
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	0.92	0.92	0.92	0.92	0.92	0.92
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 42.5%			ICU Level of Service A			
Analysis Period (min) 15						

HCM Unsignalized Intersection Capacity Analysis

101: Leslie Street & Industrial Development Site Access

10/04/2024

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	358	0	0	783
Future Volume (Veh/h)	0	0	358	0	0	783
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	0	381	0	0	833
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)			282			
pX, platoon unblocked	0.91	0.91			0.91	
vC, conflicting volume	1214	381			381	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1185	267			267	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	190	700			1177	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	0	381	833			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1700	1177			
Volume to Capacity	0.00	0.22	0.00			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			42.5%	ICU Level of Service		A
Analysis Period (min)			15			

Lanes, Volumes, Timings
102: Extension of HWP & Site Access

10/04/2024

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	25	68	45	16	0
Future Volume (vph)	0	25	68	45	16	0
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865					
Flt Protected				0.971		
Satd. Flow (prot)	1715	0	0	1925	1983	0
Flt Permitted				0.971		
Satd. Flow (perm)	1715	0	0	1925	1983	0
Link Speed (k/h)	30			50	50	
Link Distance (m)	73.6			84.4	135.0	
Travel Time (s)	8.8			6.1	9.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	27	74	49	17	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	27	0	0	123	17	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	0.92	0.92	0.92	0.92	0.92	0.92
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	22.5%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis

102: Extension of HWP & Site Access

10/04/2024

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	25	68	45	16	0
Future Volume (Veh/h)	0	25	68	45	16	0
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)	0	27	74	49	17	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (m)				84		
pX, platoon unblocked						
vC, conflicting volume	214	17	17			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	214	17	17			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	97	95			
cM capacity (veh/h)	738	1062	1600			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	27	123	17			
Volume Left	0	74	0			
Volume Right	27	0	0			
cSH	1062	1600	1700			
Volume to Capacity	0.03	0.05	0.01			
Queue Length 95th (m)	0.6	1.1	0.0			
Control Delay (s)	8.5	4.6	0.0			
Lane LOS	A	A				
Approach Delay (s)	8.5	4.6	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			4.7			
Intersection Capacity Utilization		22.5%		ICU Level of Service		A
Analysis Period (min)		15				

Lanes, Volumes, Timings
1: Leslie Street & Green Lane East

10/04/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	77	1178	490	106	816	104	212	284	92	307	477	69
Future Volume (vph)	77	1178	490	106	816	104	212	284	92	307	477	69
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width (m)	3.5	3.6	3.3	3.7	3.7	3.5	4.8	3.6	3.8	3.6	3.8	3.3
Storage Length (m)	125.0		70.0	185.0		85.0	55.0		35.0	85.0		35.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	1.00		0.98	1.00		0.98	1.00		0.98	0.99		0.99
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1824	3619	1508	1830	3525	1303	2031	3725	1738	1881	3808	1643
Flt Permitted	0.269			0.125			0.225			0.531		
Satd. Flow (perm)	516	3619	1485	241	3525	1284	481	3725	1704	1046	3808	1622
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			328			145			114			141
Link Speed (k/h)		70			70			60			60	
Link Distance (m)		324.4			502.9			426.7			282.0	
Travel Time (s)		16.7			25.9			25.6			16.9	
Confl. Peds. (#/hr)	2		2	2		2	1		6	6		1
Confl. Bikes (#/hr)			1			1						
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	3%	5%	9%	5%	9%	29%	6%	2%	0%	1%	2%	0%
Adj. Flow (vph)	79	1202	500	108	833	106	216	290	94	313	487	70
Shared Lane Traffic (%)												
Lane Group Flow (vph)	79	1202	500	108	833	106	216	290	94	313	487	70
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			4.8			4.8	
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	0.95	0.94	0.98	0.92	0.92	0.95	0.79	0.94	0.91	0.94	0.91	0.98
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lanes, Volumes, Timings

1: Leslie Street & Green Lane East

10/04/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6		6	2		2	8		8	4		4
Detector Phase	1	6	6	5	2	2	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	7.0	30.0	30.0	7.0	30.0	30.0	7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	11.0	44.5	44.5	11.0	44.5	44.5	11.0	45.0	45.0	11.0	45.0	45.0
Total Split (s)	24.0	77.5	77.5	19.0	72.5	72.5	24.0	43.0	43.0	19.0	38.0	38.0
Total Split (%)	15.1%	48.9%	48.9%	12.0%	45.7%	45.7%	15.1%	27.1%	27.1%	12.0%	24.0%	24.0%
Maximum Green (s)	20.0	70.0	70.0	15.0	65.0	65.0	20.0	35.0	35.0	15.0	30.0	30.0
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	4.5	4.5	3.0	4.5	4.5
All-Red Time (s)	1.0	2.5	2.5	1.0	2.5	2.5	1.0	3.5	3.5	1.0	3.5	3.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	7.5	7.5	4.0	7.5	7.5	4.0	8.0	8.0	4.0	8.0	8.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		30.0	30.0		30.0	30.0		30.0	30.0		30.0	30.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	82.2	70.3	70.3	84.7	71.6	71.6	45.0	24.9	24.9	42.8	23.7	23.7
Actuated g/C Ratio	0.57	0.49	0.49	0.59	0.50	0.50	0.31	0.17	0.17	0.30	0.17	0.17
v/c Ratio	0.21	0.68	0.56	0.44	0.47	0.15	0.66	0.45	0.24	0.78	0.78	0.18
Control Delay	14.4	31.8	11.6	18.5	25.8	1.5	45.7	55.0	6.2	55.7	66.8	1.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.4	31.8	11.6	18.5	25.8	1.5	45.7	55.0	6.2	55.7	66.8	1.0
LOS	B	C	B	B	C	A	D	D	A	E	E	A
Approach Delay		25.3			22.6			44.0			57.5	
Approach LOS		C			C			D			E	

Intersection Summary

Area Type: Other

Cycle Length: 158.5

Actuated Cycle Length: 143.5

Natural Cycle: 115

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.78

Intersection Signal Delay: 33.8

Intersection LOS: C

Intersection Capacity Utilization 84.9%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 1: Leslie Street & Green Lane East



FT_AM_2034 2:07 pm 08/21/2024 Baseline

Synchro 11 Report

Page 2

Queues

1: Leslie Street & Green Lane East

10/04/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	79	1202	500	108	833	106	216	290	94	313	487	70
v/c Ratio	0.21	0.68	0.56	0.44	0.47	0.15	0.66	0.45	0.24	0.78	0.78	0.18
Control Delay	14.4	31.8	11.6	18.5	25.8	1.5	45.7	55.0	6.2	55.7	66.8	1.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.4	31.8	11.6	18.5	25.8	1.5	45.7	55.0	6.2	55.7	66.8	1.0
Queue Length 50th (m)	8.9	136.5	31.1	12.4	81.0	0.0	45.5	39.1	0.0	70.6	70.5	0.0
Queue Length 95th (m)	18.3	187.4	73.5	23.9	113.6	3.9	68.4	54.5	10.0	#101.7	94.3	0.0
Internal Link Dist (m)	300.4				478.9				402.7		258.0	
Turn Bay Length (m)	125.0			70.0	185.0			85.0	55.0			35.0
Base Capacity (vph)	497	1772	894	313	1757	712	377	912	503	399	799	452
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.68	0.56	0.35	0.47	0.15	0.57	0.32	0.19	0.78	0.61	0.15

Intersection Summary

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

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

1: Leslie Street & Green Lane East

10/04/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 			 	
Traffic Volume (vph)	77	1178	490	106	816	104	212	284	92	307	477	69
Future Volume (vph)	77	1178	490	106	816	104	212	284	92	307	477	69
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width	3.5	3.6	3.3	3.7	3.7	3.5	4.8	3.6	3.8	3.6	3.8	3.3
Total Lost time (s)	4.0	7.5	7.5	4.0	7.5	7.5	4.0	8.0	8.0	4.0	8.0	8.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1824	3619	1485	1830	3525	1284	2031	3725	1705	1877	3808	1622
Flt Permitted	0.27	1.00	1.00	0.13	1.00	1.00	0.23	1.00	1.00	0.53	1.00	1.00
Satd. Flow (perm)	516	3619	1485	241	3525	1284	481	3725	1705	1049	3808	1622
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	79	1202	500	108	833	106	216	290	94	313	487	70
RTOR Reduction (vph)	0	0	167	0	0	53	0	0	78	0	0	58
Lane Group Flow (vph)	79	1202	333	108	833	53	216	290	16	313	487	12
Confl. Peds. (#/hr)	2		2	2		2	1		6	6		1
Confl. Bikes (#/hr)			1			1						
Heavy Vehicles (%)	3%	5%	9%	5%	9%	29%	6%	2%	0%	1%	2%	0%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6		6	2		2	8		8	4		4
Actuated Green, G (s)	78.8	70.4	70.4	81.2	71.6	71.6	41.2	24.9	24.9	38.8	23.7	23.7
Effective Green, g (s)	78.8	70.4	70.4	81.2	71.6	71.6	41.2	24.9	24.9	38.8	23.7	23.7
Actuated g/C Ratio	0.55	0.49	0.49	0.57	0.50	0.50	0.29	0.17	0.17	0.27	0.17	0.17
Clearance Time (s)	4.0	7.5	7.5	4.0	7.5	7.5	4.0	8.0	8.0	4.0	8.0	8.0
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	359	1775	728	242	1758	640	314	646	295	370	628	267
v/s Ratio Prot	0.01	c0.33		c0.03	0.24		0.08	0.08		c0.09	0.13	
v/s Ratio Perm	0.11		0.22	0.22		0.04	0.12		0.01	c0.14		0.01
v/c Ratio	0.22	0.68	0.46	0.45	0.47	0.08	0.69	0.45	0.06	0.85	0.78	0.04
Uniform Delay, d1	16.1	27.9	24.0	19.5	23.6	18.8	41.6	53.2	49.5	46.9	57.4	50.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.3	2.1	2.1	1.3	0.9	0.3	6.1	0.5	0.1	16.1	6.0	0.1
Delay (s)	16.4	30.0	26.1	20.8	24.5	19.0	47.7	53.6	49.6	63.0	63.3	50.4
Level of Service	B	C	C	C	C	B	D	D	D	E	E	D
Approach Delay (s)		28.3			23.6			50.9			62.2	
Approach LOS		C			C			D			E	
Intersection Summary												
HCM 2000 Control Delay			37.1				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.71									
Actuated Cycle Length (s)			143.5				Sum of lost time (s)			23.5		
Intersection Capacity Utilization			84.9%				ICU Level of Service			E		
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings

2: Harry Walker Parkway/Extension of HWP & Green Lane East

10/04/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	31	1411	197	192	968	90	34	20	42	48	0	5
Future Volume (vph)	31	1411	197	192	968	90	34	20	42	48	0	5
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width (m)	3.7	3.8	3.8	3.3	3.7	3.7	3.0	3.7	3.0	3.7	3.7	3.7
Storage Length (m)	65.0		65.0	50.0		30.0	0.0		0.0	60.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	7.6			7.6			7.6			2.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr't			0.850			0.850		0.898			0.850	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1921	3735	1671	1766	3461	1719	1430	1680	0	1921	1719	0
Flt Permitted	0.284			0.108			0.588					
Satd. Flow (perm)	574	3735	1671	201	3461	1719	885	1680	0	2022	1719	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			119			62		44			181	
Link Speed (k/h)		70			70			50			50	
Link Distance (m)		502.9			92.9			200.4			84.4	
Travel Time (s)		25.9			4.8			14.4			6.1	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	4%	4%	4%	11%	0%	24%	0%	12%	0%	0%	0%
Adj. Flow (vph)	32	1470	205	200	1008	94	35	21	44	50	0	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	32	1470	205	200	1008	94	35	65	0	50	5	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)		4.9			4.9			4.9			1.6	
Two way Left Turn Lane												
Headway Factor	0.92	0.91	0.91	0.98	0.92	0.92	1.02	0.92	1.02	0.92	0.92	0.92
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		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	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	

Lanes, Volumes, Timings

2: Harry Walker Parkway/Extension of HWP & Green Lane East

10/04/2024

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		6		5	2		3	8		7	4	
Permitted Phases	6		6	2		2	8			4		
Detector Phase	6	6	6	5	2	2	3	8		7	4	
Switch Phase												
Minimum Initial (s)	30.0	30.0	30.0	7.0	30.0	30.0	5.0	10.0		7.0	5.0	
Minimum Split (s)	37.5	37.5	37.5	11.0	37.5	37.5	9.5	32.0		11.0	25.0	
Total Split (s)	81.0	81.0	81.0	26.0	107.0	107.0	9.6	32.0		11.0	33.4	
Total Split (%)	54.0%	54.0%	54.0%	17.3%	71.3%	71.3%	6.4%	21.3%		7.3%	22.3%	
Maximum Green (s)	73.5	73.5	73.5	22.0	99.5	99.5	5.1	25.0		7.0	26.4	
Yellow Time (s)	5.0	5.0	5.0	3.0	5.0	5.0	3.5	4.0		3.0	4.0	
All-Red Time (s)	2.5	2.5	2.5	1.0	2.5	2.5	1.0	3.0		1.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.5	7.5	7.5	4.0	7.5	7.5	4.5	7.0		4.0	7.0	
Lead/Lag	Lag	Lag	Lag	Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	0.2	0.2	0.2	3.0	0.2	0.2	3.0	0.2		3.0	3.0	
Recall Mode	C-Max	C-Max	C-Max	None	C-Max	C-Max	None	None		None	None	
Walk Time (s)	7.0	7.0	7.0		0.0	0.0		7.0			7.0	
Flash Dont Walk (s)	19.0	19.0	19.0		0.0	0.0		18.0			11.0	
Pedestrian Calls (#/hr)	0	0	0		0	0		0			0	
Act Effct Green (s)	100.2	100.2	100.2	123.6	121.6	121.6	18.6	10.0		9.9	6.7	
Actuated g/C Ratio	0.67	0.67	0.67	0.82	0.81	0.81	0.12	0.07		0.07	0.04	
v/c Ratio	0.08	0.59	0.18	0.60	0.36	0.07	0.21	0.42		0.39	0.02	
Control Delay	13.5	17.5	5.8	18.3	5.5	1.9	58.8	36.5		73.4	0.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	13.5	17.5	5.8	18.3	5.5	1.9	58.8	36.5		73.4	0.2	
LOS	B	B	A	B	A	A	E	D		E	A	
Approach Delay		16.0			7.2			44.3			66.8	
Approach LOS		B			A			D			E	

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

Natural Cycle: 95

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.60

Intersection Signal Delay: 14.1

Intersection LOS: B

Intersection Capacity Utilization 77.9%

ICU Level of Service D

Analysis Period (min) 15

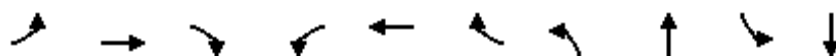
Splits and Phases: 2: Harry Walker Parkway/Extension of HWP & Green Lane East



Queues

2: Harry Walker Parkway/Extension of HWP & Green Lane East

10/04/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	32	1470	205	200	1008	94	35	65	50	5
v/c Ratio	0.08	0.59	0.18	0.60	0.36	0.07	0.21	0.42	0.39	0.02
Control Delay	13.5	17.5	5.8	18.3	5.5	1.9	58.8	36.5	73.4	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.5	17.5	5.8	18.3	5.5	1.9	58.8	36.5	73.4	0.2
Queue Length 50th (m)	3.6	133.8	9.5	12.4	46.6	2.0	9.1	6.0	14.9	0.0
Queue Length 95th (m)	9.7	179.2	23.0	37.9	55.5	6.1	20.2	21.6	25.5	0.0
Internal Link Dist (m)		478.9			68.9			176.4		60.4
Turn Bay Length (m)	65.0		65.0	50.0		30.0			60.0	
Base Capacity (vph)	383	2494	1155	399	2805	1405	168	316	128	451
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.59	0.18	0.50	0.36	0.07	0.21	0.21	0.39	0.01
Intersection Summary										

HCM Signalized Intersection Capacity Analysis

2: Harry Walker Parkway/Extension of HWP & Green Lane East

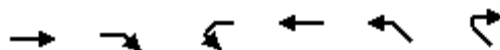
10/04/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 							
Traffic Volume (vph)	31	1411	197	192	968	90	34	20	42	48	0	5
Future Volume (vph)	31	1411	197	192	968	90	34	20	42	48	0	5
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width	3.7	3.8	3.8	3.3	3.7	3.7	3.0	3.7	3.0	3.7	3.7	3.7
Total Lost time (s)	7.5	7.5	7.5	4.0	7.5	7.5	4.5	7.0		4.0	7.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.90		1.00	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1921	3735	1671	1766	3461	1719	1430	1680		1921	1719	
Flt Permitted	0.28	1.00	1.00	0.11	1.00	1.00	0.59	1.00		1.00	1.00	
Satd. Flow (perm)	575	3735	1671	200	3461	1719	886	1680		2022	1719	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	32	1470	205	200	1008	94	35	21	44	50	0	5
RTOR Reduction (vph)	0	0	45	0	0	15	0	40	0	0	5	0
Lane Group Flow (vph)	32	1470	160	200	1008	79	35	25	0	50	0	0
Heavy Vehicles (%)	0%	4%	4%	4%	11%	0%	24%	0%	12%	0%	0%	0%
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases		6		5	2		3	8		7	4	
Permitted Phases	6		6	2		2	8			4		
Actuated Green, G (s)	93.7	93.7	93.7	113.6	113.6	113.6	21.9	12.3		7.9	2.3	
Effective Green, g (s)	93.7	93.7	93.7	113.6	113.6	113.6	21.9	12.3		7.9	2.3	
Actuated g/C Ratio	0.62	0.62	0.62	0.76	0.76	0.76	0.15	0.08		0.05	0.02	
Clearance Time (s)	7.5	7.5	7.5	4.0	7.5	7.5	4.5	7.0		4.0	7.0	
Vehicle Extension (s)	0.2	0.2	0.2	3.0	0.2	0.2	3.0	0.2		3.0	3.0	
Lane Grp Cap (vph)	359	2333	1043	317	2621	1301	184	137		102	26	
v/s Ratio Prot		0.39		c0.07	0.29		c0.02	0.01		c0.02	0.00	
v/s Ratio Perm	0.06		0.10	c0.41		0.05	0.01			c0.01		
v/c Ratio	0.09	0.63	0.15	0.63	0.38	0.06	0.19	0.18		0.49	0.00	
Uniform Delay, d1	11.2	17.4	11.7	17.7	6.2	4.6	56.1	64.1		69.1	72.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.5	1.3	0.3	4.1	0.4	0.1	0.5	0.2		3.7	0.0	
Delay (s)	11.7	18.7	12.0	21.8	6.7	4.7	56.6	64.4		72.8	72.8	
Level of Service	B	B	B	C	A	A	E	E		E	E	
Approach Delay (s)		17.8			8.8			61.7			72.8	
Approach LOS		B			A			E			E	
Intersection Summary												
HCM 2000 Control Delay			16.4				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.60									
Actuated Cycle Length (s)			150.0				Sum of lost time (s)			23.0		
Intersection Capacity Utilization			77.9%				ICU Level of Service			D		
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings

3: Highway 404 West-South On-ramp & Green Lane East

10/04/2024

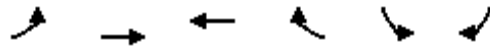


Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑↑	↑		↑↑		
Traffic Volume (vph)	16	23	0	90	0	0
Future Volume (vph)	16	23	0	90	0	0
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Width (m)	3.8	4.2	3.8	3.8	3.7	3.7
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	0.850					
Flt Protected						
Satd. Flow (prot)	3808	1778	0	3808	0	0
Flt Permitted						
Satd. Flow (perm)	3808	1778	0	3808	0	0
Link Speed (k/h)	70			70	60	
Link Distance (m)	92.9			303.3	172.8	
Travel Time (s)	4.8			15.6	10.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	17	25	0	98	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	17	25	0	98	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.3			3.3	0.0	
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	0.91	0.86	0.91	0.91	0.92	0.92
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Pretimed					
Intersection Capacity Utilization	6.7%			ICU Level of Service A		
Analysis Period (min)	15					

Lanes, Volumes, Timings

4: Green Lane East & Highway 404 North-East/West Off-Ramp

10/04/2024

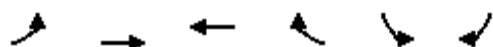


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↘↘	↗
Traffic Volume (vph)	0	441	782	0	26	511
Future Volume (vph)	0	441	782	0	26	511
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Width (m)	3.8	3.8	3.8	3.8	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	0.95
Frt					0.864	0.850
Flt Protected					0.995	
Satd. Flow (prot)	0	3597	3349	0	1748	1638
Flt Permitted					0.995	
Satd. Flow (perm)	0	3597	3349	0	1748	1638
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)					118	118
Link Speed (k/h)		70	70		60	
Link Distance (m)		303.3	111.8		268.4	
Travel Time (s)		15.6	5.7		16.1	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	8%	16%	0%	0%	3%
Adj. Flow (vph)	0	474	841	0	28	549
Shared Lane Traffic (%)						48%
Lane Group Flow (vph)	0	474	841	0	292	285
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		4.0	
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	0.91	0.91	0.91	0.91	0.88	0.88
Turning Speed (k/h)	24			14	24	14
Number of Detectors		2	2		1	1
Detector Template		Thru	Thru		Left	Right
Leading Detector (m)		30.5	30.5		6.1	6.1
Trailing Detector (m)		0.0	0.0		0.0	0.0
Detector 1 Position(m)		0.0	0.0		0.0	0.0
Detector 1 Size(m)		1.8	1.8		6.1	6.1
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0
Detector 2 Position(m)		28.7	28.7			
Detector 2 Size(m)		1.8	1.8			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type		NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases						4
Detector Phase		2	6		4	4

Lanes, Volumes, Timings

4: Green Lane East & Highway 404 North-East/West Off-Ramp

10/04/2024



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Switch Phase						
Minimum Initial (s)		30.0	30.0		15.0	15.0
Minimum Split (s)		37.7	37.7		22.2	22.2
Total Split (s)		52.7	52.7		37.2	37.2
Total Split (%)		58.6%	58.6%		41.4%	41.4%
Maximum Green (s)		45.0	45.0		30.0	30.0
Yellow Time (s)		5.9	5.9		5.1	5.1
All-Red Time (s)		1.8	1.8		2.1	2.1
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		7.7	7.7		7.2	7.2
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		4.0	4.0		3.0	3.0
Recall Mode		Max	Max		Max	Max
Act Effct Green (s)		45.0	45.0		30.0	30.0
Actuated g/C Ratio		0.50	0.50		0.33	0.33
v/c Ratio		0.26	0.50		0.44	0.46
Control Delay		13.4	16.3		16.0	16.1
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		13.4	16.3		16.0	16.1
LOS		B	B		B	B
Approach Delay		13.4	16.3		16.0	
Approach LOS		B	B		B	
Intersection Summary						
Area Type:	Other					
Cycle Length: 89.9						
Actuated Cycle Length: 89.9						
Natural Cycle: 60						
Control Type: Semi Act-Uncoord						
Maximum v/c Ratio: 0.50						
Intersection Signal Delay: 15.5				Intersection LOS: B		
Intersection Capacity Utilization 57.5%				ICU Level of Service B		
Analysis Period (min) 15						

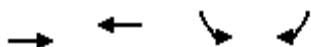
Splits and Phases: 4: Green Lane East & Highway 404 North-East/West Off-Ramp

→ Ø2	← Ø4
52.7 s	37.2 s
← Ø6	
52.7 s	

Queues

4: Green Lane East & Highway 404 North-East/West Off-Ramp

10/04/2024

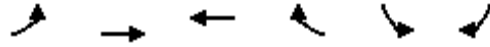


Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	474	841	292	285
v/c Ratio	0.26	0.50	0.44	0.46
Control Delay	13.4	16.3	16.0	16.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	13.4	16.3	16.0	16.1
Queue Length 50th (m)	23.6	48.5	22.0	22.3
Queue Length 95th (m)	33.0	64.3	43.8	45.5
Internal Link Dist (m)	279.3	87.8	244.4	
Turn Bay Length (m)				
Base Capacity (vph)	1800	1676	661	625
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.26	0.50	0.44	0.46
Intersection Summary				

HCM Signalized Intersection Capacity Analysis

4: Green Lane East & Highway 404 North-East/West Off-Ramp

10/04/2024

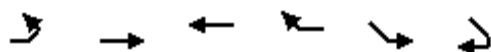


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↘↘	↗
Traffic Volume (vph)	0	441	782	0	26	511
Future Volume (vph)	0	441	782	0	26	511
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Width	3.8	3.8	3.8	3.8	4.0	4.0
Total Lost time (s)		7.7	7.7		7.2	7.2
Lane Util. Factor		0.95	0.95		1.00	0.95
Frt		1.00	1.00		0.86	0.85
Flt Protected		1.00	1.00		1.00	1.00
Satd. Flow (prot)		3597	3349		1750	1638
Flt Permitted		1.00	1.00		1.00	1.00
Satd. Flow (perm)		3597	3349		1750	1638
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	474	841	0	28	549
RTOR Reduction (vph)	0	0	0	0	79	79
Lane Group Flow (vph)	0	474	841	0	213	206
Heavy Vehicles (%)	0%	8%	16%	0%	0%	3%
Turn Type		NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases						4
Actuated Green, G (s)		45.0	45.0		30.0	30.0
Effective Green, g (s)		45.0	45.0		30.0	30.0
Actuated g/C Ratio		0.50	0.50		0.33	0.33
Clearance Time (s)		7.7	7.7		7.2	7.2
Vehicle Extension (s)		4.0	4.0		3.0	3.0
Lane Grp Cap (vph)		1800	1676		583	546
v/s Ratio Prot		0.13	c0.25		0.12	
v/s Ratio Perm						c0.13
v/c Ratio		0.26	0.50		0.37	0.38
Uniform Delay, d1		12.9	15.0		22.7	22.8
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.4	1.1		1.8	2.0
Delay (s)		13.3	16.0		24.5	24.8
Level of Service		B	B		C	C
Approach Delay (s)		13.3	16.0		24.7	
Approach LOS		B	B		C	
Intersection Summary						
HCM 2000 Control Delay			18.0		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.45			
Actuated Cycle Length (s)			89.9		Sum of lost time (s)	14.9
Intersection Capacity Utilization			57.5%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

Lanes, Volumes, Timings

5: Green Lane East & Highway 404 East-South On-Ramp

10/04/2024



Lane Group	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations		↑↑	↑↑	↗		
Traffic Volume (vph)	0	16	73	0	0	0
Future Volume (vph)	0	16	73	0	0	0
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Width (m)	3.8	3.8	3.8	3.8	3.7	3.7
Storage Length (m)	0.0			70.0	0.0	0.0
Storage Lanes	0			0	0	0
Taper Length (m)	7.6				7.6	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	0	3808	3808	2004	0	0
Flt Permitted						
Satd. Flow (perm)	0	3808	3808	2004	0	0
Link Speed (k/h)		70	70		30	
Link Distance (m)		111.8	136.3		95.7	
Travel Time (s)		5.7	7.0		11.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	17	79	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	17	79	0	0	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		0.0	
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	0.91	0.91	0.91	0.91	0.92	0.92
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Pretimed					
Intersection Capacity Utilization	57.5%			ICU Level of Service B		
Analysis Period (min)	15					

Lanes, Volumes, Timings

6: Highway 404 West-North On-Ramp & Green Lane East

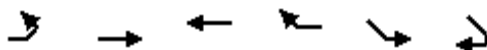
10/04/2024

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑↑	↑		↑↑		
Traffic Volume (vph)	0	16	0	78	0	0
Future Volume (vph)	0	16	0	78	0	0
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Width (m)	3.8	4.0	3.7	3.7	3.7	3.7
Storage Length (m)		15.0	0.0		0.0	0.0
Storage Lanes		1	0		0	0
Taper Length (m)			7.6		7.6	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt		0.850				
Flt Protected						
Satd. Flow (prot)	3808	1741	0	3767	0	0
Flt Permitted						
Satd. Flow (perm)	3808	1741	0	3767	0	0
Link Speed (k/h)	70			70	30	
Link Distance (m)	136.3			93.2	107.1	
Travel Time (s)	7.0			4.8	12.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	17	0	85	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	17	0	85	0	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	0.0	
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	0.91	0.88	0.92	0.92	0.92	0.92
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Pretimed					
Intersection Capacity Utilization 6.7%	ICU Level of Service A					
Analysis Period (min) 15						

Lanes, Volumes, Timings

7: Green Lane East & Highway 404 East-North On-Ramp

10/04/2024



Lane Group	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations		↑↑	↑↑	↗		
Traffic Volume (vph)	0	0	73	4	0	0
Future Volume (vph)	0	0	73	4	0	0
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt				0.850		
Flt Protected						
Satd. Flow (prot)	0	3767	3767	1719	0	0
Flt Permitted						
Satd. Flow (perm)	0	3767	3767	1719	0	0
Link Speed (k/h)		70	48		40	
Link Distance (m)		93.2	36.9		98.9	
Travel Time (s)		4.8	2.8		8.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	0%	2%	2%
Adj. Flow (vph)	0	0	79	4	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	79	4	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.8	3.8		0.0	
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	0.92	0.92	0.92	0.92	0.92	0.92
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Pretimed					
Intersection Capacity Utilization	6.7%			ICU Level of Service A		
Analysis Period (min)	15					

Lanes, Volumes, Timings

8: Highway 404 South-East/West Off-Ramp/Carpool Parking Lot Access & Green Lane East

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	312	0	0	299	0	517	4	44	0	0	7
Future Volume (vph)	8	312	0	0	299	0	517	4	44	0	0	7
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width (m)	3.8	3.8	3.8	3.8	3.8	3.8	3.8	4.0	4.0	4.0	4.0	4.0
Storage Length (m)	20.0		0.0	0.0		20.0	0.0		60.0	0.0		0.0
Storage Lanes	1		0	0		0	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91	0.91	0.95	0.95	1.00	1.00	1.00	1.00
Fr't									0.850			0.850
Flt Protected	0.950						0.950	0.953				
Satd. Flow (prot)	1719	3665	0	0	4770	0	1619	1662	1420	2089	0	1544
Flt Permitted	0.492						0.950	0.953				
Satd. Flow (perm)	890	3665	0	0	4770	0	1619	1662	1420	2089	0	1544
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)									111			298
Link Speed (k/h)		70			70			60			40	
Link Distance (m)		36.9			312.7			301.6			147.9	
Travel Time (s)		1.9			16.1			18.1			13.3	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	13%	6%	0%	0%	17%	0%	14%	0%	25%	0%	0%	15%
Adj. Flow (vph)	9	335	0	0	322	0	556	4	47	0	0	8
Shared Lane Traffic (%)							50%					
Lane Group Flow (vph)	9	335	0	0	322	0	278	282	47	0	0	8
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)		3.8			3.8			4.0			4.0	
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	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.88	0.88	0.88	0.88	0.88
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2			2		1	2	1	1		1
Detector Template	Left	Thru			Thru		Left	Thru	Right	Left		Right
Leading Detector (m)	6.1	30.5			30.5		6.1	30.5	6.1	6.1		6.1
Trailing Detector (m)	0.0	0.0			0.0		0.0	0.0	0.0	0.0		0.0
Detector 1 Position(m)	0.0	0.0			0.0		0.0	0.0	0.0	0.0		0.0
Detector 1 Size(m)	6.1	1.8			1.8		6.1	1.8	6.1	6.1		6.1
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0	0.0	0.0		0.0
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0	0.0	0.0		0.0
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0	0.0	0.0		0.0
Detector 2 Position(m)		28.7			28.7			28.7				
Detector 2 Size(m)		1.8			1.8			1.8				
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	pm+pt	NA			NA		Split	NA	Perm	Prot		Prot

Lanes, Volumes, Timings

8: Highway 404 South-East/West Off-Ramp/Carpool Parking Lot Access & Green Lane East

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	5	2			6		8	8		7		7
Permitted Phases	2								8			
Detector Phase	5	2			6		8	8	8	7		7
Switch Phase												
Minimum Initial (s)	7.0	20.0			20.0		10.0	10.0	10.0	10.0		10.0
Minimum Split (s)	11.0	41.0			41.0		40.5	40.5	40.5	17.5		17.5
Total Split (s)	19.0	74.0			55.0		57.5	57.5	57.5	30.5		30.5
Total Split (%)	11.7%	45.7%			34.0%		35.5%	35.5%	35.5%	18.8%		18.8%
Maximum Green (s)	15.0	66.0			47.0		50.0	50.0	50.0	23.0		23.0
Yellow Time (s)	3.0	5.0			5.0		4.5	4.5	4.5	4.5		4.5
All-Red Time (s)	1.0	3.0			3.0		3.0	3.0	3.0	3.0		3.0
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	4.0	8.0			8.0		7.5	7.5	7.5	7.5		7.5
Lead/Lag	Lead				Lag		Lag	Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	Yes				Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	4.0			4.0		3.0	3.0	3.0	3.0		3.0
Recall Mode	None	Ped			Ped		None	None	None	None		None
Walk Time (s)		7.0			7.0		7.0	7.0	7.0			
Flash Dont Walk (s)		26.0			26.0		26.0	26.0	26.0			
Pedestrian Calls (#/hr)		0			0		0	0	0			
Act Effct Green (s)	40.2	36.0			34.6		18.5	18.5	18.5			10.5
Actuated g/C Ratio	0.55	0.49			0.47		0.25	0.25	0.25			0.14
v/c Ratio	0.02	0.19			0.14		0.68	0.67	0.11			0.02
Control Delay	12.4	12.8			14.7		34.8	34.2	0.5			0.0
Queue Delay	0.0	0.0			0.0		0.0	0.0	0.0			0.0
Total Delay	12.4	12.8			14.7		34.8	34.2	0.5			0.0
LOS	B	B			B		C	C	A			A
Approach Delay		12.8			14.7			31.8				
Approach LOS		B			B			C				

Intersection Summary

Area Type: Other

Cycle Length: 162

Actuated Cycle Length: 73.1

Natural Cycle: 110

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.68

Intersection Signal Delay: 22.2

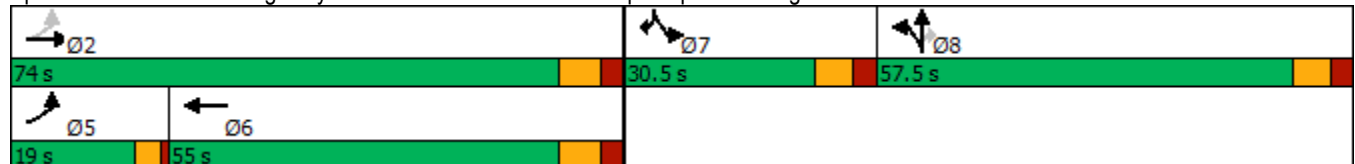
Intersection LOS: C

Intersection Capacity Utilization 57.9%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 8: Highway 404 South-East/West Off-Ramp/Carpool Parking Lot Access & Green Lane East



Queues

8: Highway 404 South-East/West Off-Ramp/Carpool Parking Lot Access & Green Lane East

							
Lane Group	EBL	EBT	WBT	NBL	NBT	NBR	SBR
Lane Group Flow (vph)	9	335	322	278	282	47	8
v/c Ratio	0.02	0.19	0.14	0.68	0.67	0.11	0.02
Control Delay	12.4	12.8	14.7	34.8	34.2	0.5	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.4	12.8	14.7	34.8	34.2	0.5	0.0
Queue Length 50th (m)	0.4	10.8	7.0	31.7	32.1	0.0	0.0
Queue Length 95th (m)	3.9	34.1	26.3	81.5	82.3	0.0	0.0
Internal Link Dist (m)		12.9	288.7		277.6		
Turn Bay Length (m)	20.0					60.0	
Base Capacity (vph)	667	3350	3211	1159	1190	1048	708
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	0.01	0.10	0.10	0.24	0.24	0.04	0.01
Intersection Summary							

HCM Signalized Intersection Capacity Analysis

8: Highway 404 South-East/West Off-Ramp/Carpool Parking Lot Access & Green Lane East

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	312	0	0	299	0	517	4	44	0	0	7
Future Volume (vph)	8	312	0	0	299	0	517	4	44	0	0	7
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width	3.8	3.8	3.8	3.8	3.8	3.8	3.8	4.0	4.0	4.0	4.0	4.0
Total Lost time (s)	4.0	8.0			8.0		7.5	7.5	7.5			7.5
Lane Util. Factor	1.00	0.95			0.91		0.95	0.95	1.00			1.00
Frt	1.00	1.00			1.00		1.00	1.00	0.85			0.85
Flt Protected	0.95	1.00			1.00		0.95	0.95	1.00			1.00
Satd. Flow (prot)	1719	3665			4770		1619	1662	1420			1544
Flt Permitted	0.49	1.00			1.00		0.95	0.95	1.00			1.00
Satd. Flow (perm)	891	3665			4770		1619	1662	1420			1544
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	9	335	0	0	322	0	556	4	47	0	0	8
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	36	0	0	8
Lane Group Flow (vph)	9	335	0	0	322	0	278	282	11	0	0	0
Heavy Vehicles (%)	13%	6%	0%	0%	17%	0%	14%	0%	25%	0%	0%	15%
Turn Type	pm+pt	NA			NA		Split	NA	Perm	Prot		Prot
Protected Phases	5	2			6		8	8		7		7
Permitted Phases	2								8			
Actuated Green, G (s)	39.5	39.5			34.6		18.5	18.5	18.5			1.3
Effective Green, g (s)	39.5	39.5			34.6		18.5	18.5	18.5			1.3
Actuated g/C Ratio	0.48	0.48			0.42		0.22	0.22	0.22			0.02
Clearance Time (s)	4.0	8.0			8.0		7.5	7.5	7.5			7.5
Vehicle Extension (s)	3.0	4.0			4.0		3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	436	1759			2005		363	373	319			24
v/s Ratio Prot	0.00	c0.09			0.07		c0.17	0.17				c0.00
v/s Ratio Perm	0.01								0.01			
v/c Ratio	0.02	0.19			0.16		0.77	0.76	0.03			0.01
Uniform Delay, d1	11.3	12.2			14.8		29.9	29.8	24.9			39.9
Progression Factor	1.00	1.00			1.00		1.00	1.00	1.00			1.00
Incremental Delay, d2	0.0	0.1			0.1		9.3	8.5	0.0			0.1
Delay (s)	11.3	12.3			14.9		39.2	38.3	25.0			40.0
Level of Service	B	B			B		D	D	C			D
Approach Delay (s)		12.3			14.9			37.6			40.0	
Approach LOS		B			B			D			D	
Intersection Summary												
HCM 2000 Control Delay			25.1				HCM 2000 Level of Service		C			
HCM 2000 Volume to Capacity ratio			0.39									
Actuated Cycle Length (s)			82.3				Sum of lost time (s)		27.0			
Intersection Capacity Utilization			57.9%				ICU Level of Service		B			
Analysis Period (min)			15									

c Critical Lane Group

Lanes, Volumes, Timings

101: Leslie Street & Industrial Development Site Access

10/04/2024

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			 			 
Traffic Volume (vph)	0	0	358	0	0	783
Future Volume (vph)	0	0	358	0	0	783
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Storage Length (m)	0.0	0.0		60.0	30.0	
Storage Lanes	1	1		1	1	
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frt						
Flt Protected						
Satd. Flow (prot)	1983	1983	3767	1983	1983	3767
Flt Permitted						
Satd. Flow (perm)	1983	1983	3767	1983	1983	3767
Link Speed (k/h)	30		60			60
Link Distance (m)	318.5		282.0			250.3
Travel Time (s)	38.2		16.9			15.0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	0	381	0	0	833
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	381	0	0	833
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		3.7			3.7
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	1.6		1.6			1.6
Two way Left Turn Lane						
Headway Factor	0.92	0.92	0.92	0.92	0.92	0.92
Turning Speed (k/h)	24	14		14	24	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	23.9%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis

101: Leslie Street & Industrial Development Site Access

10/04/2024

										
Movement	WBL	WBR	NBT	NBR	SBL	SBT				
Lane Configurations										
Traffic Volume (veh/h)	0	0	358	0	0	783				
Future Volume (Veh/h)	0	0	358	0	0	783				
Sign Control	Stop		Free			Free				
Grade	0%		0%			0%				
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94				
Hourly flow rate (vph)	0	0	381	0	0	833				
Pedestrians										
Lane Width (m)										
Walking Speed (m/s)										
Percent Blockage										
Right turn flare (veh)										
Median type			None			None				
Median storage (veh)										
Upstream signal (m)			282							
pX, platoon unblocked	0.96	0.96				0.96				
vC, conflicting volume	798	190				381				
vC1, stage 1 conf vol										
vC2, stage 2 conf vol										
vCu, unblocked vol	700	67				265				
tC, single (s)	6.8	6.9				4.1				
tC, 2 stage (s)										
tF (s)	3.5	3.3				2.2				
p0 queue free %	100	100				100				
cM capacity (veh/h)	358	942				1241				
Direction, Lane #	WB 1	WB 2	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3		
Volume Total	0	0	190	190	0	0	416	416		
Volume Left	0	0	0	0	0	0	0	0		
Volume Right	0	0	0	0	0	0	0	0		
cSH	1700	1700	1700	1700	1700	1700	1700	1700		
Volume to Capacity	0.00	0.00	0.11	0.11	0.00	0.00	0.24	0.24		
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Lane LOS	A	A								
Approach Delay (s)	0.0		0.0			0.0				
Approach LOS	A									
Intersection Summary										
Average Delay			0.0							
Intersection Capacity Utilization			23.9%			ICU Level of Service				
Analysis Period (min)			15			A				

Lanes, Volumes, Timings
102: Extension of HWP & Site Access

10/04/2024

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	25	68	45	16	0
Future Volume (vph)	0	25	68	45	16	0
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865					
Flt Protected				0.971		
Satd. Flow (prot)	1715	0	0	1925	1983	0
Flt Permitted				0.971		
Satd. Flow (perm)	1715	0	0	1925	1983	0
Link Speed (k/h)	30			50	50	
Link Distance (m)	73.6			84.4	135.0	
Travel Time (s)	8.8			6.1	9.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	27	74	49	17	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	27	0	0	123	17	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	0.92	0.92	0.92	0.92	0.92	0.92
Turning Speed (k/h)	24	14	24			14
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	22.5%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis

102: Extension of HWP & Site Access

10/04/2024

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	25	68	45	16	0
Future Volume (Veh/h)	0	25	68	45	16	0
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)	0	27	74	49	17	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (m)				84		
pX, platoon unblocked						
vC, conflicting volume	214	17	17			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	214	17	17			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	97	95			
cM capacity (veh/h)	738	1062	1600			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	27	123	17			
Volume Left	0	74	0			
Volume Right	27	0	0			
cSH	1062	1600	1700			
Volume to Capacity	0.03	0.05	0.01			
Queue Length 95th (m)	0.6	1.1	0.0			
Control Delay (s)	8.5	4.6	0.0			
Lane LOS	A	A				
Approach Delay (s)	8.5	4.6	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			4.7			
Intersection Capacity Utilization		22.5%		ICU Level of Service		A
Analysis Period (min)		15				

Lanes, Volumes, Timings
1: Leslie Street & Green Lane East

10/04/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	118	1071	429	75	1372	266	463	677	179	138	338	103
Future Volume (vph)	118	1071	429	75	1372	266	463	677	179	138	338	103
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width (m)	3.5	3.6	3.3	3.7	3.7	3.5	4.8	3.6	3.8	3.6	3.8	3.3
Storage Length (m)	125.0		70.0	185.0		85.0	55.0		35.0	85.0		35.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor			0.99	1.00		0.98			0.99	1.00		
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1860	3689	1580	1847	3730	1664	2111	3762	1721	1881	3846	1595
Flt Permitted	0.057			0.144			0.403			0.155		
Satd. Flow (perm)	112	3689	1559	280	3730	1630	896	3762	1696	307	3846	1595
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			316			173			114			141
Link Speed (k/h)		70			70			60			60	
Link Distance (m)		324.4			502.9			426.7			282.0	
Travel Time (s)		16.7			25.9			25.6			16.9	
Confl. Peds. (#/hr)			1	1					2	2		
Confl. Bikes (#/hr)						1						
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	1%	3%	4%	4%	3%	1%	2%	1%	1%	1%	1%	3%
Adj. Flow (vph)	126	1139	456	80	1460	283	493	720	190	147	360	110
Shared Lane Traffic (%)												
Lane Group Flow (vph)	126	1139	456	80	1460	283	493	720	190	147	360	110
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			4.8			4.8	
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	0.95	0.94	0.98	0.92	0.92	0.95	0.79	0.94	0.91	0.94	0.91	0.98
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lanes, Volumes, Timings

1: Leslie Street & Green Lane East

10/04/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6		6	2		2	8		8	4		4
Detector Phase	1	6	6	5	2	2	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	7.0	30.0	30.0	7.0	30.0	30.0	7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	11.0	44.5	44.5	11.0	44.5	44.5	11.0	45.0	45.0	11.0	45.0	45.0
Total Split (s)	24.0	77.5	77.5	19.0	72.5	72.5	24.0	43.0	43.0	19.0	38.0	38.0
Total Split (%)	15.1%	48.9%	48.9%	12.0%	45.7%	45.7%	15.1%	27.1%	27.1%	12.0%	24.0%	24.0%
Maximum Green (s)	20.0	70.0	70.0	15.0	65.0	65.0	20.0	35.0	35.0	15.0	30.0	30.0
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	4.5	4.5	3.0	4.5	4.5
All-Red Time (s)	1.0	2.5	2.5	1.0	2.5	2.5	1.0	3.5	3.5	1.0	3.5	3.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	-3.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	7.5	7.5	4.0	7.5	7.5	1.0	8.0	8.0	4.0	8.0	8.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		30.0	30.0		30.0	30.0		30.0	30.0		30.0	30.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	84.8	70.3	70.3	79.7	67.6	67.6	56.8	32.7	32.7	42.9	25.8	25.8
Actuated g/C Ratio	0.57	0.47	0.47	0.54	0.46	0.46	0.38	0.22	0.22	0.29	0.17	0.17
v/c Ratio	0.64	0.65	0.50	0.33	0.86	0.34	0.93	0.87	0.41	0.64	0.54	0.28
Control Delay	41.6	32.6	10.1	18.5	43.3	11.7	63.3	68.0	23.0	46.9	58.9	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.6	32.6	10.1	18.5	43.3	11.7	63.3	68.0	23.0	46.9	58.9	5.0
LOS	D	C	B	B	D	B	E	E	C	D	E	A
Approach Delay		27.3			37.3			60.3			46.4	
Approach LOS		C			D			E			D	

Intersection Summary

Area Type: Other

Cycle Length: 158.5

Actuated Cycle Length: 148.3

Natural Cycle: 115

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.93

Intersection Signal Delay: 41.0

Intersection LOS: D

Intersection Capacity Utilization 95.1%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 1: Leslie Street & Green Lane East



FT_PM_2029 3:42 pm 08/21/2024

Synchro 11 Report

Page 2

Queues

1: Leslie Street & Green Lane East

10/04/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	126	1139	456	80	1460	283	493	720	190	147	360	110
v/c Ratio	0.64	0.65	0.50	0.33	0.86	0.34	0.93	0.87	0.41	0.64	0.54	0.28
Control Delay	41.6	32.6	10.1	18.5	43.3	11.7	63.3	68.0	23.0	46.9	58.9	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.6	32.6	10.1	18.5	43.3	11.7	63.3	68.0	23.0	46.9	58.9	5.0
Queue Length 50th (m)	19.7	137.8	25.8	10.5	207.2	19.4	115.5	109.1	18.5	29.6	51.2	0.0
Queue Length 95th (m)	41.4	167.3	57.5	18.6	#271.2	43.6	#187.2	137.3	42.8	47.8	69.1	8.5
Internal Link Dist (m)	300.4				478.9				402.7		258.0	
Turn Bay Length (m)	125.0			70.0	185.0			85.0	55.0			35.0
Base Capacity (vph)	301	1749	905	318	1700	837	532	889	488	252	779	435
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.65	0.50	0.25	0.86	0.34	0.93	0.81	0.39	0.58	0.46	0.25

Intersection Summary

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

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

1: Leslie Street & Green Lane East

10/04/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	118	1071	429	75	1372	266	463	677	179	138	338	103
Future Volume (vph)	118	1071	429	75	1372	266	463	677	179	138	338	103
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width	3.5	3.6	3.3	3.7	3.7	3.5	4.8	3.6	3.8	3.6	3.8	3.3
Total Lost time (s)	4.0	7.5	7.5	4.0	7.5	7.5	1.0	8.0	8.0	4.0	8.0	8.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1860	3689	1559	1847	3730	1630	2111	3762	1696	1881	3846	1595
Flt Permitted	0.06	1.00	1.00	0.14	1.00	1.00	0.40	1.00	1.00	0.16	1.00	1.00
Satd. Flow (perm)	111	3689	1559	279	3730	1630	896	3762	1696	307	3846	1595
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	126	1139	456	80	1460	283	493	720	190	147	360	110
RTOR Reduction (vph)	0	0	166	0	0	94	0	0	89	0	0	91
Lane Group Flow (vph)	126	1139	290	80	1460	189	493	720	101	147	360	19
Confl. Peds. (#/hr)			1	1					2	2		
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	1%	3%	4%	4%	3%	1%	2%	1%	1%	1%	1%	3%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6		6	2		2	8		8	4		4
Actuated Green, G (s)	81.7	70.4	70.4	76.3	67.7	67.7	49.8	32.7	32.7	38.9	25.8	25.8
Effective Green, g (s)	81.7	70.4	70.4	76.3	67.7	67.7	52.8	32.7	32.7	38.9	25.8	25.8
Actuated g/C Ratio	0.55	0.47	0.47	0.51	0.46	0.46	0.36	0.22	0.22	0.26	0.17	0.17
Clearance Time (s)	4.0	7.5	7.5	4.0	7.5	7.5	4.0	8.0	8.0	4.0	8.0	8.0
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	194	1751	740	234	1702	744	507	829	373	219	669	277
v/s Ratio Prot	c0.05	0.31		0.02	c0.39		c0.15	c0.19		0.06	0.09	
v/s Ratio Perm	0.31		0.19	0.16		0.12	0.20		0.06	0.12		0.01
v/c Ratio	0.65	0.65	0.39	0.34	0.86	0.25	0.97	0.87	0.27	0.67	0.54	0.07
Uniform Delay, d1	33.6	29.6	25.1	21.6	36.0	24.8	42.7	55.7	47.9	44.8	55.8	51.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.3	1.9	1.6	0.9	5.8	0.8	32.7	9.6	0.4	7.8	0.8	0.1
Delay (s)	40.9	31.5	26.7	22.5	41.8	25.6	75.4	65.3	48.3	52.7	56.7	51.3
Level of Service	D	C	C	C	D	C	E	E	D	D	E	D
Approach Delay (s)		30.9			38.5			66.6			54.8	
Approach LOS		C			D			E			D	
Intersection Summary												
HCM 2000 Control Delay			45.0				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.89									
Actuated Cycle Length (s)			148.3				Sum of lost time (s)			23.5		
Intersection Capacity Utilization			95.1%				ICU Level of Service			F		
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings

2: Harry Walker Parkway/Extension of HWP & Green Lane East

10/04/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	1275	89	64	1440	0	252	27	282	101	19	27
Future Volume (vph)	34	1275	89	64	1440	0	252	27	282	101	19	27
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width (m)	3.7	3.8	3.8	3.3	3.7	3.7	3.0	3.7	3.0	3.7	3.7	3.7
Storage Length (m)	65.0		65.0	50.0		30.0	0.0		0.0	60.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	7.6			7.6			7.6			2.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850					0.863			0.911	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1921	3771	1671	1766	3730	2022	1739	1729	0	1921	1842	0
Flt Permitted	0.125			0.123			0.444			0.563		
Satd. Flow (perm)	253	3771	1671	229	3730	2022	813	1729	0	1139	1842	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			120					143			29	
Link Speed (k/h)		70			70			50			50	
Link Distance (m)		502.9			92.9			200.4			84.4	
Travel Time (s)		25.9			4.8			14.4			6.1	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	3%	4%	4%	3%	0%	2%	0%	1%	0%	0%	0%
Adj. Flow (vph)	36	1356	95	68	1532	0	268	29	300	107	20	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	1356	95	68	1532	0	268	329	0	107	49	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)		4.9			4.9			4.9			1.6	
Two way Left Turn Lane												
Headway Factor	0.92	0.91	0.91	0.98	0.92	0.92	1.02	0.92	1.02	0.92	0.92	0.92
Turning Speed (k/h)	97		14	24		97	24		14	97		97
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		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	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	

Lanes, Volumes, Timings

2: Harry Walker Parkway/Extension of HWP & Green Lane East

10/04/2024

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		6		5	2		3	8		7	4	
Permitted Phases	6		6	2		2	8			4		
Detector Phase	6	6	6	5	2	2	3	8		7	4	
Switch Phase												
Minimum Initial (s)	30.0	30.0	30.0	7.0	30.0	30.0	5.0	10.0		7.0	5.0	
Minimum Split (s)	37.5	37.5	37.5	11.0	37.5	37.5	9.5	32.0		11.0	25.0	
Total Split (s)	85.0	85.0	85.0	11.0	96.0	96.0	29.0	42.0		12.0	25.0	
Total Split (%)	56.7%	56.7%	56.7%	7.3%	64.0%	64.0%	19.3%	28.0%		8.0%	16.7%	
Maximum Green (s)	77.5	77.5	77.5	7.0	88.5	88.5	24.5	35.0		8.0	18.0	
Yellow Time (s)	5.0	5.0	5.0	3.0	5.0	5.0	3.5	4.0		3.0	4.0	
All-Red Time (s)	2.5	2.5	2.5	1.0	2.5	2.5	1.0	3.0		1.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.5	7.5	7.5	4.0	7.5	7.5	4.5	7.0		4.0	7.0	
Lead/Lag	Lag	Lag	Lag	Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	0.2	0.2	0.2	3.0	0.2	0.2	3.0	0.2		3.0	3.0	
Recall Mode	C-Max	C-Max	C-Max	None	C-Max	C-Max	None	None		None	None	
Walk Time (s)	7.0	7.0	7.0		0.0	0.0		7.0			7.0	
Flash Dont Walk (s)	19.0	19.0	19.0		0.0	0.0		18.0			11.0	
Pedestrian Calls (#/hr)	0	0	0		0	0		0			0	
Act Effct Green (s)	91.6	91.6	91.6	104.6	101.1		36.9	22.4		17.5	8.2	
Actuated g/C Ratio	0.61	0.61	0.61	0.70	0.67		0.25	0.15		0.12	0.05	
v/c Ratio	0.23	0.59	0.09	0.29	0.61		0.77	0.87		0.61	0.38	
Control Delay	22.4	20.9	1.5	11.5	15.8		64.5	56.5		62.2	41.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	22.4	20.9	1.5	11.5	15.8		64.5	56.5		62.2	41.8	
LOS	C	C	A	B	B		E	E		E	D	
Approach Delay		19.7			15.6			60.1			55.8	
Approach LOS		B			B			E			E	

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

Natural Cycle: 95

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.87

Intersection Signal Delay: 25.7

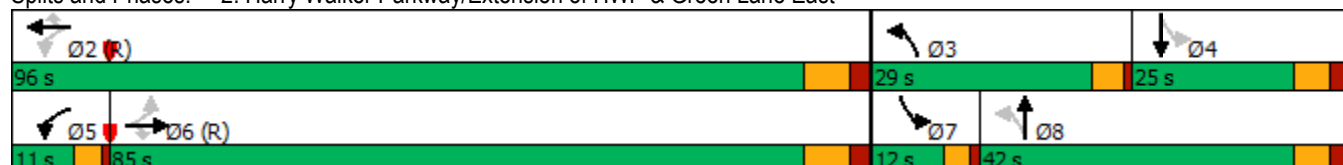
Intersection LOS: C

Intersection Capacity Utilization 89.7%

ICU Level of Service E

Analysis Period (min) 15

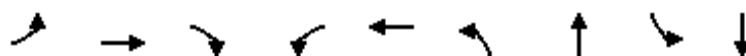
Splits and Phases: 2: Harry Walker Parkway/Extension of HWP & Green Lane East



Queues

2: Harry Walker Parkway/Extension of HWP & Green Lane East

10/04/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	36	1356	95	68	1532	268	329	107	49
v/c Ratio	0.23	0.59	0.09	0.29	0.61	0.77	0.87	0.61	0.38
Control Delay	22.4	20.9	1.5	11.5	15.8	64.5	56.5	62.2	41.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.4	20.9	1.5	11.5	15.8	64.5	56.5	62.2	41.8
Queue Length 50th (m)	5.0	131.6	0.0	6.2	128.9	70.5	55.9	25.1	5.8
Queue Length 95th (m)	15.0	178.3	5.2	13.3	172.9	94.1	87.6	38.7	18.8
Internal Link Dist (m)		478.9			68.9		176.4		60.4
Turn Bay Length (m)	65.0		65.0	50.0				60.0	
Base Capacity (vph)	154	2301	1066	238	2513	351	513	174	246
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.59	0.09	0.29	0.61	0.76	0.64	0.61	0.20
Intersection Summary									

HCM Signalized Intersection Capacity Analysis

2: Harry Walker Parkway/Extension of HWP & Green Lane East

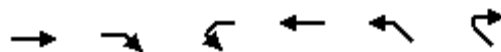
10/04/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	1275	89	64	1440	0	252	27	282	101	19	27
Future Volume (vph)	34	1275	89	64	1440	0	252	27	282	101	19	27
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width	3.7	3.8	3.8	3.3	3.7	3.7	3.0	3.7	3.0	3.7	3.7	3.7
Total Lost time (s)	7.5	7.5	7.5	4.0	7.5		4.5	7.0		4.0	7.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.86		1.00	0.91	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1921	3771	1671	1766	3730		1739	1730		1921	1843	
Flt Permitted	0.12	1.00	1.00	0.12	1.00		0.44	1.00		0.56	1.00	
Satd. Flow (perm)	252	3771	1671	228	3730		812	1730		1139	1843	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	36	1356	95	68	1532	0	268	29	300	107	20	29
RTOR Reduction (vph)	0	0	38	0	0	0	0	120	0	0	28	0
Lane Group Flow (vph)	36	1356	57	68	1532	0	268	209	0	107	21	0
Heavy Vehicles (%)	0%	3%	4%	4%	3%	0%	2%	0%	1%	0%	0%	0%
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases		6		5	2		3	8		7	4	
Permitted Phases	6		6	2		2	8			4		
Actuated Green, G (s)	89.4	89.4	89.4	99.7	99.7		35.8	23.8		15.1	7.1	
Effective Green, g (s)	89.4	89.4	89.4	99.7	99.7		35.8	23.8		15.1	7.1	
Actuated g/C Ratio	0.60	0.60	0.60	0.66	0.66		0.24	0.16		0.10	0.05	
Clearance Time (s)	7.5	7.5	7.5	4.0	7.5		4.5	7.0		4.0	7.0	
Vehicle Extension (s)	0.2	0.2	0.2	3.0	0.2		3.0	0.2		3.0	3.0	
Lane Grp Cap (vph)	150	2247	995	216	2479		343	274		156	87	
v/s Ratio Prot		0.36		0.01	c0.41		c0.13	0.12		0.04	0.01	
v/s Ratio Perm	0.14		0.03	0.20			c0.06			0.03		
v/c Ratio	0.24	0.60	0.06	0.31	0.62		0.78	0.76		0.69	0.25	
Uniform Delay, d1	14.3	19.1	12.7	14.1	14.3		51.5	60.4		64.3	68.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.7	1.2	0.1	0.8	1.2		11.0	10.7		11.8	1.5	
Delay (s)	18.0	20.3	12.8	15.0	15.5		62.5	71.1		76.1	70.3	
Level of Service	B	C	B	B	B		E	E		E	E	
Approach Delay (s)		19.8			15.5			67.2			74.3	
Approach LOS		B			B			E			E	
Intersection Summary												
HCM 2000 Control Delay			27.6			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.70									
Actuated Cycle Length (s)			150.0			Sum of lost time (s)				23.0		
Intersection Capacity Utilization			89.7%			ICU Level of Service				E		
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings

3: Highway 404 West-South On-ramp & Green Lane East

10/04/2024

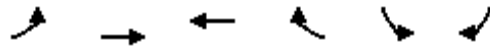


Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑↑	↑		↑↑		
Traffic Volume (vph)	25	49	0	30	0	0
Future Volume (vph)	25	49	0	30	0	0
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Width (m)	3.8	4.2	3.8	3.8	3.7	3.7
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	0.850					
Flt Protected						
Satd. Flow (prot)	3808	1778	0	3808	0	0
Flt Permitted						
Satd. Flow (perm)	3808	1778	0	3808	0	0
Link Speed (k/h)	70			70	60	
Link Distance (m)	92.9			303.3	172.8	
Travel Time (s)	4.8			15.6	10.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	53	0	33	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	27	53	0	33	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.3			3.3	0.0	
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	0.91	0.86	0.91	0.91	0.92	0.92
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	6.7%			ICU Level of Service A		
Analysis Period (min)	15					

Lanes, Volumes, Timings

4: Green Lane East & Highway 404 North-East/West Off-Ramp

10/04/2024

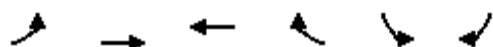


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↑↑	↑↑
Traffic Volume (vph)	0	904	1228	0	20	291
Future Volume (vph)	0	904	1228	0	20	291
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Width (m)	3.8	3.8	3.8	3.8	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	0.95
Frt					0.869	0.850
Flt Protected					0.994	
Satd. Flow (prot)	0	3771	3771	0	1773	1654
Flt Permitted					0.994	
Satd. Flow (perm)	0	3771	3771	0	1773	1654
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)					32	32
Link Speed (k/h)		70	70		60	
Link Distance (m)		303.3	111.8		268.4	
Travel Time (s)		15.6	5.7		16.1	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	3%	3%	0%	0%	2%
Adj. Flow (vph)	0	962	1306	0	21	310
Shared Lane Traffic (%)						47%
Lane Group Flow (vph)	0	962	1306	0	167	164
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		4.0	
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	0.91	0.91	0.91	0.91	0.88	0.88
Turning Speed (k/h)	24			14	24	14
Number of Detectors		2	2		1	1
Detector Template		Thru	Thru		Left	Right
Leading Detector (m)		30.5	30.5		6.1	6.1
Trailing Detector (m)		0.0	0.0		0.0	0.0
Detector 1 Position(m)		0.0	0.0		0.0	0.0
Detector 1 Size(m)		1.8	1.8		6.1	6.1
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0
Detector 2 Position(m)		28.7	28.7			
Detector 2 Size(m)		1.8	1.8			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type		NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases						4
Detector Phase		2	6		4	4

Lanes, Volumes, Timings

4: Green Lane East & Highway 404 North-East/West Off-Ramp

10/04/2024



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Switch Phase						
Minimum Initial (s)		30.0	30.0		15.0	15.0
Minimum Split (s)		37.7	37.7		22.2	22.2
Total Split (s)		52.7	52.7		37.2	37.2
Total Split (%)		58.6%	58.6%		41.4%	41.4%
Maximum Green (s)		45.0	45.0		30.0	30.0
Yellow Time (s)		5.9	5.9		5.1	5.1
All-Red Time (s)		1.8	1.8		2.1	2.1
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		7.7	7.7		7.2	7.2
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		4.0	4.0		3.0	3.0
Recall Mode		Max	Max		Max	Max
Act Effect Green (s)		45.0	45.0		30.0	30.0
Actuated g/C Ratio		0.50	0.50		0.33	0.33
v/c Ratio		0.51	0.69		0.27	0.29
Control Delay		16.3	19.6		19.0	19.2
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		16.3	19.6		19.0	19.2
LOS		B	B		B	B
Approach Delay		16.3	19.6		19.1	
Approach LOS		B	B		B	

Intersection Summary

Area Type: Other

Cycle Length: 89.9

Actuated Cycle Length: 89.9

Natural Cycle: 60

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.69

Intersection Signal Delay: 18.3

Intersection LOS: B

Intersection Capacity Utilization 56.6%

ICU Level of Service B

Analysis Period (min) 15

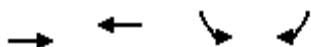
Splits and Phases: 4: Green Lane East & Highway 404 North-East/West Off-Ramp

→ Ø2		← Ø4
52.7 s		37.2 s
← Ø6		
52.7 s		

Queues

4: Green Lane East & Highway 404 North-East/West Off-Ramp

10/04/2024

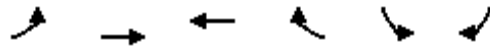


Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	962	1306	167	164
v/c Ratio	0.51	0.69	0.27	0.29
Control Delay	16.3	19.6	19.0	19.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	16.3	19.6	19.0	19.2
Queue Length 50th (m)	55.8	86.4	16.6	17.2
Queue Length 95th (m)	72.2	109.4	31.8	33.0
Internal Link Dist (m)	279.3	87.8	244.4	
Turn Bay Length (m)				
Base Capacity (vph)	1887	1887	612	573
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.51	0.69	0.27	0.29
Intersection Summary				

HCM Signalized Intersection Capacity Analysis

4: Green Lane East & Highway 404 North-East/West Off-Ramp

10/04/2024

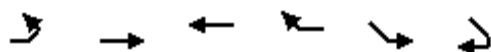


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↑↑	↑↑
Traffic Volume (vph)	0	904	1228	0	20	291
Future Volume (vph)	0	904	1228	0	20	291
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Width	3.8	3.8	3.8	3.8	4.0	4.0
Total Lost time (s)		7.7	7.7		7.2	7.2
Lane Util. Factor		0.95	0.95		1.00	0.95
Frt		1.00	1.00		0.87	0.85
Flt Protected		1.00	1.00		0.99	1.00
Satd. Flow (prot)		3771	3771		1773	1654
Flt Permitted		1.00	1.00		0.99	1.00
Satd. Flow (perm)		3771	3771		1773	1654
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	962	1306	0	21	310
RTOR Reduction (vph)	0	0	0	0	21	21
Lane Group Flow (vph)	0	962	1306	0	146	143
Heavy Vehicles (%)	0%	3%	3%	0%	0%	2%
Turn Type		NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases						4
Actuated Green, G (s)		45.0	45.0		30.0	30.0
Effective Green, g (s)		45.0	45.0		30.0	30.0
Actuated g/C Ratio		0.50	0.50		0.33	0.33
Clearance Time (s)		7.7	7.7		7.2	7.2
Vehicle Extension (s)		4.0	4.0		3.0	3.0
Lane Grp Cap (vph)		1887	1887		591	551
v/s Ratio Prot		0.26	c0.35		0.08	
v/s Ratio Perm						c0.09
v/c Ratio		0.51	0.69		0.25	0.26
Uniform Delay, d1		15.1	17.2		21.7	21.8
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		1.0	2.1		1.0	1.1
Delay (s)		16.0	19.3		22.7	23.0
Level of Service		B	B		C	C
Approach Delay (s)		16.0	19.3		22.9	
Approach LOS		B	B		C	
Intersection Summary						
HCM 2000 Control Delay		18.5		HCM 2000 Level of Service		B
HCM 2000 Volume to Capacity ratio		0.52				
Actuated Cycle Length (s)		89.9		Sum of lost time (s)		14.9
Intersection Capacity Utilization		56.6%		ICU Level of Service		B
Analysis Period (min)		15				
c Critical Lane Group						

Lanes, Volumes, Timings

5: Green Lane East & Highway 404 East-South On-Ramp

10/04/2024

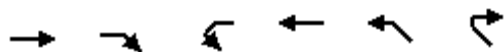


Lane Group	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations		↑↑	↑↑	↗		
Traffic Volume (vph)	0	14	30	0	0	0
Future Volume (vph)	0	14	30	0	0	0
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Width (m)	3.8	3.8	3.8	3.8	3.7	3.7
Storage Length (m)	0.0			70.0	0.0	0.0
Storage Lanes	0			0	0	0
Taper Length (m)	7.6				7.6	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	0	3808	3808	2004	0	0
Flt Permitted						
Satd. Flow (perm)	0	3808	3808	2004	0	0
Link Speed (k/h)		70	70		30	
Link Distance (m)		111.8	136.3		95.7	
Travel Time (s)		5.7	7.0		11.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	15	33	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	15	33	0	0	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		0.0	
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	0.91	0.91	0.91	0.91	0.92	0.92
Turning Speed (k/h)	24			97	97	14
Sign Control		Free	Free		Free	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 56.6%				ICU Level of Service B		
Analysis Period (min) 15						

Lanes, Volumes, Timings

6: Highway 404 West-North On-Ramp & Green Lane East

10/04/2024



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑↑	↑		↑↑		
Traffic Volume (vph)	5	20	0	0	0	0
Future Volume (vph)	5	20	0	0	0	0
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Width (m)	3.8	4.0	3.7	3.7	3.7	3.7
Storage Length (m)		15.0	0.0		0.0	0.0
Storage Lanes		1	0		0	0
Taper Length (m)			7.6		7.6	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt		0.850				
Flt Protected						
Satd. Flow (prot)	3808	1741	0	3767	0	0
Flt Permitted						
Satd. Flow (perm)	3808	1741	0	3767	0	0
Link Speed (k/h)	70			70	30	
Link Distance (m)	136.3			93.2	107.1	
Travel Time (s)	7.0			4.8	12.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	22	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	5	22	0	0	0	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	0.0	
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	0.91	0.88	0.92	0.92	0.92	0.92
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

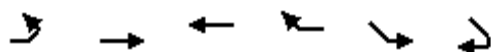
Intersection Capacity Utilization 6.7% ICU Level of Service A

Analysis Period (min) 15

Lanes, Volumes, Timings

7: Green Lane East & Highway 404 East-North On-Ramp

10/04/2024



Lane Group	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations		↑↑	↑↑	↑		
Traffic Volume (vph)	0	5	30	12	0	0
Future Volume (vph)	0	5	30	12	0	0
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Fr _t				0.850		
Flt Protected						
Satd. Flow (prot)	0	3767	3767	1719	0	0
Flt Permitted						
Satd. Flow (perm)	0	3767	3767	1719	0	0
Link Speed (k/h)		70	48		40	
Link Distance (m)		93.2	36.9		98.9	
Travel Time (s)		4.8	2.8		8.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	0%	2%	2%
Adj. Flow (vph)	0	5	33	13	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	5	33	13	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.8	3.8		0.0	
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	0.92	0.92	0.92	0.92	0.92	0.92
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 6.7%	ICU Level of Service A					
Analysis Period (min) 15						

Lanes, Volumes, Timings

8: Highway 404 South-East/West Off-Ramp/Carpool Parking Lot Access & Green Lane East

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	350	0	0	374	4	918	3	74	4	0	20
Future Volume (vph)	6	350	0	0	374	4	918	3	74	4	0	20
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width (m)	3.8	3.8	3.8	3.8	3.8	3.8	3.8	4.0	4.0	4.0	4.0	4.0
Storage Length (m)	20.0		0.0	0.0		20.0	0.0		60.0	0.0		0.0
Storage Lanes	1		0	0		0	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91	0.91	0.95	0.95	1.00	1.00	1.00	1.00
Fr't					0.999				0.850			0.850
Flt Protected	0.950						0.950	0.953		0.950		
Satd. Flow (prot)	1942	3771	0	0	5313	0	1791	1836	1675	1984	0	1776
Flt Permitted	0.454						0.950	0.953		0.950		
Satd. Flow (perm)	928	3771	0	0	5313	0	1791	1836	1675	1984	0	1776
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					1				111			111
Link Speed (k/h)		70			70			60				40
Link Distance (m)		36.9			312.7			301.6				147.9
Travel Time (s)		1.9			16.1			18.1				13.3
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	3%	0%	0%	5%	0%	3%	0%	6%	0%	0%	0%
Adj. Flow (vph)	6	372	0	0	398	4	977	3	79	4	0	21
Shared Lane Traffic (%)							50%					
Lane Group Flow (vph)	6	372	0	0	402	0	488	492	79	4	0	21
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)		3.8			3.8			4.0			4.0	
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	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.88	0.88	0.88	0.88	0.88
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2			2		1	2	1	1		1
Detector Template	Left	Thru			Thru		Left	Thru	Right	Left		Right
Leading Detector (m)	6.1	30.5			30.5		6.1	30.5	6.1	6.1		6.1
Trailing Detector (m)	0.0	0.0			0.0		0.0	0.0	0.0	0.0		0.0
Detector 1 Position(m)	0.0	0.0			0.0		0.0	0.0	0.0	0.0		0.0
Detector 1 Size(m)	6.1	1.8			1.8		6.1	1.8	6.1	6.1		6.1
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0	0.0	0.0		0.0
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0	0.0	0.0		0.0
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0	0.0	0.0		0.0
Detector 2 Position(m)		28.7			28.7			28.7				
Detector 2 Size(m)		1.8			1.8			1.8				
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	pm+pt	NA			NA		Split	NA	Perm	Prot		Prot

Lanes, Volumes, Timings

8: Highway 404 South-East/West Off-Ramp/Carpool Parking Lot Access & Green Lane East

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	5	2			6		8	8		7		7
Permitted Phases	2								8			
Detector Phase	5	2			6		8	8	8	7		7
Switch Phase												
Minimum Initial (s)	7.0	20.0			20.0		10.0	10.0	10.0	10.0		10.0
Minimum Split (s)	11.0	41.0			41.0		40.5	40.5	40.5	17.5		17.5
Total Split (s)	19.0	74.0			55.0		57.5	57.5	57.5	30.5		30.5
Total Split (%)	11.7%	45.7%			34.0%		35.5%	35.5%	35.5%	18.8%		18.8%
Maximum Green (s)	15.0	66.0			47.0		50.0	50.0	50.0	23.0		23.0
Yellow Time (s)	3.0	5.0			5.0		4.5	4.5	4.5	4.5		4.5
All-Red Time (s)	1.0	3.0			3.0		3.0	3.0	3.0	3.0		3.0
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	4.0	8.0			8.0		7.5	7.5	7.5	7.5		7.5
Lead/Lag	Lead				Lag		Lag	Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	Yes				Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	4.0			4.0		3.0	3.0	3.0	3.0		3.0
Recall Mode	None	Ped			Ped		None	None	None	None		None
Walk Time (s)		7.0			7.0		7.0	7.0	7.0			
Flash Dont Walk (s)		26.0			26.0		26.0	26.0	26.0			
Pedestrian Calls (#/hr)		0			0		0	0	0			
Act Effct Green (s)	40.6	36.3			34.7		35.4	35.4	35.4	10.5		10.5
Actuated g/C Ratio	0.42	0.37			0.36		0.36	0.36	0.36	0.11		0.11
v/c Ratio	0.01	0.26			0.21		0.75	0.74	0.12	0.02		0.07
Control Delay	24.0	25.1			26.4		36.0	35.2	2.2	50.0		0.5
Queue Delay	0.0	0.0			0.0		0.0	0.0	0.0	0.0		0.0
Total Delay	24.0	25.1			26.4		36.0	35.2	2.2	50.0		0.5
LOS	C	C			C		D	D	A	D		A
Approach Delay		25.1			26.4			33.1				8.4
Approach LOS		C			C			C				A

Intersection Summary

Area Type: Other

Cycle Length: 162

Actuated Cycle Length: 97.1

Natural Cycle: 110

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 29.7

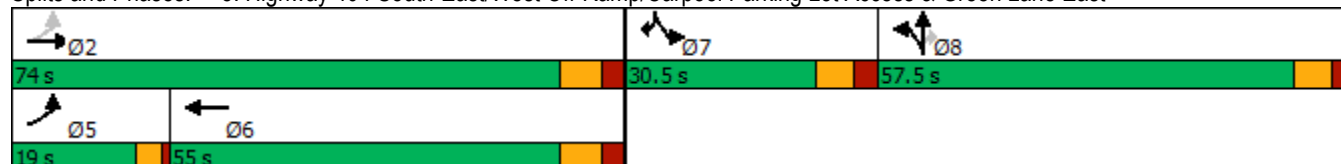
Intersection LOS: C

Intersection Capacity Utilization 68.4%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 8: Highway 404 South-East/West Off-Ramp/Carpool Parking Lot Access & Green Lane East



Queues

8: Highway 404 South-East/West Off-Ramp/Carpool Parking Lot Access & Green Lane East

								
Lane Group	EBL	EBT	WBT	NBL	NBT	NBR	SBL	SBR
Lane Group Flow (vph)	6	372	402	488	492	79	4	21
v/c Ratio	0.01	0.26	0.21	0.75	0.74	0.12	0.02	0.07
Control Delay	24.0	25.1	26.4	36.0	35.2	2.2	50.0	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.0	25.1	26.4	36.0	35.2	2.2	50.0	0.5
Queue Length 50th (m)	0.8	29.6	21.6	89.5	89.5	0.0	0.7	0.0
Queue Length 95th (m)	3.8	47.8	39.1	147.0	146.6	4.6	4.7	0.0
Internal Link Dist (m)		12.9	288.7		277.6			
Turn Bay Length (m)	20.0					60.0		
Base Capacity (vph)	552	2692	2702	968	993	956	493	525
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	0.14	0.15	0.50	0.50	0.08	0.01	0.04
Intersection Summary								

HCM Signalized Intersection Capacity Analysis

8: Highway 404 South-East/West Off-Ramp/Carpool Parking Lot Access & Green Lane East

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	350	0	0	374	4	918	3	74	4	0	20
Future Volume (vph)	6	350	0	0	374	4	918	3	74	4	0	20
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width	3.8	3.8	3.8	3.8	3.8	3.8	3.8	4.0	4.0	4.0	4.0	4.0
Total Lost time (s)	4.0	8.0			8.0		7.5	7.5	7.5	7.5		7.5
Lane Util. Factor	1.00	0.95			0.91		0.95	0.95	1.00	1.00		1.00
Frt	1.00	1.00			1.00		1.00	1.00	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00		0.95	0.95	1.00	0.95		1.00
Satd. Flow (prot)	1942	3771			5310		1791	1836	1675	1984		1776
Flt Permitted	0.45	1.00			1.00		0.95	0.95	1.00	0.95		1.00
Satd. Flow (perm)	929	3771			5310		1791	1836	1675	1984		1776
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	6	372	0	0	398	4	977	3	79	4	0	21
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	52	0	0	20
Lane Group Flow (vph)	6	372	0	0	401	0	488	492	27	4	0	1
Heavy Vehicles (%)	0%	3%	0%	0%	5%	0%	3%	0%	6%	0%	0%	0%
Turn Type	pm+pt	NA			NA		Split	NA	Perm	Prot		Prot
Protected Phases	5	2			6		8	8		7		7
Permitted Phases	2								8			
Actuated Green, G (s)	39.8	39.8			34.7		35.4	35.4	35.4	5.2		5.2
Effective Green, g (s)	39.8	39.8			34.7		35.4	35.4	35.4	5.2		5.2
Actuated g/C Ratio	0.38	0.38			0.34		0.34	0.34	0.34	0.05		0.05
Clearance Time (s)	4.0	8.0			8.0		7.5	7.5	7.5	7.5		7.5
Vehicle Extension (s)	3.0	4.0			4.0		3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	368	1451			1781		613	628	573	99		89
v/s Ratio Prot	0.00	c0.10			0.08		c0.27	0.27		c0.00		0.00
v/s Ratio Perm	0.01								0.02			
v/c Ratio	0.02	0.26			0.23		0.80	0.78	0.05	0.04		0.01
Uniform Delay, d1	19.7	21.7			24.7		30.7	30.6	22.7	46.7		46.7
Progression Factor	1.00	1.00			1.00		1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	0.0	0.1			0.1		7.1	6.3	0.0	0.2		0.1
Delay (s)	19.7	21.8			24.8		37.8	36.9	22.8	46.9		46.7
Level of Service	B	C			C		D	D	C	D		D
Approach Delay (s)		21.8			24.8			36.3			46.7	
Approach LOS		C			C			D			D	
Intersection Summary												
HCM 2000 Control Delay			31.0				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.51									
Actuated Cycle Length (s)			103.4				Sum of lost time (s)			27.0		
Intersection Capacity Utilization			68.4%				ICU Level of Service			C		
Analysis Period (min)			15									

c Critical Lane Group

Lanes, Volumes, Timings

101: Leslie Street & Industrial Development Site Access

10/04/2024



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	964	0	0	518
Future Volume (vph)	0	0	964	0	0	518
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1983	0	1983	0	0	1983
Flt Permitted						
Satd. Flow (perm)	1983	0	1983	0	0	1983
Link Speed (k/h)	48		48			48
Link Distance (m)	318.5		282.0			250.3
Travel Time (s)	23.9		21.2			18.8
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	0	1026	0	0	551
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	1026	0	0	551
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		3.6			3.6
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	0.92	0.92	0.92	0.92	0.92	0.92
Turning Speed (k/h)	97	97		97	97	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 51.5%			ICU Level of Service A			
Analysis Period (min) 15						

HCM Unsignalized Intersection Capacity Analysis

101: Leslie Street & Industrial Development Site Access

10/04/2024

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	964	0	0	518
Future Volume (Veh/h)	0	0	964	0	0	518
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	0	1026	0	0	551
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (m)			282			
pX, platoon unblocked	0.77	0.77			0.77	
vC, conflicting volume	1577	1026			1026	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1600	882			882	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	90	265			588	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	0	1026	551			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1700	588			
Volume to Capacity	0.00	0.60	0.00			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay		0.0				
Intersection Capacity Utilization		51.5%		ICU Level of Service		A
Analysis Period (min)		15				

Lanes, Volumes, Timings
102: Extension of HWP & Site Access

10/04/2024

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	67	44	8	48	0
Future Volume (vph)	0	67	44	8	48	0
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865					
Flt Protected				0.960		
Satd. Flow (prot)	1715	0	0	1903	1983	0
Flt Permitted				0.960		
Satd. Flow (perm)	1715	0	0	1903	1983	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	73.6			84.4	135.0	
Travel Time (s)	5.5			6.3	10.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	73	48	9	52	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	73	0	0	57	52	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	0.92	0.92	0.92	0.92	0.92	0.92
Turning Speed (k/h)	97	97	97			97
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	20.0%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis

102: Extension of HWP & Site Access

10/04/2024

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	67	44	8	48	0
Future Volume (Veh/h)	0	67	44	8	48	0
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)	0	73	48	9	52	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (m)				84		
pX, platoon unblocked						
vC, conflicting volume	157	52	52			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	157	52	52			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	93	97			
cM capacity (veh/h)	808	1016	1554			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	73	57	52			
Volume Left	0	48	0			
Volume Right	73	0	0			
cSH	1016	1554	1700			
Volume to Capacity	0.07	0.03	0.03			
Queue Length 95th (m)	1.8	0.7	0.0			
Control Delay (s)	8.8	6.3	0.0			
Lane LOS	A	A				
Approach Delay (s)	8.8	6.3	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			5.5			
Intersection Capacity Utilization		20.0%		ICU Level of Service		A
Analysis Period (min)			15			

Lanes, Volumes, Timings
1: Leslie Street & Green Lane East

10/04/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	118	1180	429	75	1510	266	463	726	179	138	362	103
Future Volume (vph)	118	1180	429	75	1510	266	463	726	179	138	362	103
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width (m)	3.5	3.6	3.3	3.7	3.7	3.5	4.8	3.6	3.8	3.6	3.8	3.3
Storage Length (m)	125.0		70.0	185.0		85.0	55.0		35.0	85.0		35.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor			0.99			0.99			0.99	1.00		
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1860	3689	1580	1847	3730	1664	2111	3762	1721	1881	3846	1595
Flt Permitted	0.057			0.105			0.381			0.147		
Satd. Flow (perm)	112	3689	1559	204	3730	1644	847	3762	1696	291	3846	1595
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			287			157			114			141
Link Speed (k/h)		70			70			60			60	
Link Distance (m)		324.4			502.9			426.7			282.0	
Travel Time (s)		16.7			25.9			25.6			16.9	
Confl. Peds. (#/hr)			1	1					2	2		
Confl. Bikes (#/hr)						1						
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	1%	3%	4%	4%	3%	1%	2%	1%	1%	1%	1%	3%
Adj. Flow (vph)	126	1255	456	80	1606	283	493	772	190	147	385	110
Shared Lane Traffic (%)												
Lane Group Flow (vph)	126	1255	456	80	1606	283	493	772	190	147	385	110
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			4.8			4.8	
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	0.95	0.94	0.98	0.92	0.92	0.95	0.79	0.94	0.91	0.94	0.91	0.98
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5	6.1
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8	6.1
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lanes, Volumes, Timings

1: Leslie Street & Green Lane East

10/04/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6		6	2		2	8		8	4		4
Detector Phase	1	6	6	5	2	2	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	7.0	30.0	30.0	7.0	30.0	30.0	7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	11.0	44.5	44.5	11.0	44.5	44.5	11.0	45.0	45.0	11.0	45.0	45.0
Total Split (s)	24.0	77.5	77.5	19.0	72.5	72.5	24.0	43.0	43.0	19.0	38.0	38.0
Total Split (%)	15.1%	48.9%	48.9%	12.0%	45.7%	45.7%	15.1%	27.1%	27.1%	12.0%	24.0%	24.0%
Maximum Green (s)	20.0	70.0	70.0	15.0	65.0	65.0	20.0	35.0	35.0	15.0	30.0	30.0
Yellow Time (s)	3.0	5.0	5.0	3.0	5.0	5.0	3.0	4.5	4.5	3.0	4.5	4.5
All-Red Time (s)	1.0	2.5	2.5	1.0	2.5	2.5	1.0	3.5	3.5	1.0	3.5	3.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	-3.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	7.5	7.5	4.0	7.5	7.5	1.0	8.0	8.0	4.0	8.0	8.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		30.0	30.0		30.0	30.0		30.0	30.0		30.0	30.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	84.7	70.3	70.3	79.6	67.5	67.5	58.3	34.2	34.2	44.4	27.3	27.3
Actuated g/C Ratio	0.57	0.47	0.47	0.53	0.45	0.45	0.39	0.23	0.23	0.30	0.18	0.18
v/c Ratio	0.64	0.73	0.52	0.40	0.95	0.34	0.94	0.90	0.40	0.65	0.55	0.27
Control Delay	42.2	35.5	12.0	20.8	53.5	13.3	65.6	70.6	22.7	47.3	58.9	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.2	35.5	12.0	20.8	53.5	13.3	65.6	70.6	22.7	47.3	58.9	4.9
LOS	D	D	B	C	D	B	E	E	C	D	E	A
Approach Delay		30.1			46.4			62.7			47.0	
Approach LOS		C			D			E			D	

Intersection Summary

Area Type: Other

Cycle Length: 158.5

Actuated Cycle Length: 149.7

Natural Cycle: 135

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.95

Intersection Signal Delay: 45.4

Intersection LOS: D

Intersection Capacity Utilization 99.3%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 1: Leslie Street & Green Lane East



FT_PM_2034 3:42 pm 08/21/2024

Synchro 11 Report

Page 2

Queues

1: Leslie Street & Green Lane East

10/04/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	126	1255	456	80	1606	283	493	772	190	147	385	110
v/c Ratio	0.64	0.73	0.52	0.40	0.95	0.34	0.94	0.90	0.40	0.65	0.55	0.27
Control Delay	42.2	35.5	12.0	20.8	53.5	13.3	65.6	70.6	22.7	47.3	58.9	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.2	35.5	12.0	20.8	53.5	13.3	65.6	70.6	22.7	47.3	58.9	4.9
Queue Length 50th (m)	19.7	159.0	32.8	10.4	243.3	22.6	115.5	119.0	18.5	29.6	55.1	0.0
Queue Length 95th (m)	41.4	192.2	65.6	18.6	#319.6	47.5	#192.3	#157.7	42.8	47.8	73.7	8.5
Internal Link Dist (m)		300.4			478.9			402.7			258.0	
Turn Bay Length (m)	125.0		70.0	185.0		85.0	55.0		35.0	85.0		35.0
Base Capacity (vph)	298	1731	884	280	1682	827	524	880	484	249	771	432
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.73	0.52	0.29	0.95	0.34	0.94	0.88	0.39	0.59	0.50	0.25

Intersection Summary

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

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

1: Leslie Street & Green Lane East

10/04/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	118	1180	429	75	1510	266	463	726	179	138	362	103
Future Volume (vph)	118	1180	429	75	1510	266	463	726	179	138	362	103
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width	3.5	3.6	3.3	3.7	3.7	3.5	4.8	3.6	3.8	3.6	3.8	3.3
Total Lost time (s)	4.0	7.5	7.5	4.0	7.5	7.5	1.0	8.0	8.0	4.0	8.0	8.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1860	3689	1559	1847	3730	1644	2111	3762	1696	1881	3846	1595
Flt Permitted	0.06	1.00	1.00	0.10	1.00	1.00	0.38	1.00	1.00	0.15	1.00	1.00
Satd. Flow (perm)	111	3689	1559	203	3730	1644	847	3762	1696	290	3846	1595
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	126	1255	456	80	1606	283	493	772	190	147	385	110
RTOR Reduction (vph)	0	0	152	0	0	86	0	0	88	0	0	90
Lane Group Flow (vph)	126	1255	304	80	1606	197	493	772	102	147	385	20
Confl. Peds. (#/hr)			1	1					2	2		
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	1%	3%	4%	4%	3%	1%	2%	1%	1%	1%	1%	3%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	1	6		5	2		3	8		7	4	
Permitted Phases	6		6	2		2	8		8	4		4
Actuated Green, G (s)	81.7	70.3	70.3	76.1	67.5	67.5	51.3	34.2	34.2	40.4	27.3	27.3
Effective Green, g (s)	81.7	70.3	70.3	76.1	67.5	67.5	54.3	34.2	34.2	40.4	27.3	27.3
Actuated g/C Ratio	0.55	0.47	0.47	0.51	0.45	0.45	0.36	0.23	0.23	0.27	0.18	0.18
Clearance Time (s)	4.0	7.5	7.5	4.0	7.5	7.5	4.0	8.0	8.0	4.0	8.0	8.0
Vehicle Extension (s)	3.0	6.0	6.0	3.0	6.0	6.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	193	1732	732	197	1681	741	501	859	387	217	701	290
v/s Ratio Prot	c0.05	0.34		0.02	c0.43		c0.15	c0.21		0.06	0.10	
v/s Ratio Perm	0.30		0.19	0.18		0.12	0.21		0.06	0.12		0.01
v/c Ratio	0.65	0.72	0.41	0.41	0.96	0.27	0.98	0.90	0.26	0.68	0.55	0.07
Uniform Delay, d1	36.2	31.9	26.2	24.1	39.6	25.6	42.6	56.1	47.4	44.7	55.6	50.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.7	2.7	1.7	1.4	13.6	0.9	35.8	12.1	0.4	8.1	0.9	0.1
Delay (s)	43.9	34.6	27.9	25.5	53.3	26.5	78.4	68.2	47.8	52.8	56.5	50.8
Level of Service	D	C	C	C	D	C	E	E	D	D	E	D
Approach Delay (s)		33.6			48.3			69.0			54.7	
Approach LOS		C			D			E			D	
Intersection Summary												
HCM 2000 Control Delay			49.5									
HCM 2000 Volume to Capacity ratio			0.95									
Actuated Cycle Length (s)			149.7									
Intersection Capacity Utilization			99.3%									
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings

2: Harry Walker Parkway/Extension of HWP & Green Lane East

10/04/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	1406	89	64	1587	0	252	27	282	101	19	27
Future Volume (vph)	34	1406	89	64	1587	0	252	27	282	101	19	27
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width (m)	3.7	3.8	3.8	3.3	3.7	3.7	3.0	3.7	3.0	3.7	3.7	3.7
Storage Length (m)	65.0		65.0	50.0		30.0	0.0		0.0	60.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	7.6			7.6			7.6			2.5		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr't			0.850					0.863			0.911	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1921	3771	1671	1766	3730	2022	1739	1729	0	1921	1842	0
Flt Permitted	0.092			0.092			0.468			0.488		
Satd. Flow (perm)	186	3771	1671	171	3730	2022	856	1729	0	987	1842	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			120					136			29	
Link Speed (k/h)		70			70			50			50	
Link Distance (m)		502.9			92.9			200.4			84.4	
Travel Time (s)		25.9			4.8			14.4			6.1	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	3%	4%	4%	3%	0%	2%	0%	1%	0%	0%	0%
Adj. Flow (vph)	36	1496	95	68	1688	0	268	29	300	107	20	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	1496	95	68	1688	0	268	329	0	107	49	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)		4.9			4.9			4.9			1.6	
Two way Left Turn Lane												
Headway Factor	0.92	0.91	0.91	0.98	0.92	0.92	1.02	0.92	1.02	0.92	0.92	0.92
Turning Speed (k/h)	97		14	24		97	24		14	97		97
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	6.1	30.5	6.1	6.1	30.5	6.1	6.1	30.5		6.1	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	6.1	1.8	6.1	6.1	1.8	6.1	6.1	1.8		6.1	1.8	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		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	
Detector 2 Position(m)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	

Lanes, Volumes, Timings

2: Harry Walker Parkway/Extension of HWP & Green Lane East

10/04/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		6		5	2		3	8		7	4	
Permitted Phases	6		6	2		2	8			4		
Detector Phase	6	6	6	5	2	2	3	8		7	4	
Switch Phase												
Minimum Initial (s)	30.0	30.0	30.0	7.0	30.0	30.0	5.0	10.0		7.0	5.0	
Minimum Split (s)	37.5	37.5	37.5	11.0	37.5	37.5	9.5	32.0		11.0	25.0	
Total Split (s)	86.0	86.0	86.0	11.0	97.0	97.0	27.7	40.0		13.0	25.3	
Total Split (%)	57.3%	57.3%	57.3%	7.3%	64.7%	64.7%	18.5%	26.7%		8.7%	16.9%	
Maximum Green (s)	78.5	78.5	78.5	7.0	89.5	89.5	23.2	33.0		9.0	18.3	
Yellow Time (s)	5.0	5.0	5.0	3.0	5.0	5.0	3.5	4.0		3.0	4.0	
All-Red Time (s)	2.5	2.5	2.5	1.0	2.5	2.5	1.0	3.0		1.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.5	7.5	7.5	4.0	7.5	7.5	4.5	7.0		4.0	7.0	
Lead/Lag	Lag	Lag	Lag	Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	0.2	0.2	0.2	3.0	0.2	0.2	3.0	0.2		3.0	3.0	
Recall Mode	C-Max	C-Max	C-Max	None	C-Max	C-Max	None	None		None	None	
Walk Time (s)	7.0	7.0	7.0		0.0	0.0		7.0			7.0	
Flash Dont Walk (s)	19.0	19.0	19.0		0.0	0.0		18.0			11.0	
Pedestrian Calls (#/hr)	0	0	0		0	0		0			0	
Act Effct Green (s)	91.3	91.3	91.3	104.1	100.6		37.4	21.9		19.5	9.3	
Actuated g/C Ratio	0.61	0.61	0.61	0.69	0.67		0.25	0.15		0.13	0.06	
v/c Ratio	0.32	0.65	0.09	0.34	0.67		0.76	0.89		0.58	0.35	
Control Delay	28.8	22.7	1.5	13.4	17.7		63.5	62.1		58.4	39.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	28.8	22.7	1.5	13.4	17.7		63.5	62.1		58.4	39.1	
LOS	C	C	A	B	B		E	E		E	D	
Approach Delay		21.6			17.5			62.7			52.4	
Approach LOS		C			B			E			D	

Intersection Summary

Area Type: Other

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green

Natural Cycle: 95

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.89

Intersection Signal Delay: 27.0

Intersection LOS: C

Intersection Capacity Utilization 89.7%

ICU Level of Service E

Analysis Period (min) 15

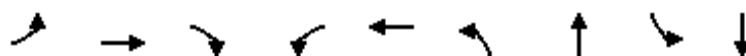
Splits and Phases: 2: Harry Walker Parkway/Extension of HWP & Green Lane East



Queues

2: Harry Walker Parkway/Extension of HWP & Green Lane East

10/04/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	36	1496	95	68	1688	268	329	107	49
v/c Ratio	0.32	0.65	0.09	0.34	0.67	0.76	0.89	0.58	0.35
Control Delay	28.8	22.7	1.5	13.4	17.7	63.5	62.1	58.4	39.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.8	22.7	1.5	13.4	17.7	63.5	62.1	58.4	39.1
Queue Length 50th (m)	5.2	150.5	0.0	6.0	148.4	71.4	59.4	25.4	5.8
Queue Length 95th (m)	17.8	208.3	5.2	13.7	210.0	92.8	89.6	38.1	18.4
Internal Link Dist (m)		478.9			68.9		176.4		60.4
Turn Bay Length (m)	65.0		65.0	50.0				60.0	
Base Capacity (vph)	113	2295	1064	198	2502	352	486	184	250
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.65	0.09	0.34	0.67	0.76	0.68	0.58	0.20
Intersection Summary									

HCM Signalized Intersection Capacity Analysis

2: Harry Walker Parkway/Extension of HWP & Green Lane East

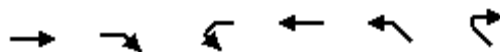
10/04/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	1406	89	64	1587	0	252	27	282	101	19	27
Future Volume (vph)	34	1406	89	64	1587	0	252	27	282	101	19	27
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width	3.7	3.8	3.8	3.3	3.7	3.7	3.0	3.7	3.0	3.7	3.7	3.7
Total Lost time (s)	7.5	7.5	7.5	4.0	7.5		4.5	7.0		4.0	7.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.86		1.00	0.91	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1921	3771	1671	1766	3730		1739	1730		1921	1843	
Flt Permitted	0.09	1.00	1.00	0.09	1.00		0.47	1.00		0.49	1.00	
Satd. Flow (perm)	186	3771	1671	171	3730		857	1730		986	1843	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	36	1496	95	68	1688	0	268	29	300	107	20	29
RTOR Reduction (vph)	0	0	39	0	0	0	0	115	0	0	27	0
Lane Group Flow (vph)	36	1496	56	68	1688	0	268	214	0	107	22	0
Heavy Vehicles (%)	0%	3%	4%	4%	3%	0%	2%	0%	1%	0%	0%	0%
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases		6		5	2		3	8		7	4	
Permitted Phases	6		6	2		2	8			4		
Actuated Green, G (s)	89.1	89.1	89.1	99.2	99.2		36.3	23.4		17.1	8.2	
Effective Green, g (s)	89.1	89.1	89.1	99.2	99.2		36.3	23.4		17.1	8.2	
Actuated g/C Ratio	0.59	0.59	0.59	0.66	0.66		0.24	0.16		0.11	0.05	
Clearance Time (s)	7.5	7.5	7.5	4.0	7.5		4.5	7.0		4.0	7.0	
Vehicle Extension (s)	0.2	0.2	0.2	3.0	0.2		3.0	0.2		3.0	3.0	
Lane Grp Cap (vph)	110	2239	992	177	2466		346	269		167	100	
v/s Ratio Prot		0.40		0.02	c0.45		c0.12	c0.12		0.04	0.01	
v/s Ratio Perm	0.19		0.03	0.24			0.07			0.03		
v/c Ratio	0.33	0.67	0.06	0.38	0.68		0.77	0.80		0.64	0.22	
Uniform Delay, d1	15.3	20.5	12.8	17.1	15.7		51.0	61.0		62.4	67.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	7.8	1.6	0.1	1.4	1.6		10.3	14.1		8.1	1.1	
Delay (s)	23.1	22.1	12.9	18.5	17.3		61.4	75.1		70.5	68.9	
Level of Service	C	C	B	B	B		E	E		E	E	
Approach Delay (s)		21.6			17.3			68.9			70.0	
Approach LOS		C			B			E			E	
Intersection Summary												
HCM 2000 Control Delay	28.4			HCM 2000 Level of Service					C			
HCM 2000 Volume to Capacity ratio	0.75											
Actuated Cycle Length (s)	150.0			Sum of lost time (s)					23.0			
Intersection Capacity Utilization	89.7%			ICU Level of Service					E			
Analysis Period (min)	15											
c Critical Lane Group												

Lanes, Volumes, Timings

3: Highway 404 West-South On-ramp & Green Lane East

10/04/2024

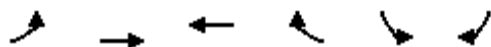


Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑↑	↑		↑↑		
Traffic Volume (vph)	25	49	0	30	0	0
Future Volume (vph)	25	49	0	30	0	0
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Width (m)	3.8	4.2	3.8	3.8	3.7	3.7
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt	0.850					
Flt Protected						
Satd. Flow (prot)	3808	1778	0	3808	0	0
Flt Permitted						
Satd. Flow (perm)	3808	1778	0	3808	0	0
Link Speed (k/h)	70			70	60	
Link Distance (m)	92.9			303.3	172.8	
Travel Time (s)	4.8			15.6	10.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	27	53	0	33	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	27	53	0	33	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.3			3.3	0.0	
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	0.91	0.86	0.91	0.91	0.92	0.92
Turning Speed (k/h)	14		24	24		14
Sign Control	Free			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	6.7%			ICU Level of Service A		
Analysis Period (min)	15					

Lanes, Volumes, Timings

4: Green Lane East & Highway 404 North-East/West Off-Ramp

10/04/2024

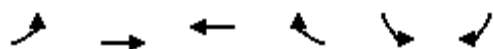


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↘↘	↗↗
Traffic Volume (vph)	0	997	1353	0	22	321
Future Volume (vph)	0	997	1353	0	22	321
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Width (m)	3.8	3.8	3.8	3.8	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	0.95
Frt					0.869	0.850
Flt Protected					0.994	
Satd. Flow (prot)	0	3771	3771	0	1773	1654
Flt Permitted					0.994	
Satd. Flow (perm)	0	3771	3771	0	1773	1654
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)					22	22
Link Speed (k/h)		70	70		60	
Link Distance (m)		303.3	111.8		268.4	
Travel Time (s)		15.6	5.7		16.1	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	3%	3%	0%	0%	2%
Adj. Flow (vph)	0	1061	1439	0	23	341
Shared Lane Traffic (%)						47%
Lane Group Flow (vph)	0	1061	1439	0	183	181
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		4.0	
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	0.91	0.91	0.91	0.91	0.88	0.88
Turning Speed (k/h)	24			14	24	14
Number of Detectors		2	2		1	1
Detector Template		Thru	Thru		Left	Right
Leading Detector (m)		30.5	30.5		6.1	6.1
Trailing Detector (m)		0.0	0.0		0.0	0.0
Detector 1 Position(m)		0.0	0.0		0.0	0.0
Detector 1 Size(m)		1.8	1.8		6.1	6.1
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)		0.0	0.0		0.0	0.0
Detector 1 Queue (s)		0.0	0.0		0.0	0.0
Detector 1 Delay (s)		0.0	0.0		0.0	0.0
Detector 2 Position(m)		28.7	28.7			
Detector 2 Size(m)		1.8	1.8			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type		NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases						4
Detector Phase		2	6		4	4

Lanes, Volumes, Timings

4: Green Lane East & Highway 404 North-East/West Off-Ramp

10/04/2024



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Switch Phase						
Minimum Initial (s)		30.0	30.0		15.0	15.0
Minimum Split (s)		37.7	37.7		22.2	22.2
Total Split (s)		52.7	52.7		37.2	37.2
Total Split (%)		58.6%	58.6%		41.4%	41.4%
Maximum Green (s)		45.0	45.0		30.0	30.0
Yellow Time (s)		5.9	5.9		5.1	5.1
All-Red Time (s)		1.8	1.8		2.1	2.1
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		7.7	7.7		7.2	7.2
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)		4.0	4.0		3.0	3.0
Recall Mode		Max	Max		Max	Max
Act Effect Green (s)		45.0	45.0		30.0	30.0
Actuated g/C Ratio		0.50	0.50		0.33	0.33
v/c Ratio		0.56	0.76		0.30	0.32
Control Delay		17.1	21.5		21.1	21.4
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		17.1	21.5		21.1	21.4
LOS		B	C		C	C
Approach Delay		17.1	21.5		21.2	
Approach LOS		B	C		C	

Intersection Summary

Area Type: Other

Cycle Length: 89.9

Actuated Cycle Length: 89.9

Natural Cycle: 60

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.76

Intersection Signal Delay: 19.8

Intersection LOS: B

Intersection Capacity Utilization 57.9%

ICU Level of Service B

Analysis Period (min) 15

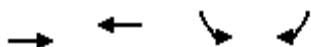
Splits and Phases: 4: Green Lane East & Highway 404 North-East/West Off-Ramp

→ Ø2		↖ Ø4
52.7 s		37.2 s
← Ø6		
52.7 s		

Queues

4: Green Lane East & Highway 404 North-East/West Off-Ramp

10/04/2024

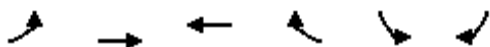


Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	1061	1439	183	181
v/c Ratio	0.56	0.76	0.30	0.32
Control Delay	17.1	21.5	21.1	21.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	17.1	21.5	21.1	21.4
Queue Length 50th (m)	63.8	100.6	20.1	21.0
Queue Length 95th (m)	81.8	127.0	36.5	38.4
Internal Link Dist (m)	279.3	87.8	244.4	
Turn Bay Length (m)				
Base Capacity (vph)	1887	1887	606	566
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.56	0.76	0.30	0.32
Intersection Summary				

HCM Signalized Intersection Capacity Analysis

4: Green Lane East & Highway 404 North-East/West Off-Ramp

10/04/2024



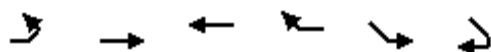
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↑↑	↑↑
Traffic Volume (vph)	0	997	1353	0	22	321
Future Volume (vph)	0	997	1353	0	22	321
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Width	3.8	3.8	3.8	3.8	4.0	4.0
Total Lost time (s)		7.7	7.7		7.2	7.2
Lane Util. Factor		0.95	0.95		1.00	0.95
Frt		1.00	1.00		0.87	0.85
Flt Protected		1.00	1.00		0.99	1.00
Satd. Flow (prot)		3771	3771		1773	1654
Flt Permitted		1.00	1.00		0.99	1.00
Satd. Flow (perm)		3771	3771		1773	1654
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	1061	1439	0	23	341
RTOR Reduction (vph)	0	0	0	0	15	15
Lane Group Flow (vph)	0	1061	1439	0	168	166
Heavy Vehicles (%)	0%	3%	3%	0%	0%	2%
Turn Type		NA	NA		Prot	Perm
Protected Phases		2	6		4	
Permitted Phases						4
Actuated Green, G (s)		45.0	45.0		30.0	30.0
Effective Green, g (s)		45.0	45.0		30.0	30.0
Actuated g/C Ratio		0.50	0.50		0.33	0.33
Clearance Time (s)		7.7	7.7		7.2	7.2
Vehicle Extension (s)		4.0	4.0		3.0	3.0
Lane Grp Cap (vph)		1887	1887		591	551
v/s Ratio Prot		0.28	c0.38		0.09	
v/s Ratio Perm						c0.10
v/c Ratio		0.56	0.76		0.28	0.30
Uniform Delay, d1		15.6	18.1		22.1	22.2
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		1.2	3.0		1.2	1.4
Delay (s)		16.8	21.1		23.3	23.6
Level of Service		B	C		C	C
Approach Delay (s)		16.8	21.1		23.4	
Approach LOS		B	C		C	
Intersection Summary						
HCM 2000 Control Delay		19.8		HCM 2000 Level of Service		B
HCM 2000 Volume to Capacity ratio		0.58				
Actuated Cycle Length (s)		89.9		Sum of lost time (s)		14.9
Intersection Capacity Utilization		57.9%		ICU Level of Service		B
Analysis Period (min)		15				

c Critical Lane Group

Lanes, Volumes, Timings

5: Green Lane East & Highway 404 East-South On-Ramp

10/04/2024

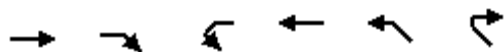


Lane Group	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations		↑↑	↑↑	↗		
Traffic Volume (vph)	0	14	30	0	0	0
Future Volume (vph)	0	14	30	0	0	0
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Width (m)	3.8	3.8	3.8	3.8	3.7	3.7
Storage Length (m)	0.0			70.0	0.0	0.0
Storage Lanes	0			0	0	0
Taper Length (m)	7.6				7.6	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	0	3808	3808	2004	0	0
Flt Permitted						
Satd. Flow (perm)	0	3808	3808	2004	0	0
Link Speed (k/h)		70	70		30	
Link Distance (m)		111.8	136.3		95.7	
Travel Time (s)		5.7	7.0		11.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	15	33	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	15	33	0	0	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		0.0	
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	0.91	0.91	0.91	0.91	0.92	0.92
Turning Speed (k/h)	24			97	97	14
Sign Control		Free	Free		Free	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 57.9%				ICU Level of Service B		
Analysis Period (min) 15						

Lanes, Volumes, Timings

6: Highway 404 West-North On-Ramp & Green Lane East

10/04/2024



Lane Group	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑↑	↑		↑↑		
Traffic Volume (vph)	5	20	0	0	0	0
Future Volume (vph)	5	20	0	0	0	0
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Width (m)	3.8	4.0	3.7	3.7	3.7	3.7
Storage Length (m)		15.0	0.0		0.0	0.0
Storage Lanes		1	0		0	0
Taper Length (m)			7.6		7.6	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt		0.850				
Flt Protected						
Satd. Flow (prot)	3808	1741	0	3767	0	0
Flt Permitted						
Satd. Flow (perm)	3808	1741	0	3767	0	0
Link Speed (k/h)	70			70	30	
Link Distance (m)	136.3			93.2	107.1	
Travel Time (s)	7.0			4.8	12.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	22	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	5	22	0	0	0	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	0.0	
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	0.91	0.88	0.92	0.92	0.92	0.92
Turning Speed (k/h)		14	24		24	14
Sign Control	Free			Free	Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

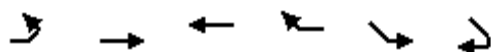
Intersection Capacity Utilization 6.7% ICU Level of Service A

Analysis Period (min) 15

Lanes, Volumes, Timings

7: Green Lane East & Highway 404 East-North On-Ramp

10/04/2024



Lane Group	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations		↑↑	↑↑	↑		
Traffic Volume (vph)	0	5	30	12	0	0
Future Volume (vph)	0	5	30	12	0	0
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Fr _t				0.850		
Flt Protected						
Satd. Flow (prot)	0	3767	3767	1719	0	0
Flt Permitted						
Satd. Flow (perm)	0	3767	3767	1719	0	0
Link Speed (k/h)		70	48		40	
Link Distance (m)		93.2	36.9		98.9	
Travel Time (s)		4.8	2.8		8.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	0%	2%	2%
Adj. Flow (vph)	0	5	33	13	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	5	33	13	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.8	3.8		0.0	
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	0.92	0.92	0.92	0.92	0.92	0.92
Turning Speed (k/h)	24			14	24	14
Sign Control		Free	Free		Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization 6.7%	ICU Level of Service A					
Analysis Period (min) 15						

Lanes, Volumes, Timings

8: Highway 404 South-East/West Off-Ramp/Carpool Parking Lot Access & Green Lane East

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	386	0	0	411	4	1012	3	82	4	0	20
Future Volume (vph)	6	386	0	0	411	4	1012	3	82	4	0	20
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width (m)	3.8	3.8	3.8	3.8	3.8	3.8	3.8	4.0	4.0	4.0	4.0	4.0
Storage Length (m)	20.0		0.0	0.0		20.0	0.0		60.0	0.0		0.0
Storage Lanes	1		0	0		0	1		1	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91	0.91	0.95	0.95	1.00	1.00	1.00	1.00
Fr't					0.999				0.850			0.850
Flt Protected	0.950						0.950	0.953		0.950		
Satd. Flow (prot)	1942	3771	0	0	5313	0	1791	1836	1675	1984	0	1776
Flt Permitted	0.436						0.950	0.953		0.950		
Satd. Flow (perm)	891	3771	0	0	5313	0	1791	1836	1675	1984	0	1776
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					1				111			111
Link Speed (k/h)		70			70			60			40	
Link Distance (m)		36.9			312.7			301.6			147.9	
Travel Time (s)		1.9			16.1			18.1			13.3	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	3%	0%	0%	5%	0%	3%	0%	6%	0%	0%	0%
Adj. Flow (vph)	6	411	0	0	437	4	1077	3	87	4	0	21
Shared Lane Traffic (%)							50%					
Lane Group Flow (vph)	6	411	0	0	441	0	538	542	87	4	0	21
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)		3.8			3.8			4.0			4.0	
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	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.88	0.88	0.88	0.88	0.88
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2			2		1	2	1	1		1
Detector Template	Left	Thru			Thru		Left	Thru	Right	Left		Right
Leading Detector (m)	6.1	30.5			30.5		6.1	30.5	6.1	6.1		6.1
Trailing Detector (m)	0.0	0.0			0.0		0.0	0.0	0.0	0.0		0.0
Detector 1 Position(m)	0.0	0.0			0.0		0.0	0.0	0.0	0.0		0.0
Detector 1 Size(m)	6.1	1.8			1.8		6.1	1.8	6.1	6.1		6.1
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0	0.0	0.0		0.0
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0	0.0	0.0		0.0
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0	0.0	0.0		0.0
Detector 2 Position(m)		28.7			28.7			28.7				
Detector 2 Size(m)		1.8			1.8			1.8				
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0				
Turn Type	pm+pt	NA			NA		Split	NA	Perm	Prot		Prot

Lanes, Volumes, Timings

8: Highway 404 South-East/West Off-Ramp/Carpool Parking Lot Access & Green Lane East

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	5	2			6		8	8		7		7
Permitted Phases	2								8			
Detector Phase	5	2			6		8	8	8	7		7
Switch Phase												
Minimum Initial (s)	7.0	20.0			20.0		10.0	10.0	10.0	10.0		10.0
Minimum Split (s)	11.0	41.0			41.0		40.5	40.5	40.5	17.5		17.5
Total Split (s)	19.0	74.0			55.0		57.5	57.5	57.5	30.5		30.5
Total Split (%)	11.7%	45.7%			34.0%		35.5%	35.5%	35.5%	18.8%		18.8%
Maximum Green (s)	15.0	66.0			47.0		50.0	50.0	50.0	23.0		23.0
Yellow Time (s)	3.0	5.0			5.0		4.5	4.5	4.5	4.5		4.5
All-Red Time (s)	1.0	3.0			3.0		3.0	3.0	3.0	3.0		3.0
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	4.0	8.0			8.0		7.5	7.5	7.5	7.5		7.5
Lead/Lag	Lead				Lag		Lag	Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	Yes				Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	4.0			4.0		3.0	3.0	3.0	3.0		3.0
Recall Mode	None	Ped			Ped		None	None	None	None		None
Walk Time (s)		7.0			7.0		7.0	7.0	7.0			
Flash Dont Walk (s)		26.0			26.0		26.0	26.0	26.0			
Pedestrian Calls (#/hr)		0			0		0	0	0			
Act Effct Green (s)	40.0	35.9			34.1		43.4	43.4	43.4	10.3		10.3
Actuated g/C Ratio	0.38	0.34			0.33		0.42	0.42	0.42	0.10		0.10
v/c Ratio	0.01	0.32			0.25		0.72	0.71	0.11	0.02		0.08
Control Delay	25.7	28.6			29.6		33.8	33.1	2.8	51.8		0.6
Queue Delay	0.0	0.0			0.0		0.0	0.0	0.0	0.0		0.0
Total Delay	25.7	28.6			29.6		33.8	33.1	2.8	51.8		0.6
LOS	C	C			C		C	C	A	D		A
Approach Delay		28.5			29.6			31.1			8.7	
Approach LOS		C			C			C			A	

Intersection Summary

Area Type: Other

Cycle Length: 162

Actuated Cycle Length: 104.5

Natural Cycle: 110

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.72

Intersection Signal Delay: 30.0

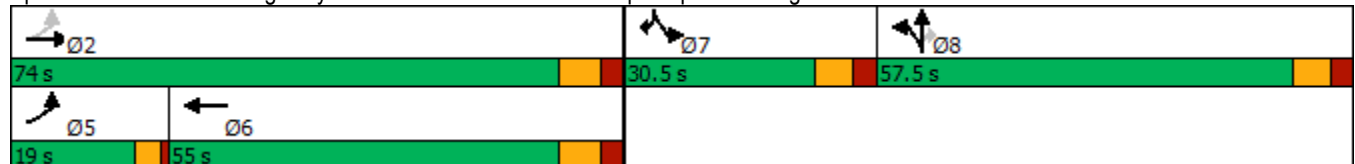
Intersection LOS: C

Intersection Capacity Utilization 70.9%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 8: Highway 404 South-East/West Off-Ramp/Carpool Parking Lot Access & Green Lane East



Queues

8: Highway 404 South-East/West Off-Ramp/Carpool Parking Lot Access & Green Lane East

								
Lane Group	EBL	EBT	WBT	NBL	NBT	NBR	SBL	SBR
Lane Group Flow (vph)	6	411	441	538	542	87	4	21
v/c Ratio	0.01	0.32	0.25	0.72	0.71	0.11	0.02	0.08
Control Delay	25.7	28.6	29.6	33.8	33.1	2.8	51.8	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.7	28.6	29.6	33.8	33.1	2.8	51.8	0.6
Queue Length 50th (m)	0.9	38.0	27.5	102.6	102.6	0.0	0.8	0.0
Queue Length 95th (m)	3.8	52.7	42.7	167.6	166.9	6.3	4.7	0.0
Internal Link Dist (m)		12.9	288.7		277.6			
Turn Bay Length (m)	20.0					60.0		
Base Capacity (vph)	496	2457	2466	884	906	883	450	489
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	0.17	0.18	0.61	0.60	0.10	0.01	0.04
Intersection Summary								

HCM Signalized Intersection Capacity Analysis

8: Highway 404 South-East/West Off-Ramp/Carpool Parking Lot Access & Green Lane East

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	386	0	0	411	4	1012	3	82	4	0	20
Future Volume (vph)	6	386	0	0	411	4	1012	3	82	4	0	20
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Lane Width	3.8	3.8	3.8	3.8	3.8	3.8	3.8	4.0	4.0	4.0	4.0	4.0
Total Lost time (s)	4.0	8.0			8.0		7.5	7.5	7.5	7.5		7.5
Lane Util. Factor	1.00	0.95			0.91		0.95	0.95	1.00	1.00		1.00
Frt	1.00	1.00			1.00		1.00	1.00	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00		0.95	0.95	1.00	0.95		1.00
Satd. Flow (prot)	1942	3771			5311		1791	1836	1675	1984		1776
Flt Permitted	0.44	1.00			1.00		0.95	0.95	1.00	0.95		1.00
Satd. Flow (perm)	891	3771			5311		1791	1836	1675	1984		1776
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	6	411	0	0	437	4	1077	3	87	4	0	21
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	53	0	0	20
Lane Group Flow (vph)	6	411	0	0	440	0	538	542	34	4	0	1
Heavy Vehicles (%)	0%	3%	0%	0%	5%	0%	3%	0%	6%	0%	0%	0%
Turn Type	pm+pt	NA			NA		Split	NA	Perm	Prot		Prot
Protected Phases	5	2			6		8	8		7		7
Permitted Phases	2								8			
Actuated Green, G (s)	39.3	39.3			34.1		43.4	43.4	43.4	5.3		5.3
Effective Green, g (s)	39.3	39.3			34.1		43.4	43.4	43.4	5.3		5.3
Actuated g/C Ratio	0.35	0.35			0.31		0.39	0.39	0.39	0.05		0.05
Clearance Time (s)	4.0	8.0			8.0		7.5	7.5	7.5	7.5		7.5
Vehicle Extension (s)	3.0	4.0			4.0		3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	326	1335			1631		700	717	654	94		84
v/s Ratio Prot	0.00	c0.11			0.08		c0.30	0.30		c0.00		0.00
v/s Ratio Perm	0.01								0.02			
v/c Ratio	0.02	0.31			0.27		0.77	0.76	0.05	0.04		0.01
Uniform Delay, d1	23.3	26.0			29.0		29.4	29.2	21.0	50.4		50.4
Progression Factor	1.00	1.00			1.00		1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2	0.0	0.2			0.1		5.1	4.6	0.0	0.2		0.1
Delay (s)	23.3	26.2			29.2		34.5	33.8	21.0	50.6		50.4
Level of Service	C	C			C		C	C	C	D		D
Approach Delay (s)		26.1			29.2			33.2			50.4	
Approach LOS		C			C			C			D	
Intersection Summary												
HCM 2000 Control Delay			31.1				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.54									
Actuated Cycle Length (s)			111.0				Sum of lost time (s)			27.0		
Intersection Capacity Utilization			70.9%				ICU Level of Service			C		
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings

101: Leslie Street & Industrial Development Site Access

10/04/2024

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			 			 
Traffic Volume (vph)	0	0	964	0	0	518
Future Volume (vph)	0	0	964	0	0	518
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Storage Length (m)	0.0	0.0		60.0	30.0	
Storage Lanes	1	1		1	1	
Taper Length (m)	2.5				2.5	
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Frt						
Flt Protected						
Satd. Flow (prot)	1983	1983	3767	1983	1983	3767
Flt Permitted						
Satd. Flow (perm)	1983	1983	3767	1983	1983	3767
Link Speed (k/h)	48		48			48
Link Distance (m)	318.5		282.0			250.3
Travel Time (s)	23.9		21.2			18.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	1048	0	0	563
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	1048	0	0	563
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.7		3.7			3.7
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	1.6		1.6			1.6
Two way Left Turn Lane						
Headway Factor	0.92	0.92	0.92	0.92	0.92	0.92
Turning Speed (k/h)	97	97		97	97	
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	28.6%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis

101: Leslie Street & Industrial Development Site Access

10/04/2024

									
Movement	WBL	WBR	NBT	NBR	SBL	SBT			
Lane Configurations									
Traffic Volume (veh/h)	0	0	964	0	0	518			
Future Volume (Veh/h)	0	0	964	0	0	518			
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)	0	0	1048	0	0	563			
Pedestrians									
Lane Width (m)									
Walking Speed (m/s)									
Percent Blockage									
Right turn flare (veh)									
Median type			None			None			
Median storage veh									
Upstream signal (m)			282						
pX, platoon unblocked	0.81	0.81				0.81			
vC, conflicting volume	1330	524				1048			
vC1, stage 1 conf vol									
vC2, stage 2 conf vol									
vCu, unblocked vol	937	0				589			
tC, single (s)	6.8	6.9				4.1			
tC, 2 stage (s)									
tF (s)	3.5	3.3				2.2			
p0 queue free %	100	100				100			
cM capacity (veh/h)	213	878				795			
Direction, Lane #	WB 1	WB 2	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	
Volume Total	0	0	524	524	0	0	282	282	
Volume Left	0	0	0	0	0	0	0	0	
Volume Right	0	0	0	0	0	0	0	0	
cSH	1700	1700	1700	1700	1700	1700	1700	1700	
Volume to Capacity	0.00	0.00	0.31	0.31	0.00	0.00	0.17	0.17	
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lane LOS	A	A							
Approach Delay (s)	0.0		0.0			0.0			
Approach LOS	A								
Intersection Summary									
Average Delay			0.0						
Intersection Capacity Utilization			28.6%		ICU Level of Service		A		
Analysis Period (min)			15						

Lanes, Volumes, Timings
102: Extension of HWP & Site Access

10/04/2024

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	67	44	8	48	0
Future Volume (vph)	0	67	44	8	48	0
Ideal Flow (vphpl)	2000	2000	2000	2000	2000	2000
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865					
Flt Protected				0.960		
Satd. Flow (prot)	1715	0	0	1903	1983	0
Flt Permitted				0.960		
Satd. Flow (perm)	1715	0	0	1903	1983	0
Link Speed (k/h)	48			48	48	
Link Distance (m)	73.6			84.4	135.0	
Travel Time (s)	5.5			6.3	10.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	73	48	9	52	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	73	0	0	57	52	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	0.92	0.92	0.92	0.92	0.92	0.92
Turning Speed (k/h)	97	97	97			97
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	20.0%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis

102: Extension of HWP & Site Access

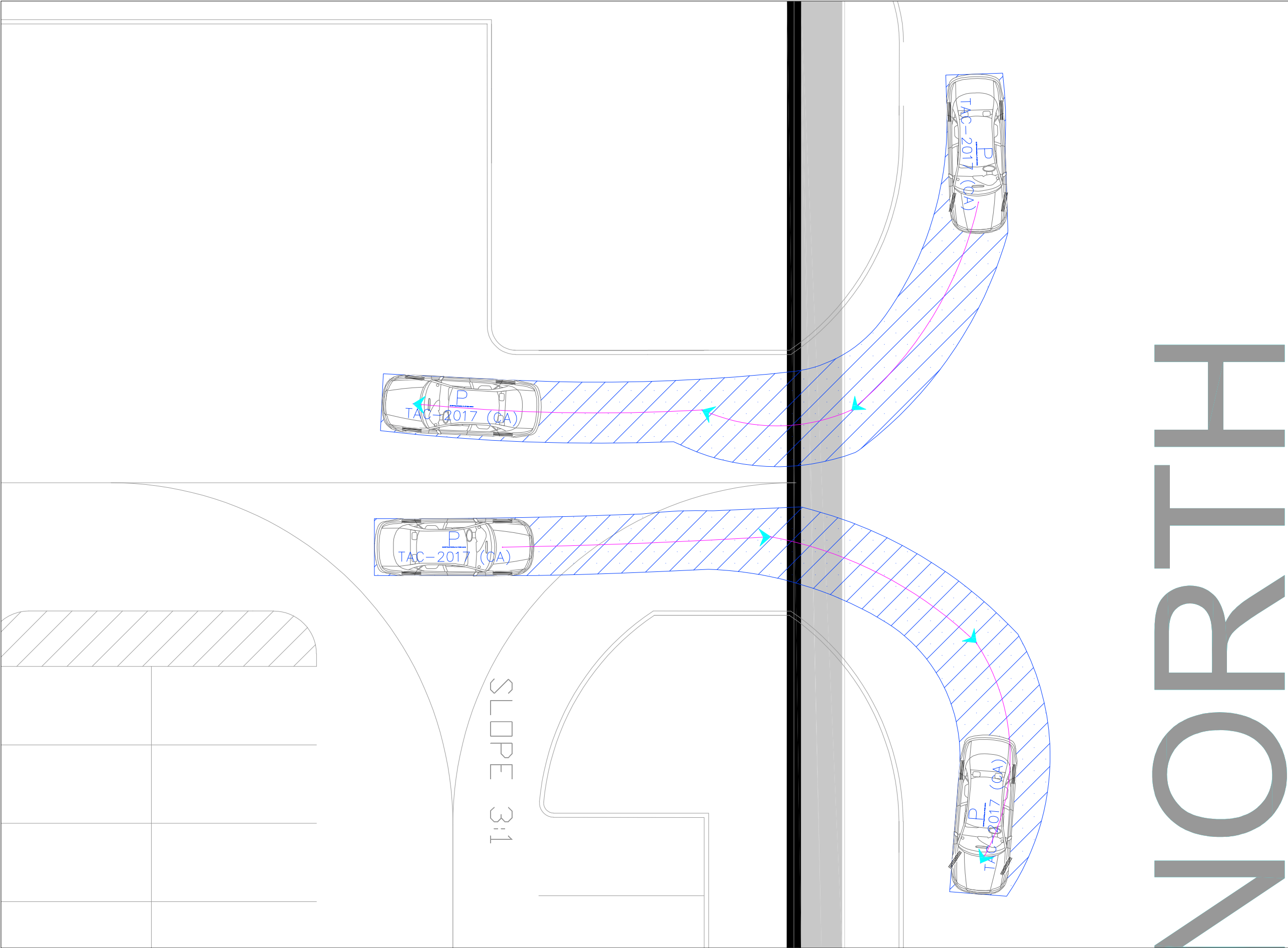
10/04/2024

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	67	44	8	48	0
Future Volume (Veh/h)	0	67	44	8	48	0
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)	0	73	48	9	52	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (m)				84		
pX, platoon unblocked						
vC, conflicting volume	157	52	52			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	157	52	52			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	93	97			
cM capacity (veh/h)	808	1016	1554			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	73	57	52			
Volume Left	0	48	0			
Volume Right	73	0	0			
cSH	1016	1554	1700			
Volume to Capacity	0.07	0.03	0.03			
Queue Length 95th (m)	1.8	0.7	0.0			
Control Delay (s)	8.8	6.3	0.0			
Lane LOS	A	A				
Approach Delay (s)	8.8	6.3	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			5.5			
Intersection Capacity Utilization		20.0%		ICU Level of Service		A
Analysis Period (min)			15			



Appendix G: Vehicle Maneuvering Diagrams

G:\Projects\2024\100534 - Toyota Green Lane\03 Analysis\03 Site Review & Circulation\2024\1009

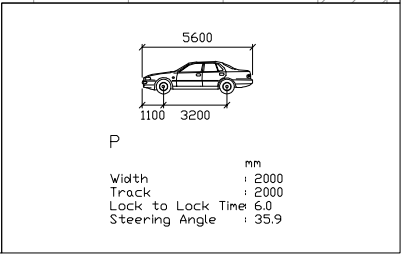
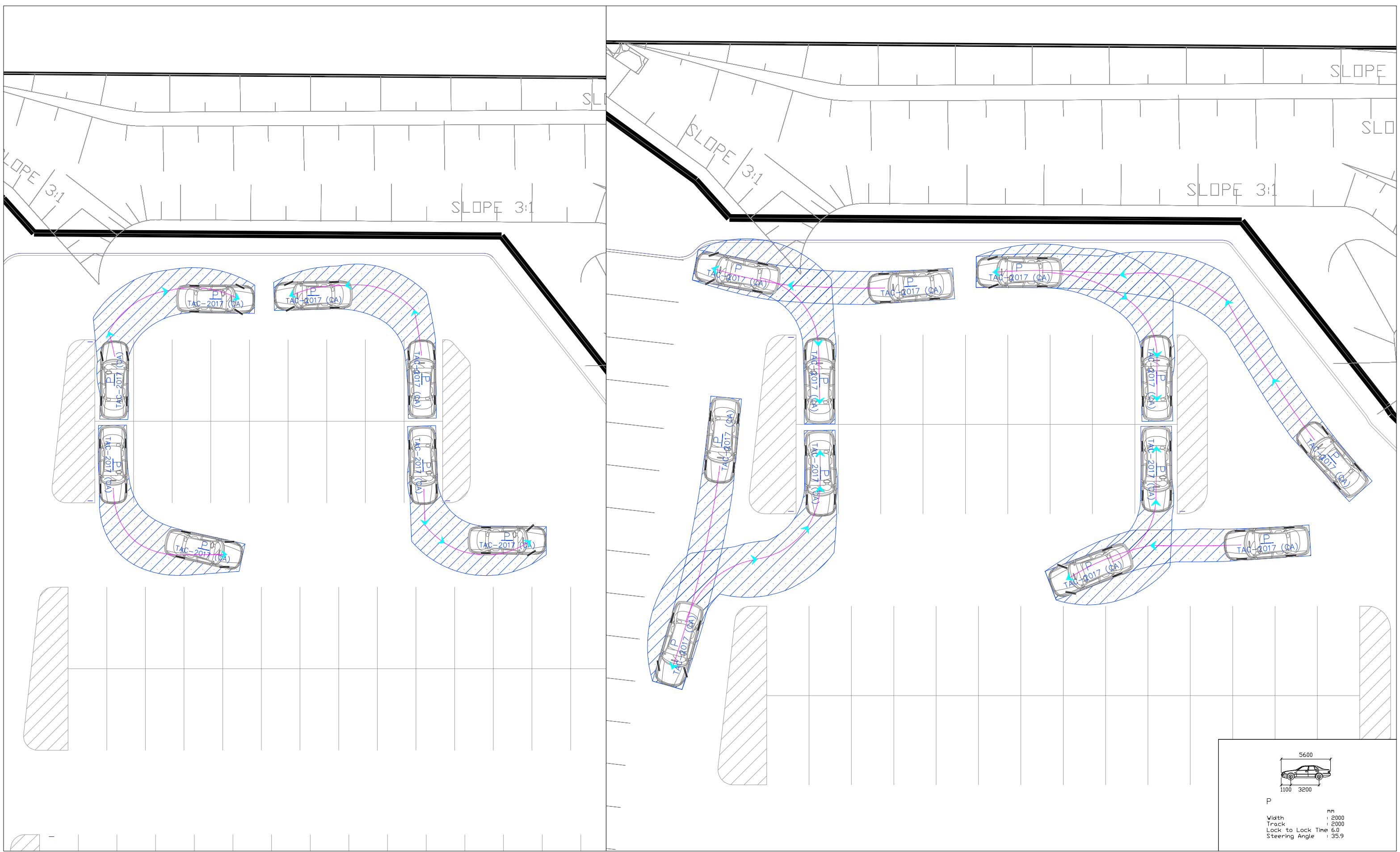


P

Width : 2000 mm
Track : 2000 mm
Lock to Lock Time : 6.0
Steering Angle : 35.9



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TYLin

3381 STEELES AVE E.
Suite 315
Toronto, ON
M2H 3S8
P: 905.738.5700

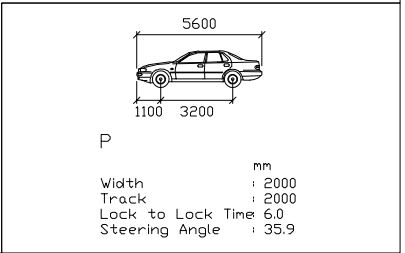
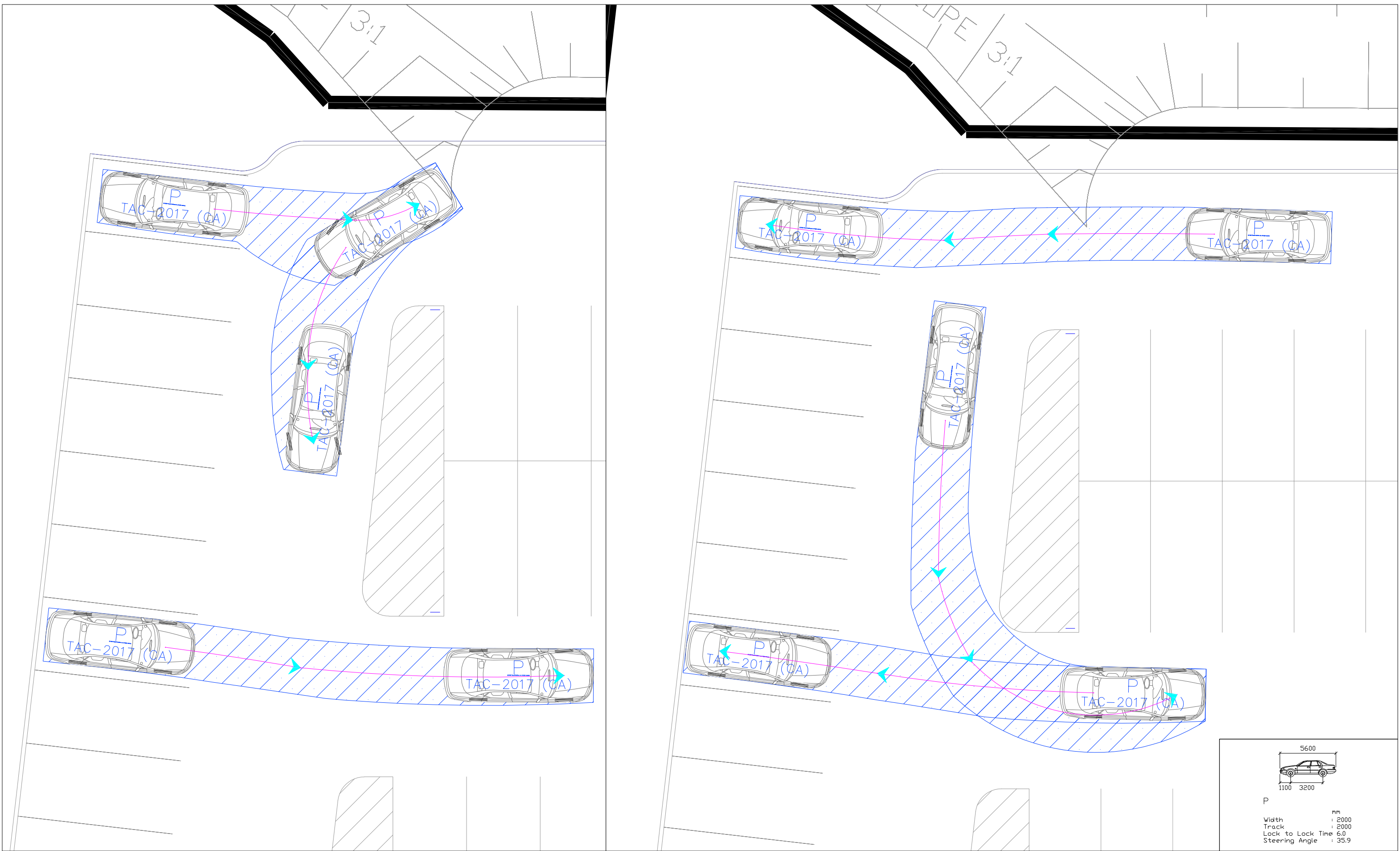
TOYOTA GREEN LANE
SITE PLAN REVIEW
PASSENGER VEHICLE CIRCULATION



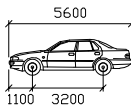
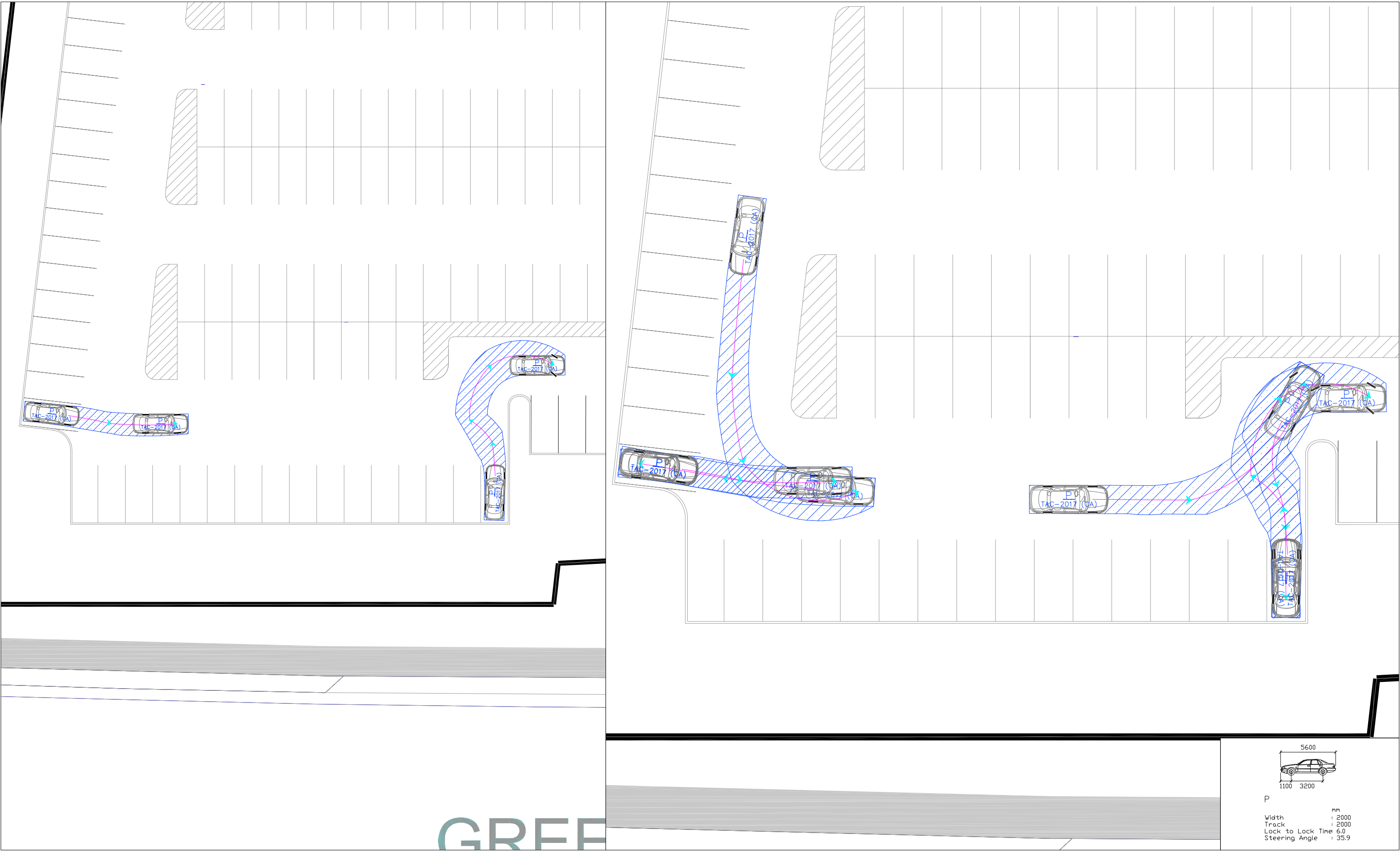
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002
DATE
OCT 2024

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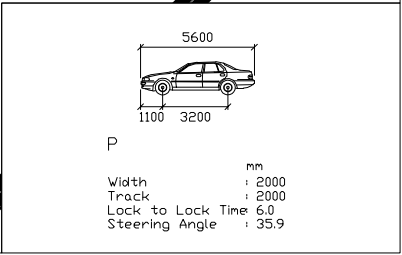
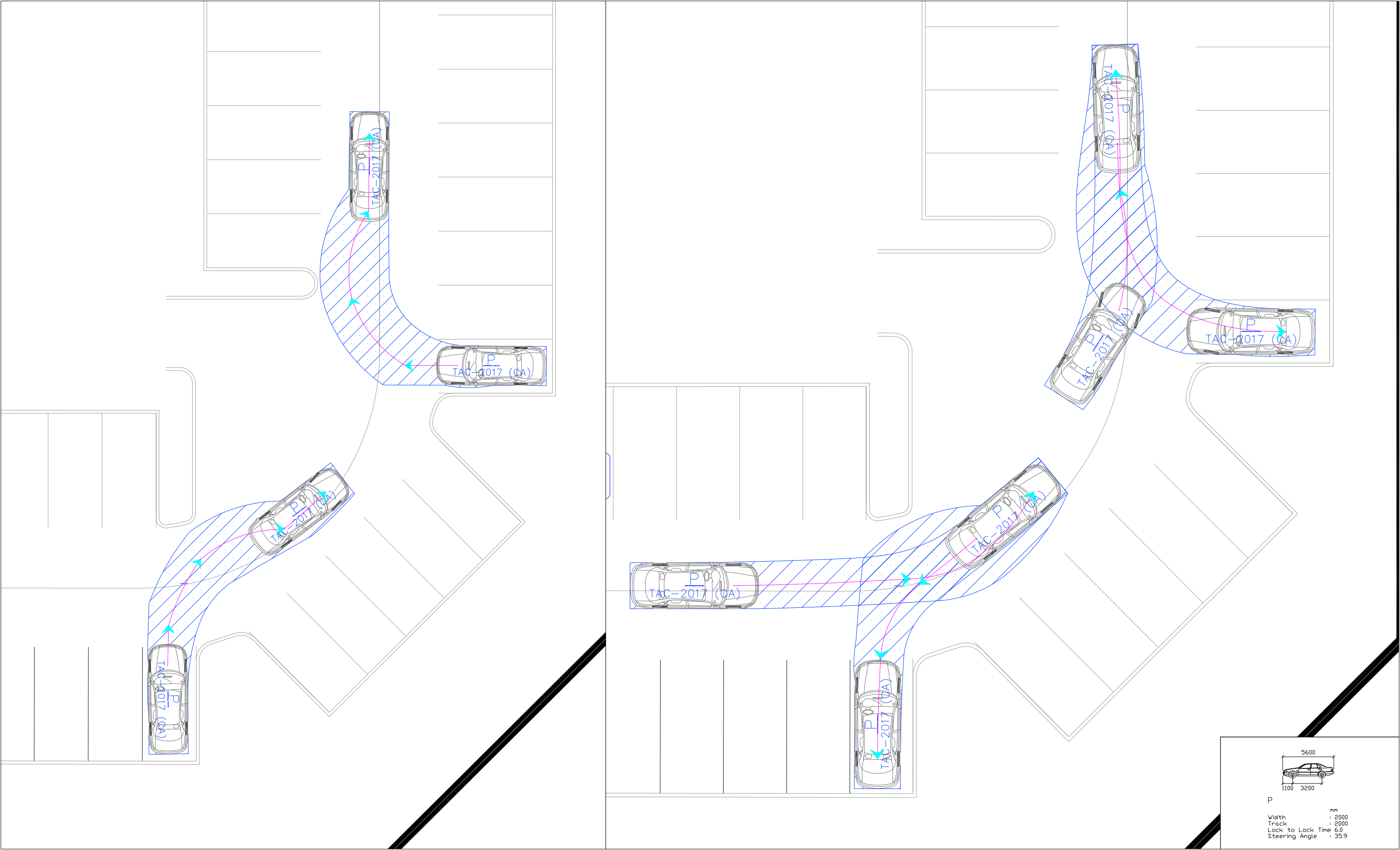
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P
Width : 2000
Track : 2000
Lock to Lock Time : 6.0
Steering Angle : 35.9

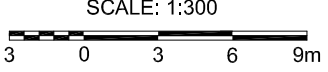


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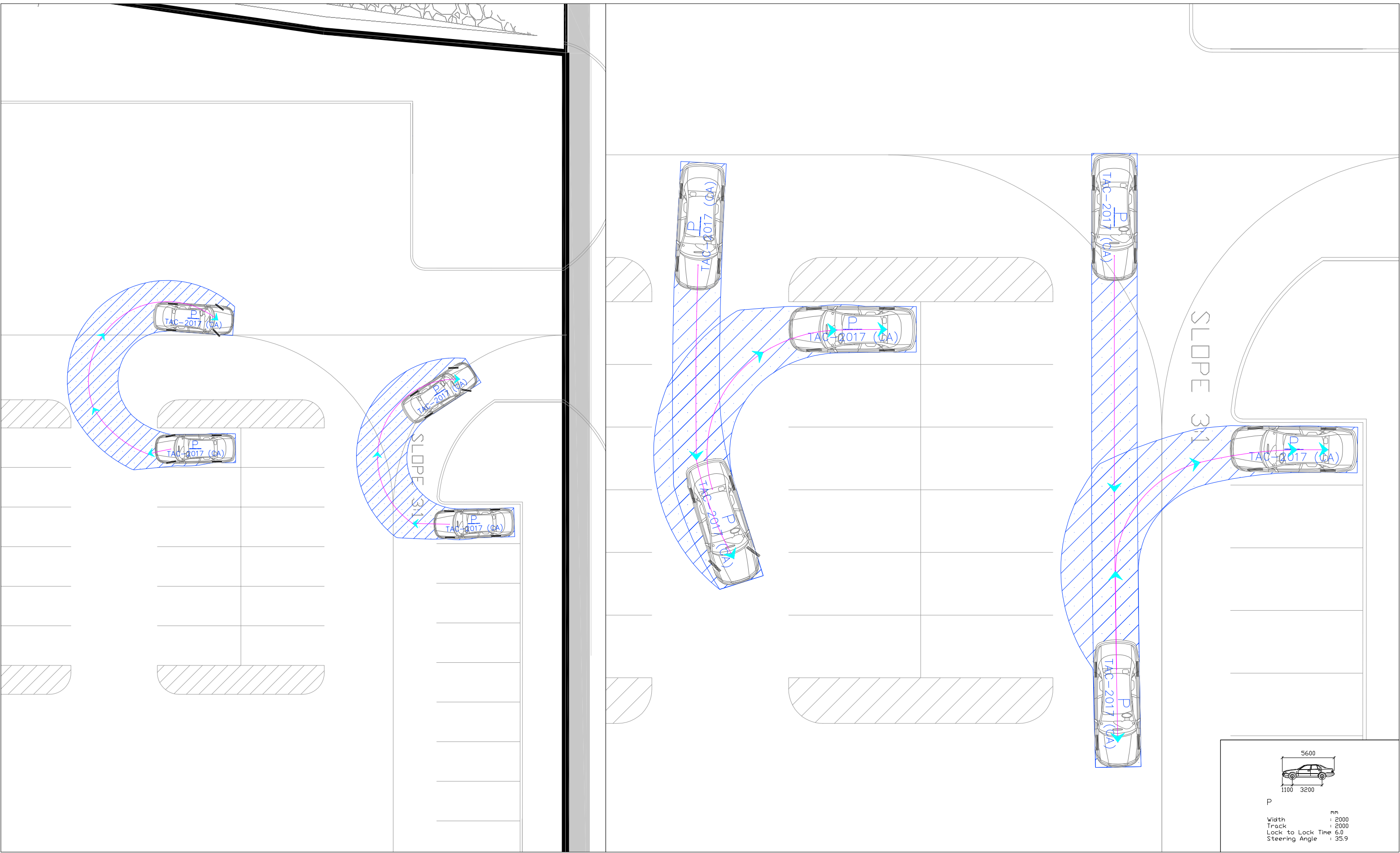
3381 STEELES AVE E.
Suite 315
Toronto, ON
M2H 3S8
P: 905.738.5700

TOYOTA GREEN LANE
SITE PLAN REVIEW
PASSENGER VEHICLE CIRCULATION



DRAWING No.
005
DATE
OCT 2024

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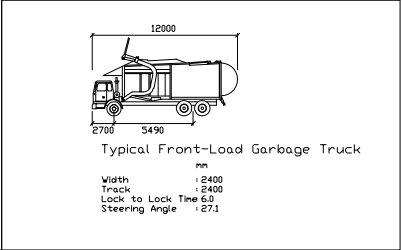
P

Width : 2000
Track : 2000
Lock to Lock Time : 6.0
Steering Angle : 35.9

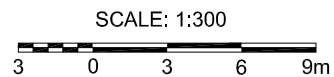
5600
1100 3200



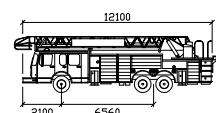
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TOYOTA GREEN LANE SITE PLAN REVIEW FIRE TRUCK CIRCULATION



DRAWING No.	008
DATE	OCT 2024



Newmarket - Fire

	mm
Width	2750
Track	2540
Lock to Lock Time	6.0
Steering Angle	37.0

HARRY WALKER PARKWAY NORTH



Appendix H:

Pavement Marking and Signage Plan

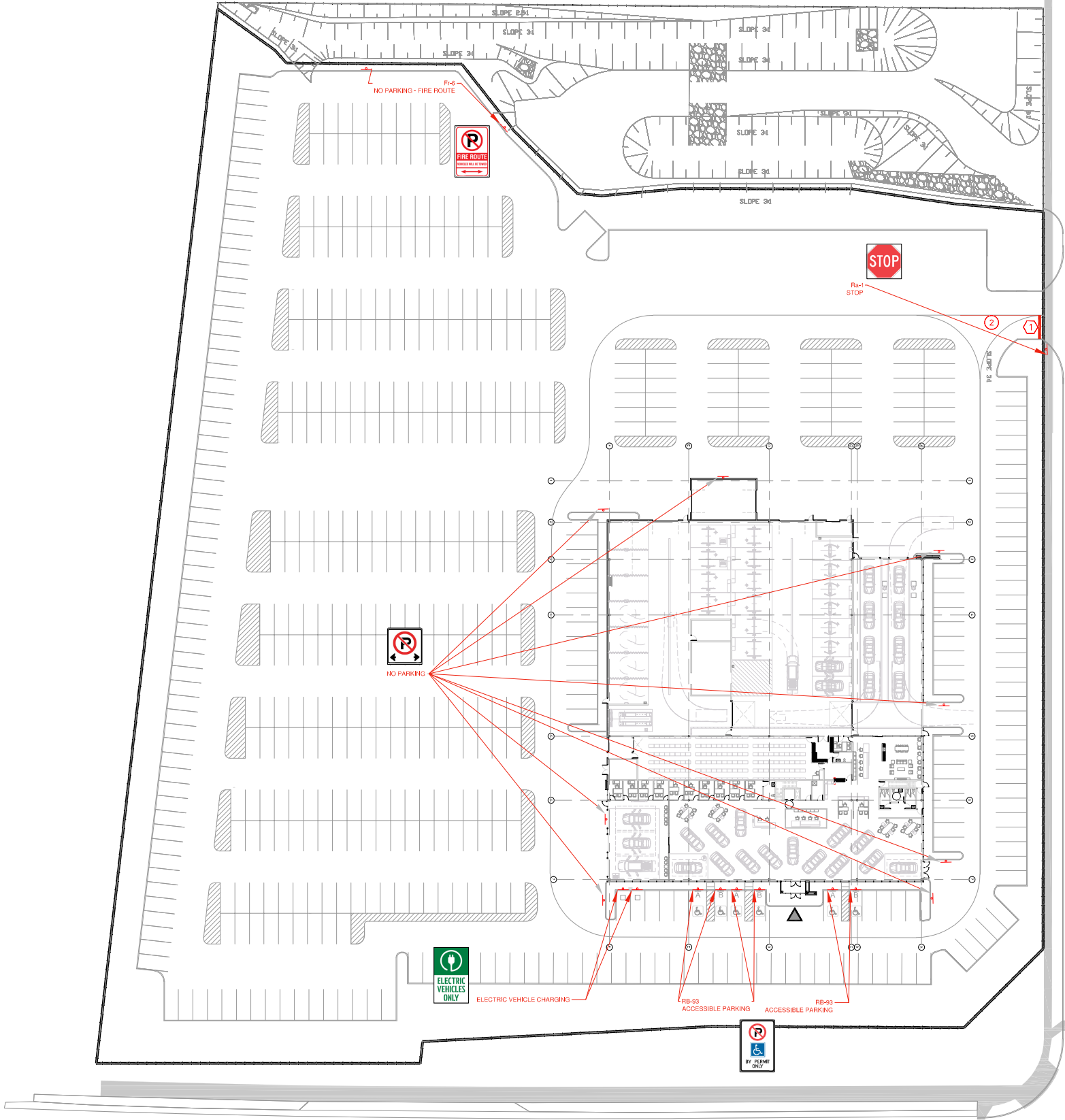
G:\Projects\2024\100534 - Toyota Green Lane\03 Analysis\04 PMS\2024\1022

TRAFFIC SIGN SCHEDULE			
SIGN NUMBER	SIGN NAME	QUANTITY	COMMENTS
Ra-1	STOP	1	
Rb-93	ACCESSIBLE PARKING PERMIT	6	
Fr-6	NO PARKING FIRE ROUTE	2	
-	ELECTRIC VEHICLE CHARGING	2	
Rb-51	NO PARKING	8	
TOTAL		19	

STOP SIGNS AND ALL OTHER REGULATORY AND WARNING SIGNS TO BE PLACED AS PER THE ONTARIO TRAFFIC MANUAL.

PAVEMENT MARKING LEGEND			
IDENTIFICATION	TYPE	COLOUR	WIDTH (cm)
1	SOLID	WHITE	60
2	SOLID	YELLOW	10

- DENOTES PAVEMENT MARKINGS
- DENOTES PAVEMENT MARKINGS, DURABLE



HARRY WALKER PARKWAY NORTH

GREEN LANE EAST

