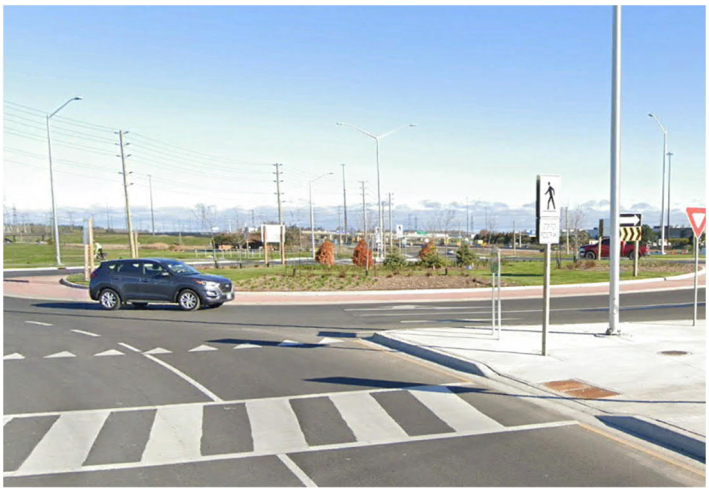

Ninth Line Coptic Church

Traffic Impact Study

DRAFT

January 31, 2022

Prepared for:

St. Mark and St. Demiana Coptic Orthodox Church

EXECUTIVE SUMMARY

R.V. Anderson Associates Limited has been retained by St. Mark and St. Demiana Coptic Orthodox Church to undertake a Traffic Impact Study for the proposed Coptic Church development, situated on the east side of Ninth Line (Regional Road 13) south of Burnhamthorpe Road West (Regional Road 27), in the City of Mississauga.

Phase 1 of the development is planned for completion in around 2028, will consist of the Coptic Church and Banquet Hall, and proposes a new full movement access on Ninth Line at the southern limit of the site.

Phase 2 of the development is planned for completion in around 2030, will consist of the Community Services Building, and proposes an internal site connection into the adjacent Access Storage site which will provide the site use of the existing partial moves access (left-in, right-in/out) on Ninth Line at the northern limit of the site.

The overall site is estimated to generate 144 inbound trips and 170 outbound trips during the weekday p.m. peak hour, 115 inbound trips and 12 outbound trips during the Saturday p.m. peak hour, and 209 inbound trips and 218 outbound trips during the Sunday a.m. peak hour.

The study intersections analyzed in this study included both the Burnhamthorpe Road West at Ninth Line roundabout, the Dundas Street East at Ninth Line signalized intersection, both of the signalized MTO Highway 403 off-ramp intersections on Dundas Street East, and both site accesses on Ninth Line.

The results of the capacity analysis up to the study's final 2040 horizon year indicate that all study intersections have sufficient capacity to accommodate the site generated traffic during peak hours, without requiring new geometric improvements to accommodate the additional traffic.

The proposed new access on Ninth Line meets the Region's access spacing guidelines, is optimally located at the southern limit of the site which is as far as possible from the existing access to the north and is required in order to provide access to Phase 1 of the development.

It is recommended signal timing adjustments at the signalized intersection of Dundas Street East at Ninth Line be implemented in conjunction with Phase 1 of the subject development in order to re-allocate some additional green time to the southbound left-turn movement to provide the needed additional capacity to accommodate the site generated traffic and maintain an acceptable level of service.

No geometric improvements are recommended at the study area intersections in response to the traffic generated from the subject development.

St. Mark and St. Demiana Coptic Orthodox Church

Ninth Line Coptic Church

Traffic Impact Study

Final

St. Mark and St. Demiana Coptic Orthodox Church

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January 31, 2022

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1.0 INTRODUCTION

1.1 Study Objective

R.V. Anderson Associates Limited (RVA) has been retained by St. Mark and St. Demiana Coptic Orthodox Church to undertake a Traffic Impact Study (TIS) for the proposed Coptic Church development, situated on the east side of Ninth Line (Regional Road 13) south of Burnhamthorpe Road West (Regional Road 27), in the City of Mississauga (the City). The overall development is planned to be completed in two (2) phases:

- Phase 1 consists of the Coptic Church with estimated completion in 2028; and
- Phase 2 consists of the Community Services Building with estimated completion in 2030.

1.2 Site Location

The proposed development is to be situated on the east side of Ninth Line, immediately south of the existing Access Storage property (self storage facility). The subject property is approximately 200 metres south of the existing roundabout intersection on Ninth Line at Burnhamthorpe Road West, and approximately 1.7 kilometres north of the existing signalized intersection of Ninth Line at Dundas Street East (Regional Road 5).

The site is afforded close proximity to the Highway 403 at Dundas Street West interchange to the south, as well as access to the numerous major arterial corridors in the area including Ninth Line, Burnhamthorpe Road West, Dundas Street East, and Eglinton Avenue West. The site is situated adjacent to the Ontario Ministry of Transportation (MTO) Highway 403 corridor which fronts the eastern frontage of the site. These freeway and arterial routes provide good access to the City of Mississauga, Town of Oakville, and other nearby municipalities in the Greater Toronto Hamilton Area (GTHA).

Notable land uses in the immediate area include a mix of uses to the east in the City of Mississauga, such as commercial uses, light-industrial uses, and residential subdivisions, residential subdivisions to the southwest in the Town of Oakville (the Town), and agricultural and natural lands to the west in the Town of Oakville. Notable establishments with access of Ninth Line in the vicinity of the subject site include the Access Storage immediately to the north, and Fern Hill School Oakville Campus, Glen Oaks Funeral Home and Cemetery, and Ninth Line Sports Park to the south

The project site location and the surrounding roadway network is shown in **Figure 1**.

1.3 Study Area

Based on consultation with City, Regional and MTO staff, the existing study intersections considered for traffic impact analysis in this study are listed below:

- Ninth Line at Burnhamthorpe Road West;
- Ninth Line at Dundas Street East;
- Dundas Street East at Highway 403 southbound off-ramp;
- Dundas Street East at Highway 403 northbound off-ramp.

Figure 1: Site Location

2.0 EXISTING CONDITIONS

2.1 Existing Road Network

Ninth Line (Regional Road 13) is a north-south arterial road under the jurisdiction of Halton Region. The roadway has a two-lane rural cross-section and a posted speed limit of 60km/h. In the vicinity of the site, it has a slight downgrade in the southbound direction, with a straight horizontal alignment. It widens to an urban four-lane cross-section in approach to the two-lane roundabout at Burnhamthorpe Road West to the north and widens to widens to an urban four-lane cross-section (plus auxiliary left and right-turn lanes) in approach to the signalized intersection at Dundas Street East to the south.

Burnhamthorpe Road West (Regional Road 27) is an east-west arterial road under the jurisdiction of Halton Region. The roadway has a four-lane urban cross-section and a posted speed limit of 60km/h in the area, which reduces to a two-lane rural cross-section further to the east and west outside of the study area. In the study area it is generally flat, with a curve in its horizontal alignment immediately west of its roundabout intersection with Ninth Line.

Dundas Street East (Regional Road 5) is an east-west arterial road under the jurisdiction of Halton Region. The roadway has a six-lane urban cross-section and a posted speed limit of 60km/h east of Ninth Line, and 70 km/w west of Ninth Line. In the study area it has a rolling vertical alignment, with a straight horizontal alignment. It has auxiliary left and right-turn lanes on approach to its signalized intersection with Ninth Line, and no auxiliary turn lanes on approach to its two signalized intersections with the Highway 403 off-ramps.

2.2 Transit

There are currently near-side transit stops in the eastbound and westbound directions on Dundas Street East at its intersection with Ninth Line, services by Oakville Transit (Route 24).

2.3 Active Transportation

There is currently multi-use path on both sides of Burnhamthorpe Road West to the west of Ninth Line, and multi-use path on the south side of Dundas Street East to the west of Ninth Line. There are no other pedestrian facilities in the study area, including none on Ninth Line.

2.4 Existing Traffic Data

Intersection turning movement count (TMC) data was collected at the existing study intersections in 2021 during the following peak periods:

- Weekday p.m. period (7:00 p.m. to 9:00 p.m.);
- Saturday period (5:00 p.m. to 9:00 p.m.); and
- Sunday period (8:00 a.m. to 12:00 p.m.).

Historical 2019 TMC data for the existing study intersections were received from Regional staff for review, and included the following peak periods:

- Weekday a.m. period (7:00 a.m. to 9:00 a.m.);
- Weekday midday period (11:00 a.m. to 2:00 p.m.); and
- Weekday p.m. period (3:00 p.m. to 6:00 p.m.).

Based on consultation with City, Regional, and MTO staff, in consideration for the planned peak operating periods for the on-site uses (which are described further in Section 4) the analysis has been completed for the weekday p.m. peak hour, Saturday p.m. peak hour, and Sunday a.m. peak hour. The existing peak hour intersection traffic volumes are shown in **Figure 2**.

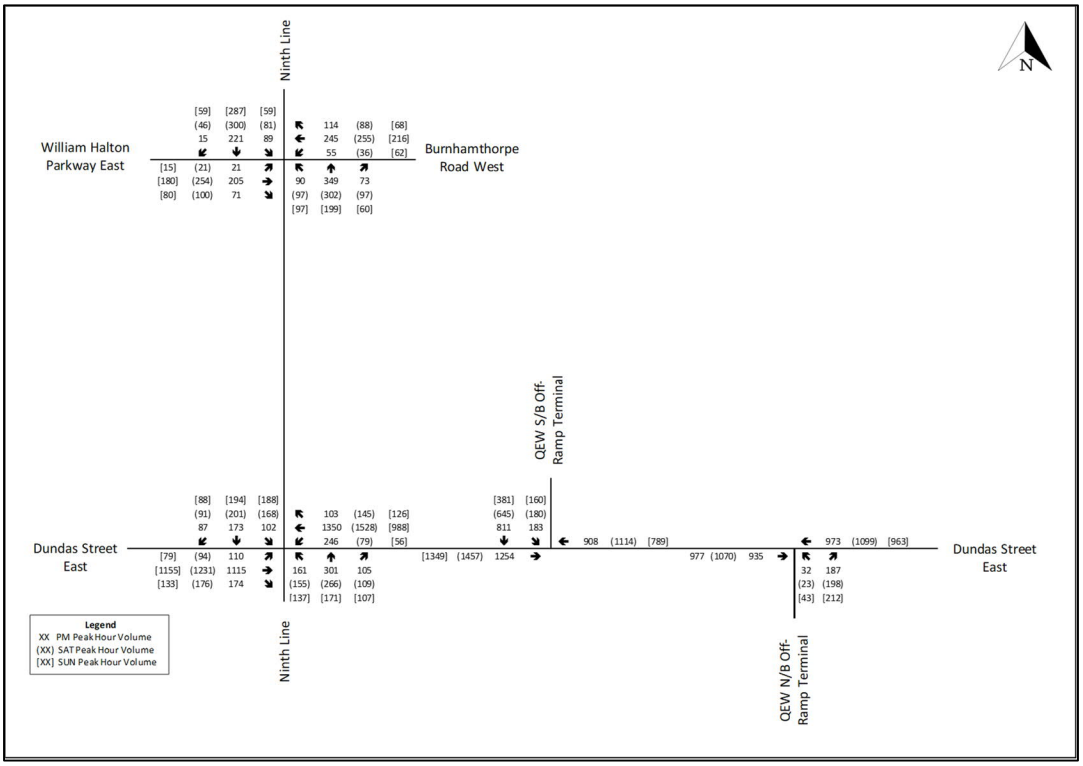


Figure 2: 2021 Existing Traffic Volumes

3.0 FUTURE BACKGROUND TRAFFIC

3.1 Study Horizon Years

Based on consultation with City, Regional, and MTO staff, the analysis included the following future planning horizons:

- 2028 for the opening year of Phase 1;
- 2030 for the opening year of Phase 2 (reflecting full build-out of overall development);
- 2035 for 5 years post full build-out; and
- 2040 for 10 years post full build-out.

3.2 Future Planned Study Area Road Network Improvements

As per the Region's Capital Implementation Plan (2018-2031), start of construction of the planned widening of Ninth Line from 2 lanes to 4 lanes, from Dundas Street East to Burnhamthorpe Road West, is scheduled for 2025. It is expected construction will be completed prior to the opening year of Phase 1 of the development in 2028.

Design plates for the proposed widening prepared as part of the Municipal Class Environmental Assessment (MCEA) for the Ninth Line widening were reviewed to confirm the planned changes to Ninth Line's cross-section, which in addition to the widening includes a 4.0-metre-wide raised centre median fronting the Access Storage property which encompasses an auxiliary left-turn lane that also restricts outbound left-turn movements from the Access Storage property). The raised centre median transitions to a 2.0-metre-wide painted median south of the Access Storage property, fronting the subject site, and then transitions to a 3.0-metre-wide painted median south of the subject site in order to accommodate centre left-turn lanes further south along the corridor. On-street bike lanes and 3.0-metre-wide in-boulevard multi-use path on both sides of Ninth Line are also proposed.

As per the Region's Transportation Master Plan (TMP), Ninth Line is planned to be a "C2 Urban" road cross-section, which consists of a 35 metres right-of-way, two-travel lanes per direction, a centre left-turn lane with raised median where required and dedicated active transportation facilities.

Based on the TMP, Ninth Line, Burnhamthorpe Road West and Dundas Street East in this area are not planned to service future high-order transit (i.e., bus rapid transit).

3.3 Future Background Development Traffic

As confirmed with City, Regional, and MTO staff, one background development was to be considered in this study. The completed Traffic Impact Study (TIS) for the proposed commercial development at 3855 Dundas Street West was provided to RVA, dated 2020. The development is proposed to include two two-storey buildings consisting of industrial uses, and one five-storey building consisting of self-storage space. The site is located at the northeast corner of the intersection of Ninth Line at Dundas Street East.

The TIS indicates that the anticipated peak operating periods for the background development is weekday mornings, weekday afternoons, and Saturday mid-day. These periods do not coincide with the analysis periods considered in this study (Coptic Church TIS), which assumed peak periods of weekday evenings, Saturday evenings, and Sunday mornings. Therefore, the estimated site traffic generated from the background development have not been included in this study. This is justified as industrial uses would typically not be operating on weekday evenings, Saturday evenings, and on Sunday mornings, and if operating for unique circumstances, the level of traffic generation would likely be nominal. Even if the site trips from this background development were considered in this study, the total added traffic to Ninth Line is less than 20 two-way trips during each peak hour.

Therefore, no background development traffic was considered in this study, with future growth projections for the study area road network being based on annualized corridor growth alone.

3.4 Future Background Traffic Growth

As determined by City, Regional, and MTO staff, the following annual growth rates were assumed:

- 2% per annum for the MTO off-ramp facilities;
- 2% per annum for Ninth Line and Dundas Street East;
- 5% and 2.5% per annum for the eastbound and westbound directions, respectively, on Burnhamthorpe Road West during the a.m. peak hour; and
- 2% and 3.5% per annum for the eastbound and westbound directions, respectively, on Burnhamthorpe Road West during the p.m. peak hour.

3.5 Future Background Traffic Volumes

The future background intersection traffic volumes for the future horizon years were derived by growing the existing intersection volumes by the growth rates described in Section 3.4 to the horizon years described in Section 3.1 accordingly. The resulting 2028, 2030, 2035 and 2040 corridor growth traffic volumes are shown in **Figure 3**, **Figure 4**, **Figure 5**, and **Figure 6**, respectively.

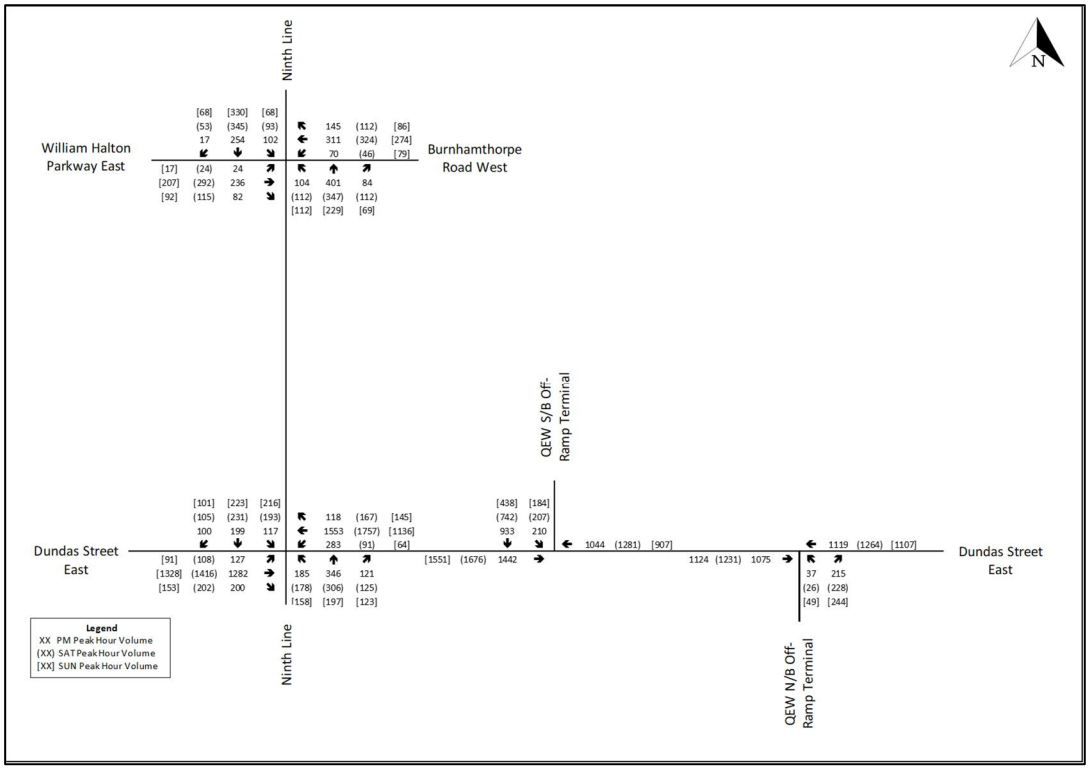


Figure 3: 2028 Future Background Traffic Volumes

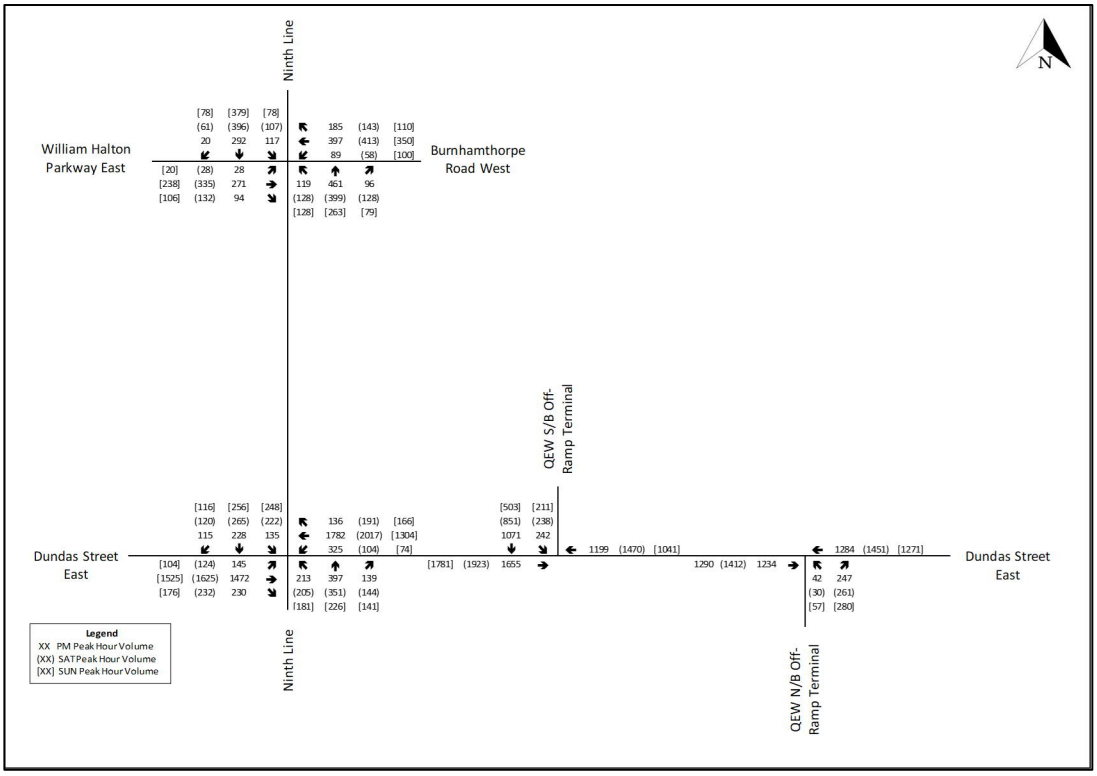


Figure 4: 2030 Future Background Traffic Volumes

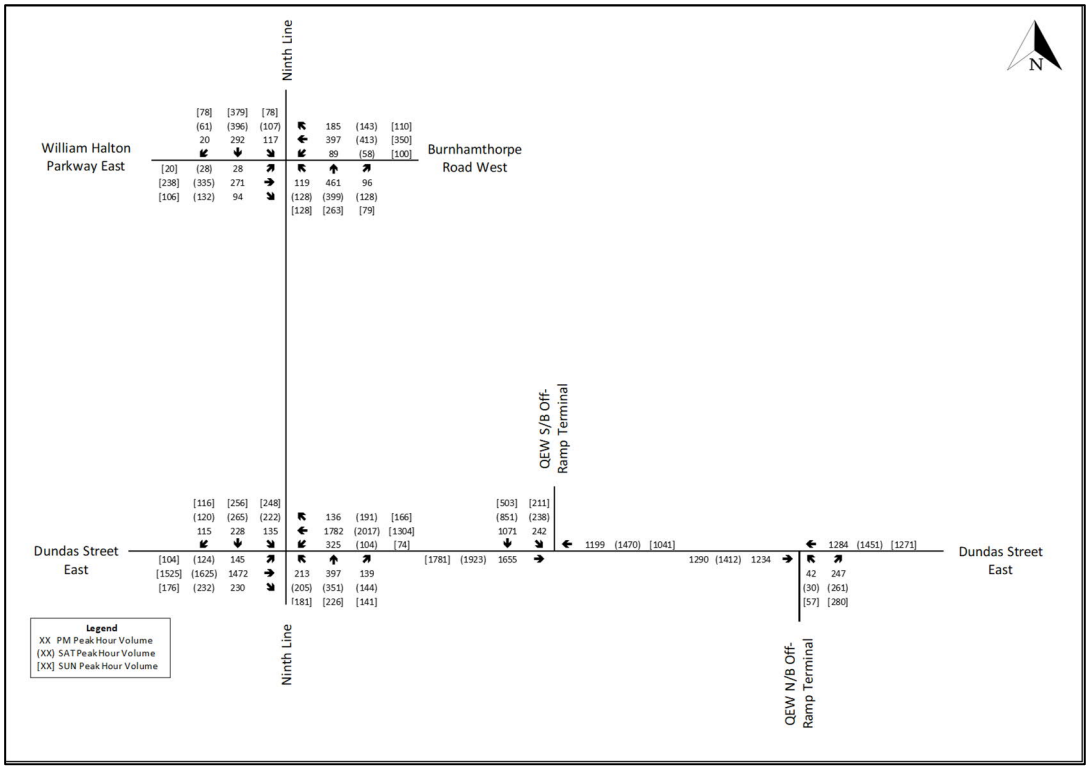


Figure 5: 2035 Future Background Traffic Volumes

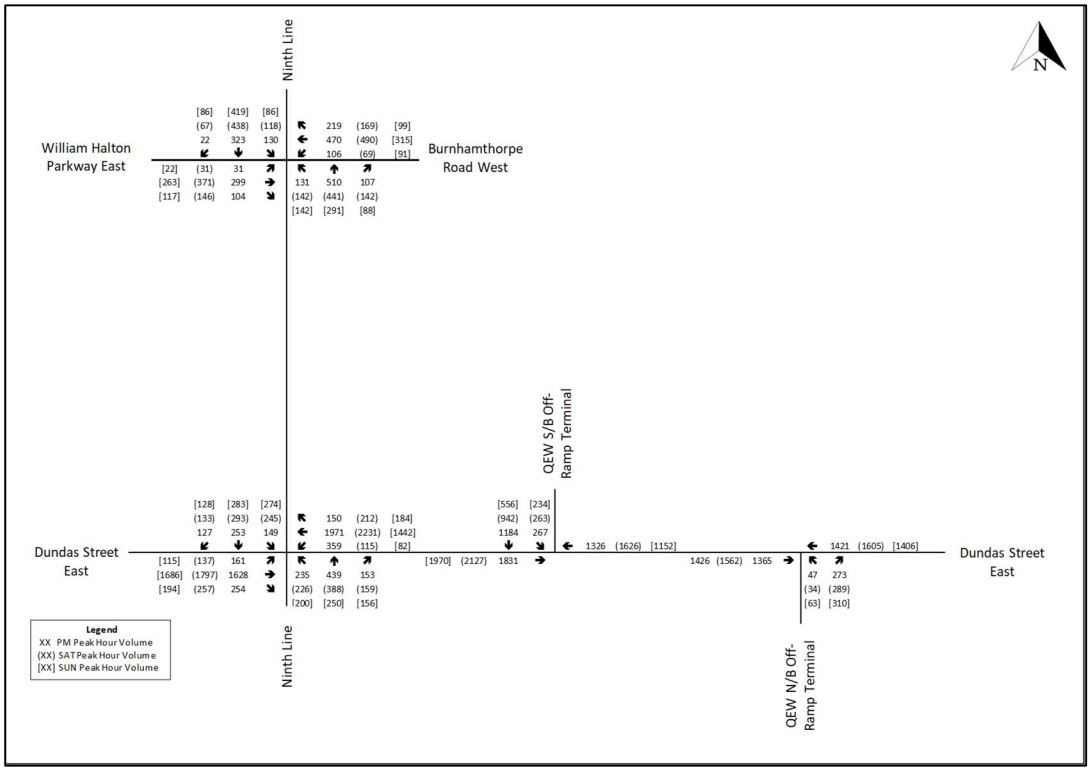


Figure 6: 2040 Future Background Traffic Volumes

4.0 SITE GENERATED TRAFFIC

4.1 Development Phasing

The proposed Site Plan prepared by Concept Architects and dated November 2021 is provided in **Appendix A** and consists of the following key features relevant to this study:

- Phase 1, Coptic Church and banquet hall, estimated completion in 2028
    - Church with 800-person seating capacity
    - Occasional use banquet hall with 310-person seating capacity (will be situated in the Church building
    - Introduction of new unsignalized access on Ninth Line at the southern limit of the site (full movement), with auxiliary left-turn lane on Ninth Line
    - Temporary internal site roadway connection to the existing unsignalized access on Ninth Line near the northern limit of the site (right-in/right-out/left-in), which includes an existing auxiliary left-turn lane on Ninth Line. Under Phase 1 this connection will be mainly used as a construction vehicle access.
- Phase 2, Community Services Building, estimated completion in 2030
    - Approximately 10,830 m^2 (116,573 ft^2) gross floor area (GFA), and will include classrooms and a recreation centre
    - Internal site roadway connection to the existing unsignalized access on Ninth Line near the northern limit of the site (right-in/right-out/left-in), which includes an existing auxiliary left-turn lane on Ninth Line. Under Phase 2 the access will be utilized by all site users.

4.2 Primary Operating Periods

The primary operating periods for the key on-site uses are as follows:

- **Weekday evenings** – Community Services Building, consisting of classes (7:00 p.m. to 9:00 p.m.) and a recreation centre (5 p.m. to 10:00 p.m.);
- **Saturday evenings** – Church use with attendance of approximately 50 persons (7:00 p.m. to 9:00 p.m.), and occasional use of the Banquet Hall with a 310-person seating capacity (5:00 p.m. to 10:00 p.m.); and
- **Sunday mornings** – Regular Church Service with an 800-person seating capacity (8:00 a.m. to 11:30 a.m.).

Based on the proposed uses and planned peak operating periods of these uses, these peak periods (weekday evening, Saturday evening, and Sunday morning) represent the analysis periods for this study.

4.3 Site Trip Generation

Trip generation for the Church and Community Services Building uses for the subject site was estimated utilizing the Institute of Transportation Engineer's (ITE) *Trip Generation Manual, 10th Edition*, referencing the ITE Land Use Codes (LUCs) for a Church (LUC #560) and a Recreational Community Centre (LUC #495).

There is currently no Banquet Hall land use provided in the ITE Trip Generation Manual. Therefore, in order to estimate the peak hour traffic generation for the Banquet Hall assuming a 310-person seating capacity for an occasional special event such as a wedding, RVA undertook background research on technically justifiable approaches for determining a reasonable trip generation rate for a similar lane use. An article prepared by a Professional Traffic Operations Engineer (PTOE) called *Estimating Trip Generation and Distribution for a Wedding Venue*[1] provides the following rational for a trip generation rate between 0.27 and 0.34:

- Assume 75% of the venue capacity will be the typical size used for trip generation.
- Assume the wedding party and vendors represent 10% of those attending the wedding and that they arrive more than one hour before the ceremony (i.e., outside of the peak hour). The remaining 90% will arrive during the one-hour peak period before the ceremony.
- Many of the wedding guests travel together as couples, families, or groups of friends. Assume there will be 2 to 2.5 guests per vehicle.
- Assume 100% of the trips generated are entering the site, which assumes trips exiting the site occur outside of the peak hour (i.e., later into the evening, and more dispersed).

If 2 guest per vehicles were assumed as a conservative approach, this would result in a trip generation rate of 0.34 trips per seat, which has been assumed for this study.

Table 1 presents the results of the trip generation analysis for each phase during the weekday p.m. peak hour, Saturday p.m. peak hour, and Sunday a.m. peak hour. A transit modal split reduction was not applied, reflecting the limited transit service currently provided in the vicinity of the site, and currently no planned future transit expansions in the vicinity of the site.

[1] Spack, M., Estimating Trip Generation and Distribution for a Wedding Venue, Mike on Traffic, 2018. (http://www.mikeontraffic.com/estimating-trip-generation-distribution-wedding-venue/)

Table 1: Trip Generation

Phase	Land Use	Capacity or gfa	Trip Rate or Equation	Total Trips	In/Out %	In/Out Trips
Phase 1	Saturday p.m. peak hour					
	Church	50 seats	0.44	22	46%/54%	10/12
	Banquet Hall	310 seats	0.34	105	100%/0%	105/0
	Sunday a.m. peak hour					
	Church	800 seats	T=0.63(X)-76.74	427	49%/51%	209/218
Phase 2	Weekday p.m. peak hour					
	Recreational Centre	116,573 ft^2	Ln(T)=0.58Ln(X)+2.99	314	46%/54%	144/170
Total Site	Weekday p.m. peak hour			314	144/170	
	Saturday p.m. peak hour			127	115/12	
	Sunday a.m. peak hour			427	209/218	

4.4 Site Trip Distribution

Based on a review of the development patterns of residential areas in the surrounding area, as well as the layout of the arterial road network and proximity of key intersection and interchange locations, the Trip Distribution assumptions shown in **Table 2** were developed and applied to the site generated traffic.

Table 2: Site Distribution

Direction (to/from)	Distribution Percentages
Highway 403 north of Dundas Street East	10%
Highway 403 south of Dundas Street East	10%
Burnhamthorpe Road West east of Ninth Line	20%
Dundas Street East west of Ninth Line	15%
Ninth Line north of Burnhamthorpe Road West	15%
Burnhamthorpe Road West west of Ninth Line	10%
Dundas Street East east of Highway 403	10%
Ninth Line south of Dundas Street East	10%
Total	**100%**

4.5 Site Trip Assignment

The assignment of site trips to individual turning movements at each study area intersection were development by routing the site generated traffic through the network based on the Trip Distribution assumptions provided in Section 4.4. The site trip assignment for Phase 1 (2028), Phase 2 (2030) and the combined full build-out (2030), are shown in **Figure 7**, **Figure 8**, and **Figure 9**, respectively.

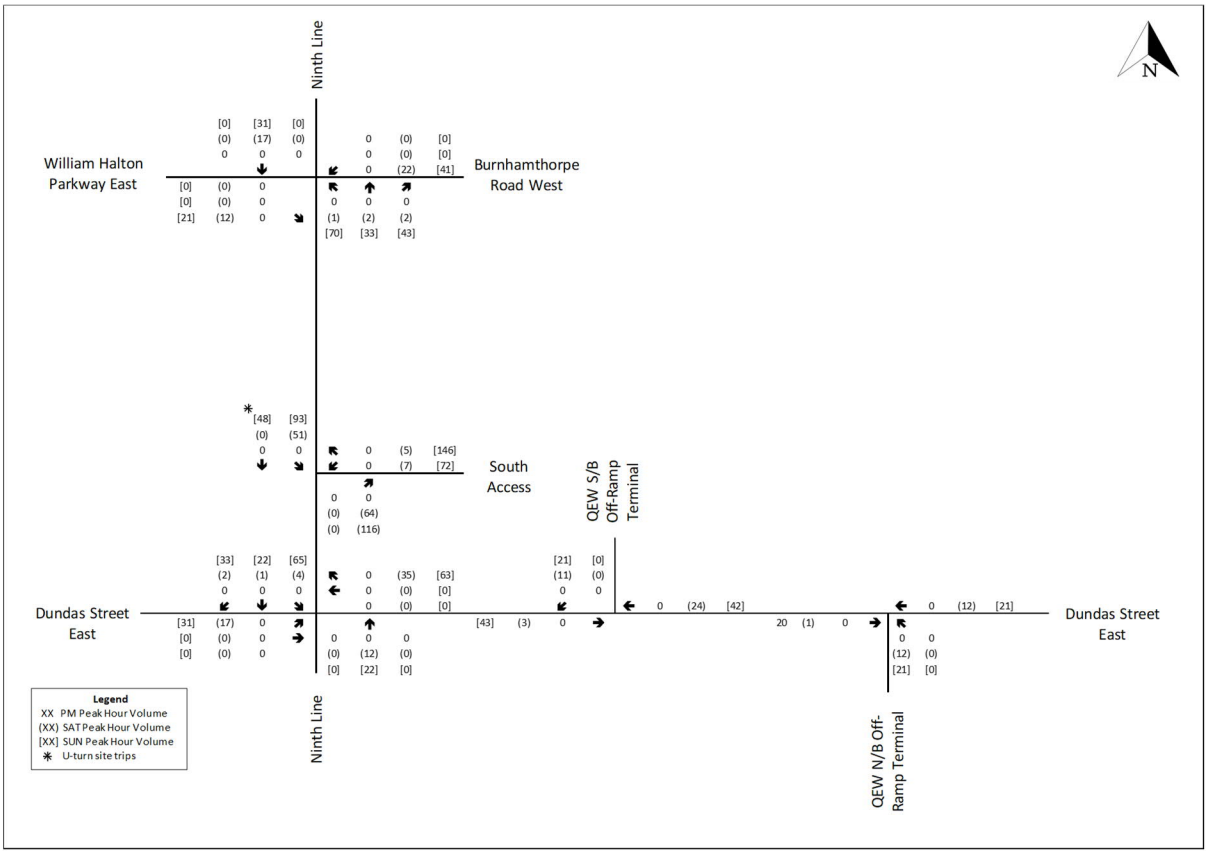


Figure 7: Phase 1 Site Trips

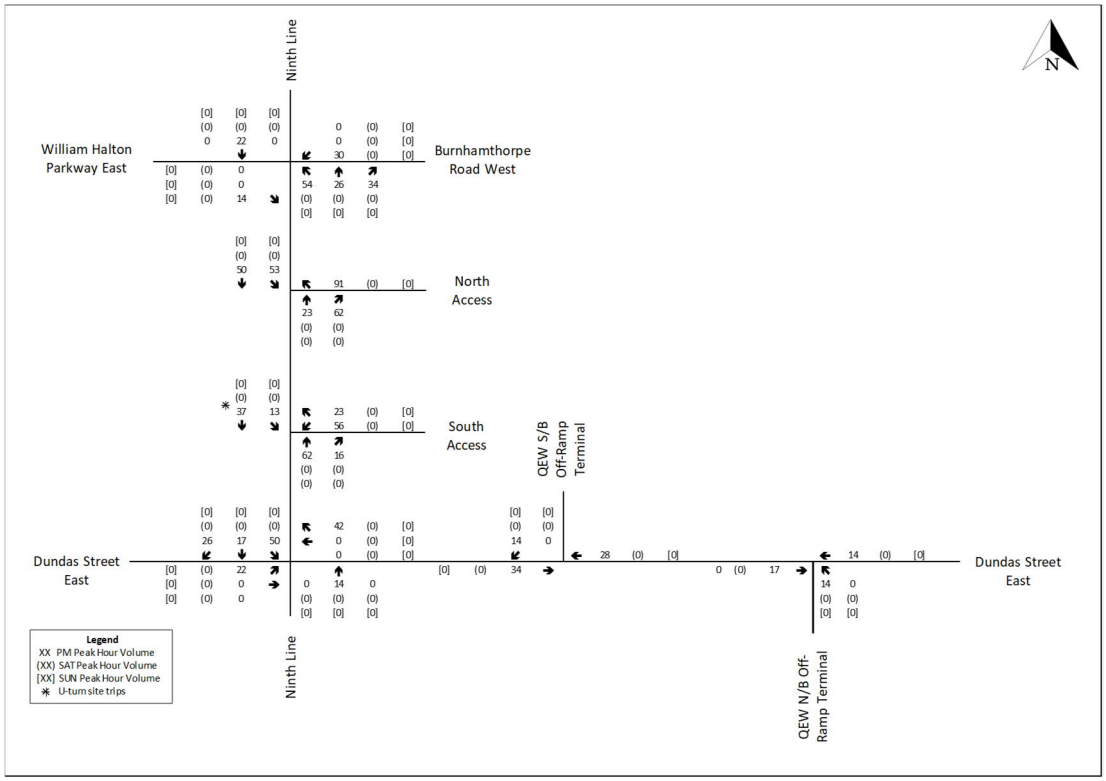


Figure 8: Phase 2 Site Trips

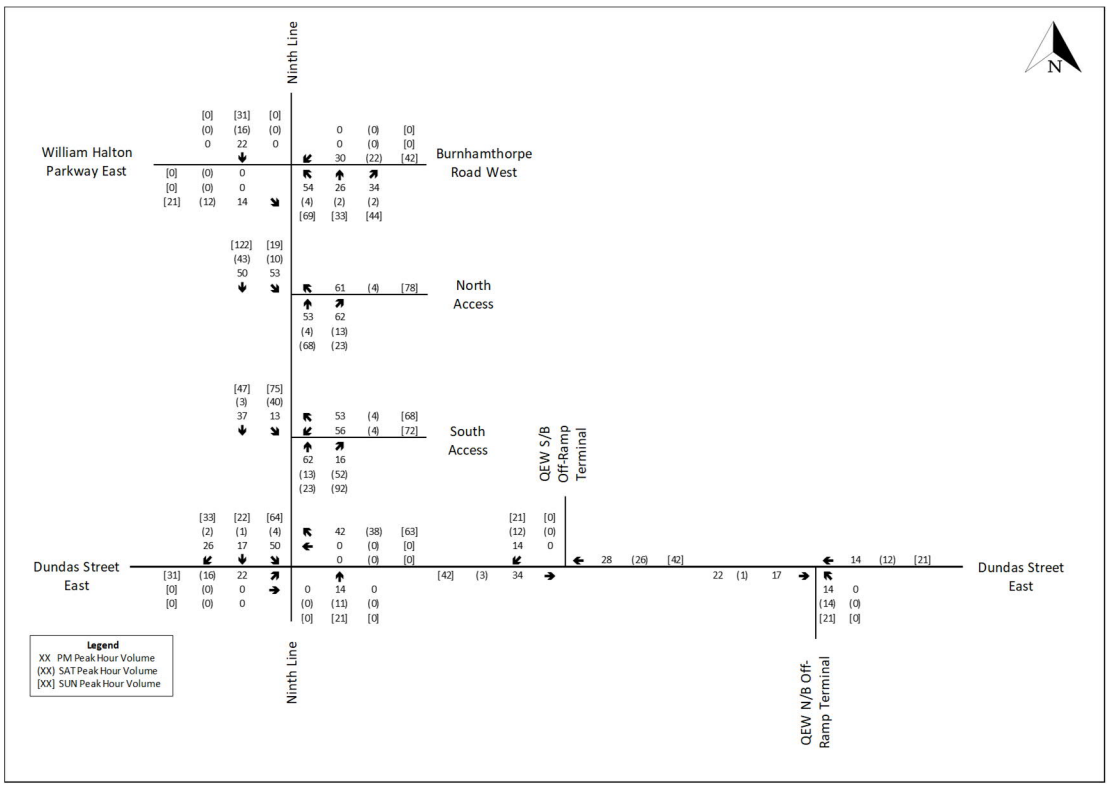


Figure 9: Total Site Trips

5.0 FUTURE TOTAL TRAFFIC

The future total intersection volumes for each future horizon year were derived by combining the future background traffic volumes with the site traffic assignment for each horizon year. The resulting 2028, 2030, 2035 and 2040 future total intersection volumes are presented in **Figure 10**, **Figure 11**, **Figure 12**, and **Figure 13,** respectively.

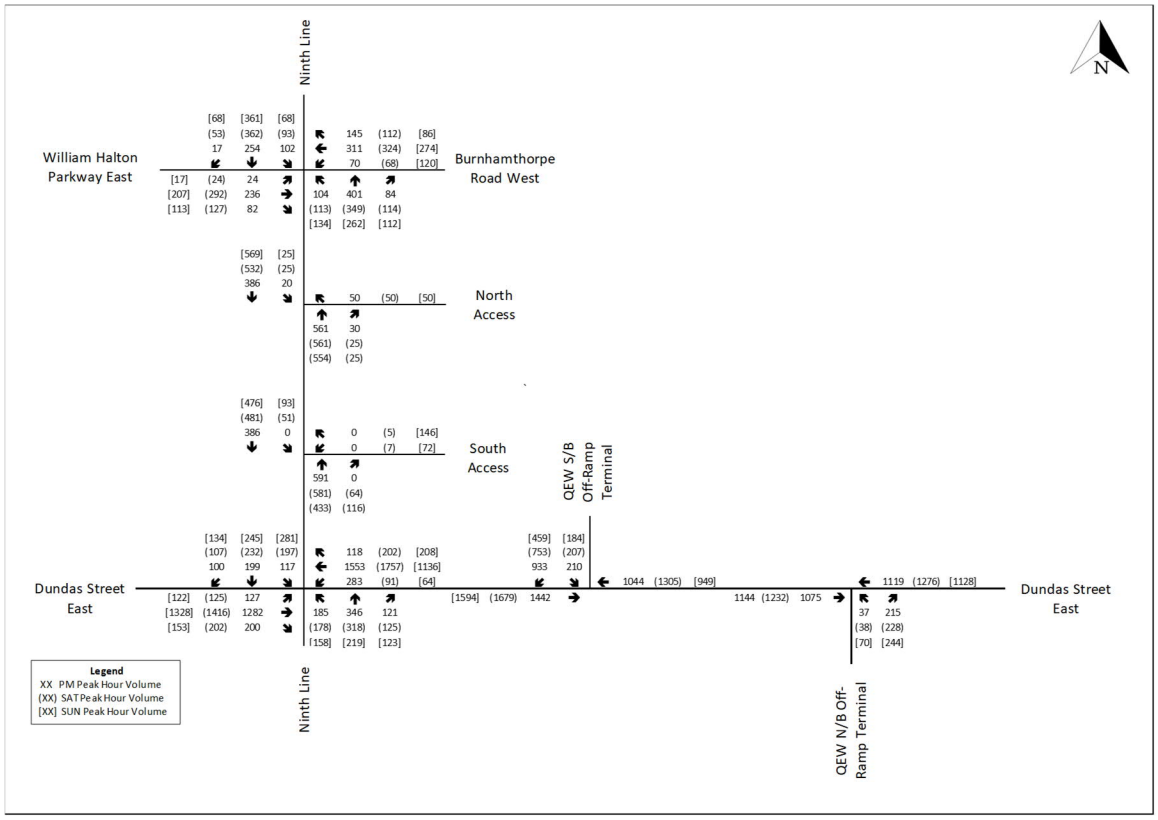


Figure 10: 2028 Future Total Traffic Volumes

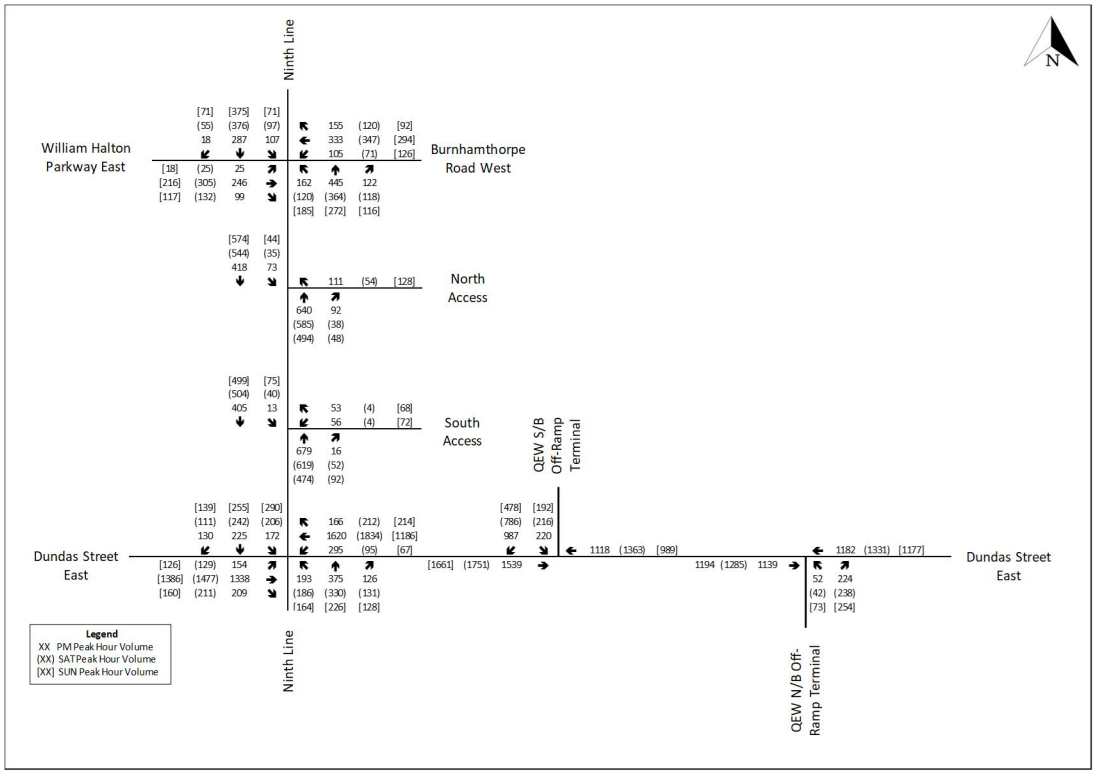


Figure 11: 2030 Future Total Traffic Volumes

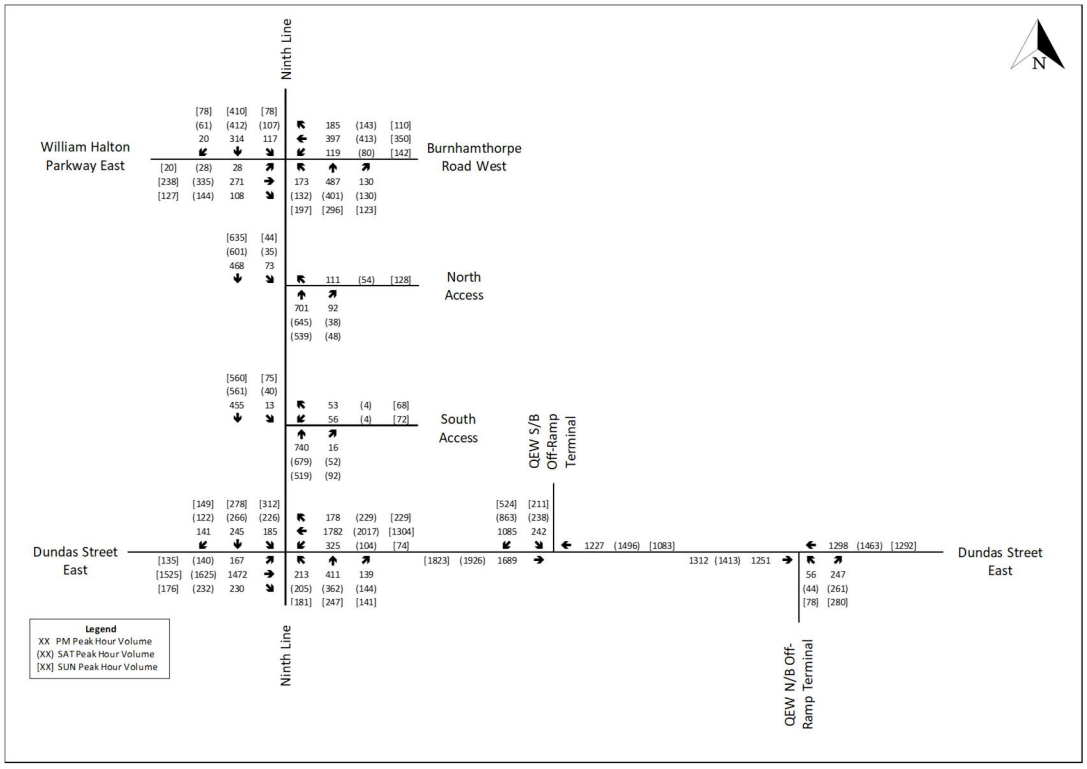


Figure 12: 2035 Future Total Traffic Volumes

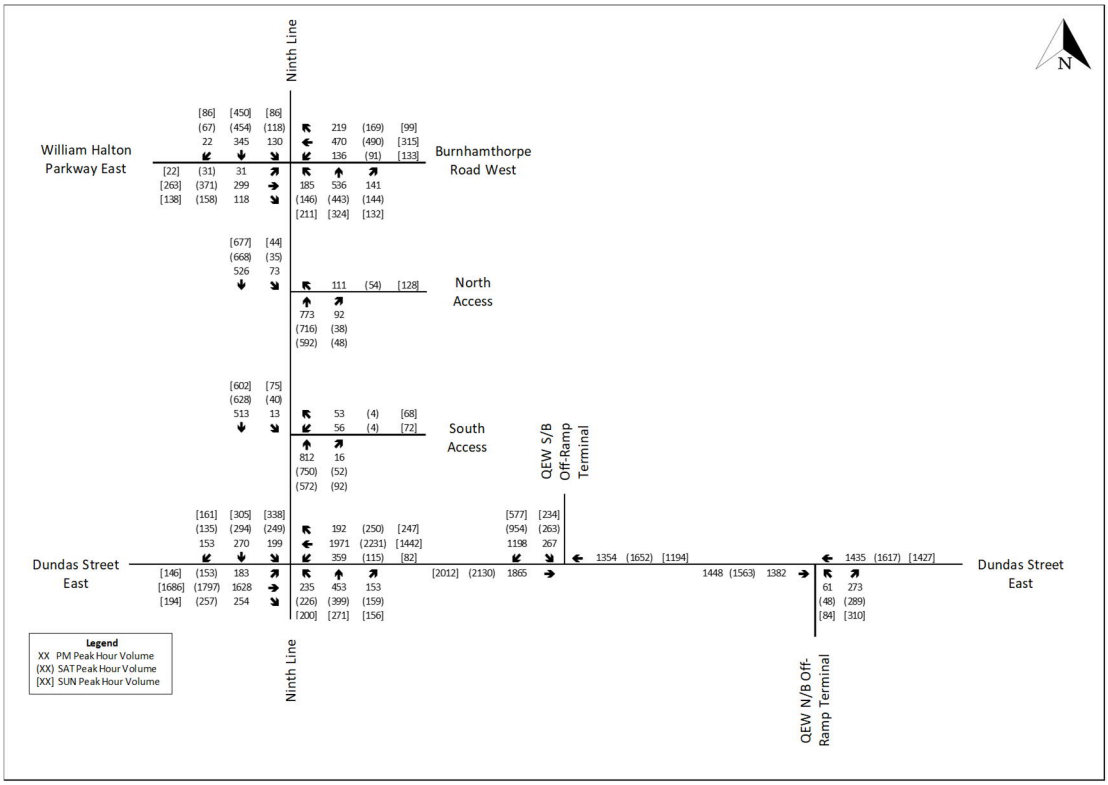


Figure 13: 2040 Future Total Traffic Volumes

6.0 LEFT-TURN LANE WARRANTS

RVA has completed MTO left-turn lane warrants for each of the site's proposed accesses, for both the "undivided" and "divided" highway scenarios for Ninth Line, for the 2040 horizon year. The results of the warrants indicate an auxiliary left-turn lane is warranted at each access location, with a 15-metre storage, regardless of Ninth Line being divided (via a raised centre median) or undivided in its ultimate cross-section. The completed left-turn lane warrant sheets for the undivided and divided roadway cross-sections are shown in **Figure 14** and **Figure 15**, respectively.

The capacity analysis completed for each proposed access under future conditions reflects the auxiliary left-turn lanes warranted in this table but will confirm the required storage length at each location.

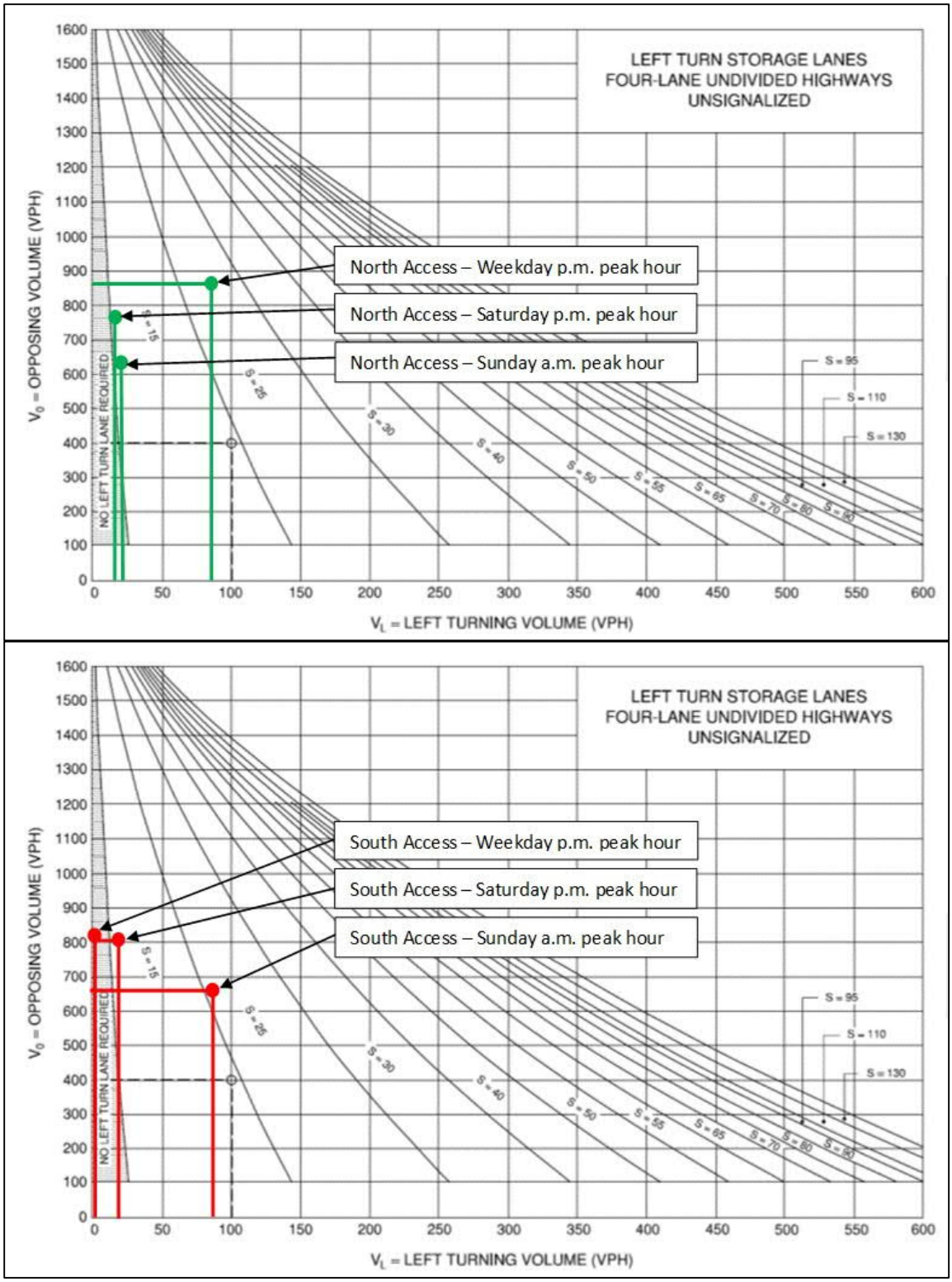


Figure 14: Left-Turn Lane Warrant - Undivided Roadway (2040)

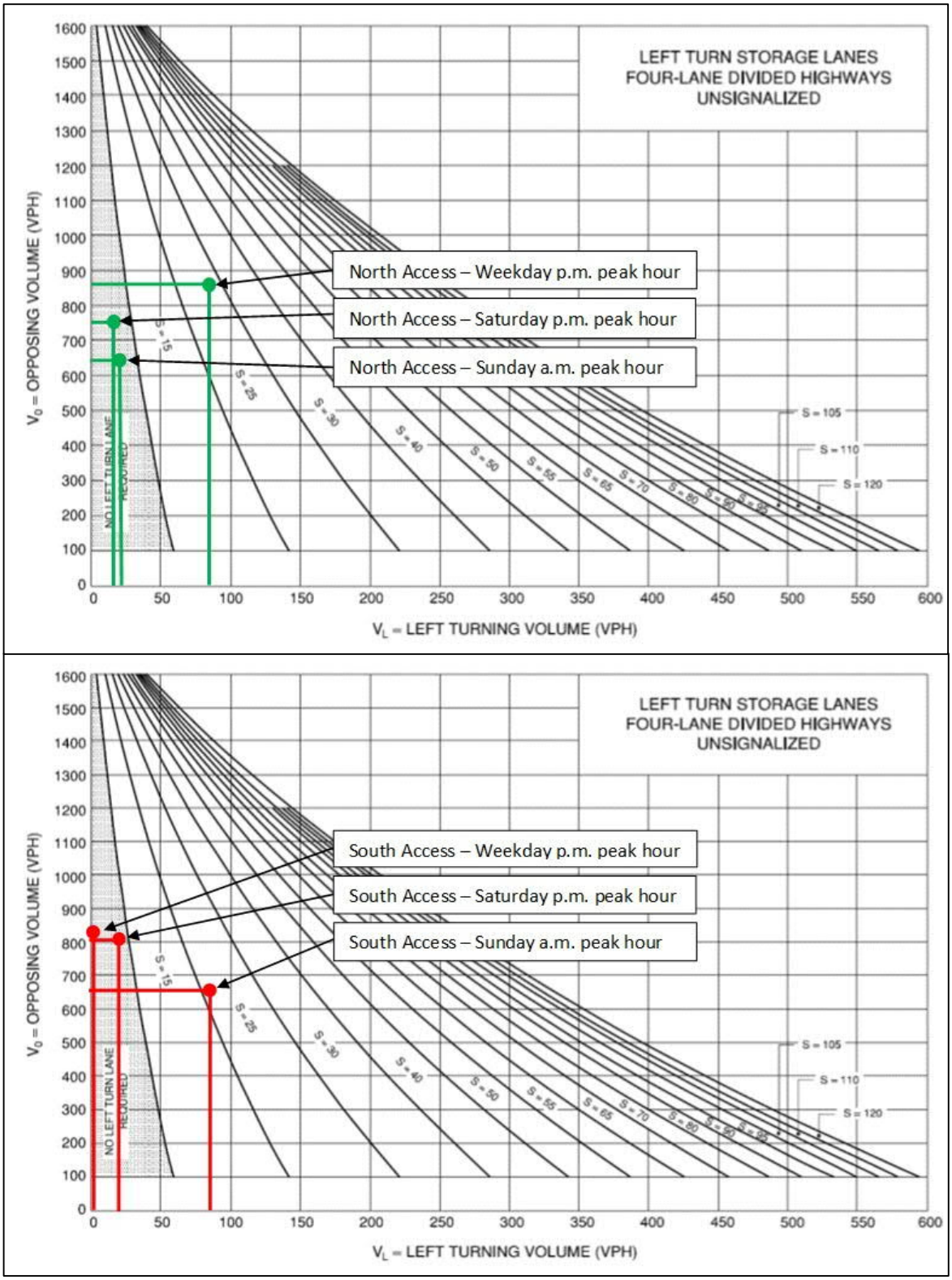


Figure 15: Left-Turn Lane Warrant - Divided Roadway (2040)

7.0 CAPACITY ANALYSIS

7.1 Methodology

The industry standard Synchro intersection capacity analysis software was utilized to analyse the study intersections, and the Arcady roundabout capacity analysis software was utilized to analyze the roundabout at the intersection of Ninth Line and Burnhamthorpe Road West. Key performance measures such as Level of Service (LOS), volume-to-capacity ratio (v/c ratio), and 95th percentile queuing were reported, and are defined below:

- **Average vehicle control delay** is used to characterize LOS for the entire intersection, an approach, or movement. Delay quantifies the variations in travel time and is also a surrogate measure of driver discomfort and fuel consumption.
- **V/c ratio** quantifies the degree to which the capacity of each signal phase or movement is utilized by a defined lane group.
- **95th percentile queue** is the queue length which is expected to be exceeded only 5% of the time; it is common practice to identify preferred storage length requirements for auxiliary turn lanes based on estimated peak hour 95th percentile queueing.

Table 3 identifies the control delay thresholds (seconds of delay per vehicle) for each LOS based on Highway Capacity Manual (HCM) methodology.

Table 3: Characteristics of Level of Service at Intersections

LEVEL OF SERVICE (LOS)	CONTROL DELAY (seconds / vehicle)	
	SIGNALIZED INTERSECTION	UNSIGNALIZED INTERSECTION
A	≤ 10	≤ 10
B	> 10 to 20	> 10 to 15
C	> 20 to 35	> 15 to 25
D	> 35 to 55	> 25 to 35
E	> 55 to 80	> 35 to 50
F	> 80	> 50

Signal Timing plans for the signalized study intersections are provided in **Appendix B**. Detailed Highway Capacity Manual (HCM) Synchro output reports from the intersection capacity analysis, and Arcady output reports from the roundabout capacity analysis, are provided in **Appendix C**.

The following sections present and describe the results of the capacity analysis at each study area intersection.

7.2 Ninth Line at Burnhamthorpe Road West

As shown in **Table 4**, under existing and all future conditions scenarios the roundabout intersection of Ninth Line at Burnhamthorpe Road West is operating with reserve capacity, delays not exceeding LOS "A", and no queueing concerns.

No geometric improvements are recommended at this roundabout in response to the traffic generated from the subject development.

Table 4: Capacity Analysis Results – Ninth Line at Burnhamthorpe Road West

SCENARIO	MOVE.	WEEKDAY PM PEAK HOUR			SATURDAY PM PEAK HOUR			SUNDAY AM PEAK HOUR			STORAGE LENGTH
		V/C	LOS	95% QUEUE	V/C	LOS	95% QUEUE	V/C	LOS	95% QUEUE	
Existing 2021	WBLTR	0.04	A	<1 veh	0.06	A	<1 veh	0.06	A	<1 veh	-
	SBLTR	0.08	A	<1 veh	0.14	A	<1 veh	0.14	A	<1 veh	-
	EBLTR	0.04	A	<1 veh	0.04	A	<1 veh	0.04	A	<1 veh	-
	NBLTR	0.11	A	<1 veh	0.13	A	<1 veh	0.13	A	<1 veh	-
Future Background 2028	WBLTR	0.04	A	<1 veh	0.06	A	<1 veh	0.06	A	<1 veh	-
	SBLTR	0.08	A	<1 veh	0.14	A	<1 veh	0.14	A	<1 veh	-
	EBLTR	0.04	A	<1 veh	0.04	A	<1 veh	0.04	A	<1 veh	-
	NBLTR	0.11	A	<1 veh	0.13	A	<1 veh	0.13	A	<1 veh	-
Future Total 2028 (Phase 1)	WBLTR	0.05	A	<1 veh	0.06	A	<1 veh	0.06	A	<1 veh	-
	SBLTR	0.09	A	<1 veh	0.16	A	<1 veh	0.16	A	<1 veh	-
	EBLTR	0.05	A	<1 veh	0.04	A	<1 veh	0.04	A	<1 veh	-
	NBLTR	0.12	A	<1 veh	0.16	A	<1 veh	0.15	A	<1 veh	-
Future Background 2030 (Phase 1)	WBLTR	0.05	A	<1 veh	0.06	A	<1 veh	0.06	A	<1 veh	-
	SBLTR	0.09	A	<1 veh	0.16	A	<1 veh	0.16	A	<1 veh	-
	EBLTR	0.05	A	<1 veh	0.04	A	<1 veh	0.04	A	<1 veh	-
	NBLTR	0.12	A	<1 veh	0.16	A	<1 veh	0.15	A	<1 veh	-
Future Total 2030 (Phase 1+2)	WBLTR	0.05	A	<1 veh	0.06	A	<1 veh	0.06	A	<1 veh	-
	SBLTR	0.09	A	<1 veh	0.16	A	<1 veh	0.16	A	<1 veh	-
	EBLTR	0.05	A	<1 veh	0.04	A	<1 veh	0.04	A	<1 veh	-
	NBLTR	0.12	A	<1 veh	0.16	A	<1 veh	0.15	A	<1 veh	-
Future Total 2035 (Phase 1+2)	WBLTR	0.05	A	<1 veh	0.06	A	<1 veh	0.06	A	<1 veh	-
	SBLTR	0.09	A	<1 veh	0.16	A	<1 veh	0.16	A	<1 veh	-
	EBLTR	0.05	A	<1 veh	0.04	A	<1 veh	0.04	A	<1 veh	-
	NBLTR	0.12	A	<1 veh	0.16	A	<1 veh	0.15	A	<1 veh	-
Future Total 2040 (Phase 1+2)	WBLTR	0.35	A	3 veh	0.35	A	3 veh	0.28	A	1 veh	-
	SBLTR	0.25	A	1 veh	0.35	A	3 veh	0.33	A	2 veh	-
	EBLTR	0.22	A	1 veh	0.29	A	1 veh	0.23	A	1 veh	-
	NBLTR	0.40	A	3 veh	0.36	A	3 veh	0.37	A	3 veh	-

7.3 Ninth Line at Dundas Street East

As shown in **Table 5**, under existing conditions the intersection of Ninth Line at Dundas Street East is operating with reserve capacity, delays not exceeding LOS “E”, and no queueing concerns.

Under future conditions, the only movement reporting an operational concern is the southbound left-turn movement during the Sunday a.m. peak hour, which reaches capacity in 2028 upon build-out of Phase 1 of the subject development. In 2028 prior to build-out of Phase 1, this movement is projected to service approximately 216 vehicles during the Sunday a.m. peak hour. The build-out of Phase 1 is estimated to add an additional 65 vehicles to the left-turn movement. Based on the current signal timing plan, the left-turn movement is not anticipated to have sufficient capacity to accommodate the additional site generated traffic. As expected, the movement would remain at-capacity to the final 2040 horizon year with the additional of annual corridor growth as well as site traffic generated from Phase 2 of the subject development.

The final row in the table below presents the results of an optimized signal timings scenario during the Sunday a.m. peak hour for the final 2040 horizon year. As shown, slight adjustments to the Total Splits at the traffic signal in order to provide the needed additional green time to the southbound left-turn movement will mitigate the operational concern, with the movement operating with reserve capacity.

All other movements are operating with reserve capacity, delays not exceeding LOS “E”, and no queueing concerns, up to the 2041 horizon year.

No geometric improvements are recommended at this intersection in response to the traffic generated from the subject development. It is recommended that signal timing adjustments to the Total Splits be implemented to provide additional green time (capacity) to the southbound left-turn movement during the Sunday a.m. peak hour.

Table 5: Capacity Analysis Results – Ninth Line at Dundas Street East

SCENARIO	MOVE.	WEEKDAY PM PEAK HOUR			SATURDAY PM PEAK HOUR			SUNDAY AM PEAK HOUR			STORAGE LENGTH
		V/C	LOS	95% QUEUE	V/C	LOS	95% QUEUE	V/C	LOS	95% QUEUE	
Existing 2021	EBL	0.47	B	23m	0.25	A	15m	0.50	B	19m	220m
	EBT	0.48	C	119m	0.41	B	89m	0.47	B	107m	-
	EBR	0.15	B	27m	0.11	B	16m	0.15	B	23m	55m
	WBL	0.68	B	60m	0.22	B	11m	0.33	B	17m	230m
	WBT	0.51	B	133m	0.36	B	75m	0.58	C	147m	-
	WBR	0.08	B	14m	0.09	B	11m	0.13	B	22m	65m
	NBL	0.56	D	59m	0.53	D	54m	0.55	D	58m	130m
	NBT	0.71	E	64m	0.55	E	40m	0.68	E	58m	-
	NBR	0.07	D	18m	0.07	E	19m	0.07	D	18m	100m
	SBL	0.47	D	39m	0.68	D	73m	0.66	D	63m	120m
	SBT	0.49	E	38m	0.56	E	45m	0.50	E	44m	-
	SBR	0.06	E	16m	0.06	E	17m	0.06	D	17m	50m
Future Background 2028	EBL	0.54	B	25m	0.57	B	27m	0.28	A	15m	220m
	EBT	0.53	C	125m	0.48	B	113m	0.41	B	85m	-
	EBR	0.17	C	28m	0.16	B	24m	0.11	B	13m	55m
	WBL	0.69	C	78m	0.37	B	17m	0.25	B	11m	230m
	WBT	0.53	B	142m	0.59	B	153m	0.36	B	71m	-
	WBR	0.09	B	15m	0.14	B	23m	0.09	B	9m	65m
	NBL	0.64	D	61m	0.60	D	60m	0.62	D	58m	130m
	NBT	0.62	E	65m	0.59	E	59m	0.48	E	41m	-
	NBR	0.08	D	18m	0.08	D	18m	0.08	E	19m	100m
	SBL	0.53	D	40m	0.72	D	65m	0.78	E	80m	120m
	SBT	0.41	E	39m	0.43	D	45m	0.46	E	45m	-
	SBR	0.06	D	16m	0.07	D	17m	0.06	D	17m	50m
Future Total 2028 (Phase 1)	EBL	0.54	B	25m	0.64	C	33m	0.38	B	19m	220m
	EBT	0.53	C	125m	0.48	B	114m	0.42	B	87m	-
	EBR	0.17	C	28m	0.16	B	25m	0.11	B	13m	55m
	WBL	0.69	C	78m	0.37	B	18m	0.26	B	11m	230m
	WBT	0.53	B	142m	0.60	C	159m	0.37	B	75m	-
	WBR	0.09	B	15m	0.16	B	27m	0.13	B	11m	65m
	NBL	0.64	D	61m	0.59	D	59m	0.61	D	57m	130m
	NBT	0.62	E	65m	0.60	E	61m	0.51	E	45m	-
	NBR	0.08	D	18m	0.08	D	18m	0.08	D	19m	100m
	SBL	0.53	D	40m	0.74	D	66m	**0.98**	**F**	**107m**	120m
	SBT	0.41	E	39m	0.42	D	45m	0.46	D	49m	-
	SBR	0.06	D	16m	0.07	D	17m	0.08	D	19m	50m
Future Background 2030 (Phase 1)	EBL	0.58	C	29m	0.63	C	32m	0.31	A	15m	220m
	EBT	0.59	C	132m	0.50	B	121m	0.43	B	91m	-
	EBR	0.18	C	30m	0.17	B	27m	0.11	B	14m	55m
	WBL	0.69	C	97m	0.41	B	18m	0.28	B	12m	230m
	WBT	0.57	C	155m	0.63	C	166m	0.38	B	76m	-
	WBR	0.09	B	17m	0.14	B	24m	0.10	B	10m	65m
	NBL	0.65	D	63m	0.62	D	62m	0.65	E	60m	130m
	NBT	0.63	E	66m	0.60	E	61m	0.49	E	42m	-
	NBR	0.08	D	18m	0.08	D	18m	0.08	E	19m	100m
	SBL	0.55	D	41m	0.75	E	67m	0.83	E	86m	120m
	SBT	0.41	E	40m	0.44	D	47m	0.49	E	47m	-
	SBR	0.07	D	16m	0.07	D	17m	0.07	D	18m	50m

SCENARIO	MOVE.	WEEKDAY PM PEAK HOUR			SATURDAY PM PEAK HOUR			SUNDAY AM PEAK HOUR			STORAGE LENGTH
		V/C	LOS	95% QUEUE	V/C	LOS	95% QUEUE	V/C	LOS	95% QUEUE	
Future Total 2030 (Phase 1+2)	EBL	0.66	C	40m	0.69	C	39m	0.41	B	20m	220m
	EBT	0.62	C	132m	0.51	B	122m	0.44	B	93m	-
	EBR	0.19	C	30m	0.17	B	27m	0.12	B	14m	55m
	WBL	0.71	D	102m	0.41	B	18m	0.29	B	12m	230m
	WBT	0.60	C	161m	0.64	C	172m	0.39	B	80m	-
	WBR	0.14	B	25m	0.18	B	30m	0.14	B	11m	65m
	NBL	0.62	D	62m	0.61	D	62m	0.62	D	59m	130m
	NBT	0.64	E	69m	0.61	E	63m	0.51	E	46m	-
	NBR	0.08	D	18m	0.08	D	18m	0.08	D	19m	100m
	SBL	0.69	D	56m	0.76	E	68m	**1.00**	**F**	114m	120m
	SBT	0.39	D	43m	0.44	D	47m	0.47	D	51m	-
	SBR	0.08	D	18m	0.07	D	17m	0.09	D	19m	50m
Future Total 2035 (Phase 1+2)	EBL	0.76	D	53m	0.77	D	47m	0.49	B	24m	220m
	EBT	0.72	D	150m	0.57	C	146m	0.53	B	126m	-
	EBR	0.23	C	36m	0.20	B	33m	0.15	B	24m	55m
	WBL	0.78	D	145m	0.50	B	22m	0.36	B	14m	230m
	WBT	0.69	C	191m	0.72	C	210m	0.47	B	106m	-
	WBR	0.16	B	29m	0.20	B	36m	0.17	B	22m	65m
	NBL	0.66	D	68m	0.66	D	66m	0.63	D	62m	130m
	NBT	0.66	E	74m	0.63	E	67m	0.61	E	50m	-
	NBR	0.09	D	18m	0.09	D	19m	0.09	E	20m	100m
	SBL	0.73	D	59m	0.82	E	72m	**1.02**	**F**	103m	120m
	SBT	0.40	D	45m	0.45	D	50m	0.63	E	56m	-
	SBR	0.09	D	18m	0.08	D	18m	0.09	D	20m	50m
Future Total 2040 (Phase 1+2)	EBL	0.79	D	59m	0.79	E	52m	0.58	B	24m	220m
	EBT	0.80	D	172m	0.65	C	177m	0.55	B	134m	-
	EBR	0.26	C	43m	0.23	B	41m	0.15	B	22m	55m
	WBL	0.92	E	175m	0.62	C	36m	0.41	B	15m	230m
	WBT	0.79	C	241m	0.83	C	275m	0.48	B	112m	-
	WBR	0.18	C	35m	0.23	B	44m	0.17	B	17m	65m
	NBL	0.71	D	73m	0.72	D	71m	0.81	E	69m	130m
	NBT	0.67	E	80m	0.65	E	73m	0.56	E	53m	-
	NBR	0.10	D	18m	0.10	D	19m	0.10	D	20m	100m
	SBL	0.78	E	62m	0.90	E	82m	**1.27**	**F**	**141m**	120m
	SBT	0.41	D	49m	0.47	D	54m	0.58	E	59m	-
	SBR	0.10	D	18m	0.09	D	18m	0.10	D	20m	50m
Future Total 2040 (Phase 1+2) **Optimized Signal Timings**	EBL							0.68	C	42m	220m
	EBT							0.67	C	185m	-
	EBR							0.19	C	38m	55m
	WBL							0.51	C	27m	230m
	WBT							0.59	C	157m	-
	WBR							0.23	C	46m	65m
	NBL							0.59	D	54m	130m
	NBT							0.56	E	53m	-
	NBR							0.10	D	20m	100m
	SBL							0.80	D	93m	120m
	SBT							0.41	D	52m	-
	SBR							0.10	D	18m	50m

7.4 Dundas Street East at Highway 403 North to East/West Off-Ramp

As shown in **Table 6**, under existing and all future conditions scenarios the intersection of Dundas Street East at the Highway 403 Southbound Off-ramp is operating with reserve capacity, delays not exceeding LOS "D", and no queueing concerns.

No geometric improvements are recommended at this intersection in response to the traffic generated from the subject development.

Table 6: Capacity Analysis Results – Dundas Street East at Highway 403 N-E/W Off-Ramp

SCENARIO	MOVE.	WEEKDAY PM PEAK HOUR			SATURDAY PM PEAK HOUR			SUNDAY AM PEAK HOUR			STORAGE LENGTH
		V/C	LOS	95% QUEUE	V/C	LOS	95% QUEUE	V/C	LOS	95% QUEUE	
Existing 2021	EBT	0.54	B	85m	0.43	A	65m	0.58	B	103m	-
	WBT	0.39	B	58m	0.25	A	34m	0.44	B	73m	-
	SBLR	0.53	C	53m	0.54	C	36m	0.52	C	46m	-
	SBR	0.79	C	101m	0.56	D	45m	0.73	C	79m	-
Future Background 2028	EBT	0.55	B	86m	0.63	B	113m	0.44	A	65m	-
	WBT	0.40	B	58m	0.48	B	79m	0.26	A	34m	-
	SBLR	0.52	C	54m	0.53	C	49m	0.49	C	36m	-
	SBR	0.77	C	105m	0.75	C	85m	0.51	C	45m	-
Future Total 2028 (Phase 1)	EBT	0.55	B	86m	0.64	B	113m	0.46	A	70m	-
	WBT	0.40	B	58m	0.49	B	81m	0.27	A	37m	-
	SBLR	0.52	C	54m	0.53	C	49m	0.49	C	37m	-
	SBR	0.77	C	105m	0.76	C	86m	0.54	C	48m	-
Future Background 2030 (Phase 1)	EBT	0.58	B	91m	0.67	B	120m	0.46	A	72m	-
	WBT	0.42	B	61m	0.51	B	83m	0.27	A	37m	-
	SBLR	0.53	C	57m	0.54	C	51m	0.50	C	38m	-
	SBR	0.79	C	113m	0.76	C	90m	0.54	C	48m	-
Future Total 2030 (Phase 1+2)	EBT	0.60	B	94m	0.68	B	120m	0.48	A	77m	-
	WBT	0.44	B	62m	0.53	B	85m	0.29	A	40m	-
	SBLR	0.53	C	58m	0.54	C	52m	0.50	C	39m	-
	SBR	0.80	C	116m	0.77	C	92m	0.57	C	52m	-
Future Total 2035 (Phase 1+2)	EBT	0.69	B	107m	0.78	C	139m	0.59	B	107m	-
	WBT	0.50	B	70m	0.60	B	96m	0.35	A	54m	-
	SBLR	0.56	B	66m	0.56	C	59m	0.56	C	44m	-
	SBR	0.85	C	153m	0.80	C	106m	0.66	D	61m	-
Future Total 2040 (Phase 1+2)	EBT	0.79	C	124m	0.90	C	179m	0.64	B	122m	-
	WBT	0.57	B	79m	0.70	C	110m	0.38	A	59m	-
	SBLR	0.60	B	76m	0.59	C	66m	0.53	C	46m	-
	SBR	0.91	D	182m	0.84	D	126m	0.64	C	64m	-

7.5 Dundas Street East at Highway 403 South to East/West Off-Ramp

As shown in **Table 7**, under existing and all future conditions scenarios the intersection of Dundas Street East at the Highway 403 Northbound Off-ramp is operating with reserve capacity, delays of LOS "A" for the Dundas Street East approaches and LOS "D" for the MTO on-ramp approaches, and no queueing concerns.

No geometric improvements are recommended at this intersection in response to the traffic generated from the subject development.

Table 7: Capacity Analysis Results – Dundas Street East at Highway 403 S-E/W Ramp

SCENARIO	MOVE.	WEEKDAY PM PEAK HOUR			SATURDAY PM PEAK HOUR			SUNDAY AM PEAK HOUR			STORAGE LENGTH
		V/C	LOS	95% QUEUE	V/C	LOS	95% QUEUE	V/C	LOS	95% QUEUE	
Existing 2021	EBT	0.26	A	26m	0.27	A	29m	0.30	A	34m	-
	WBT	0.27	A	27m	0.27	A	28m	0.31	A	35m	-
	NBLR	0.20	D	14m	0.27	D	17m	0.24	D	16m	-
	NBR	0.18	D	20m	0.27	D	24m	0.36	D	28m	-
Future Background 2028	EBT	0.26	A	24m	0.31	A	33m	0.28	A	27m	-
	WBT	0.27	A	26m	0.32	A	34m	0.27	A	27m	-
	NBLR	0.19	D	14m	0.22	D	16m	0.25	D	17m	-
	NBR	0.19	D	21m	0.34	D	29m	0.27	D	25m	-
Future Total 2028 (Phase 1)	EBT	0.26	A	24m	0.31	A	33m	0.29	A	30m	-
	WBT	0.27	A	26m	0.32	A	34m	0.28	A	29m	-
	NBLR	0.19	D	14m	0.25	D	18m	0.31	D	21m	-
	NBR	0.19	D	21m	0.34	D	29m	0.32	D	28m	-
Future Background 2030 (Phase 1)	EBT	0.28	A	27m	0.32	A	36m	0.29	A	30m	-
	WBT	0.29	A	28m	0.33	A	37m	0.29	A	30m	-
	NBLR	0.21	D	16m	0.24	D	17m	0.27	D	19m	-
	NBR	0.26	D	24m	0.38	D	32m	0.32	D	28m	-
Future Total 2030 (Phase 1+2)	EBT	0.28	A	28m	0.32	A	36m	0.30	A	33m	-
	WBT	0.29	A	29m	0.33	A	38m	0.30	A	32m	-
	NBLR	0.26	D	18m	0.27	D	19m	0.33	D	23m	-
	NBR	0.27	D	25m	0.38	D	32m	0.37	D	31m	-
Future Total 2035 (Phase 1+2)	EBT	0.31	A	35m	0.36	A	44m	0.35	A	47m	-
	WBT	0.33	A	37m	0.37	A	46m	0.35	A	46m	-
	NBLR	0.30	D	21m	0.30	D	21m	0.42	D	27m	-
	NBR	0.38	D	32m	0.45	D	38m	0.54	D	41m	-
Future Total 2040 (Phase 1+2)	EBT	0.35	A	44m	0.41	A	55m	0.38	A	53m	-
	WBT	0.37	A	46m	0.42	A	58m	0.38	A	52m	-
	NBLR	0.34	D	24m	0.33	D	24m	0.38	D	28m	-
	NBR	0.47	D	39m	0.51	D	43m	0.51	D	44m	-

7.6 Ninth Line at Proposed Southern Access (Phase 1)

As shown in **Table 8**, under all future conditions scenarios the proposed southern access on Ninth Line is operating with reserve capacity, delays not exceeding LOS "E", and no queueing concerns. The access is expected to operate satisfactorily with two outbound lanes (one left turn lane and one right turn lane and with a southbound auxiliary left-turn lane on Ninth Line for inbound traffic. As per the results of the capacity analysis, the 95th percentile queue length for the inbound left-turn movement does not exceed 1 vehicle, which would require approximately 15 metres of storage length. This is less than the storage length recommended in the completed MTO left-turn lane warrants, as shown in Section 6, as well as the minimum storage length of 15 metres recommended in the Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads.

Table 8: Capacity Analysis Results – Ninth Line at Proposed Southern Access (Phase 1)

SCENARIO	MOVE.	WEEKDAY PM PEAK HOUR			SATURDAY PM PEAK HOUR			SUNDAY AM PEAK HOUR			STORAGE LENGTH
		V/C	LOS	95% QUEUE	V/C	LOS	95% QUEUE	V/C	LOS	95% QUEUE	
Future Total 2028 (Phase 1)	WBL WBR SBL	0.00 0.00 0.00	A A A	<1 veh <1 veh <1 veh	0.03 0.01 0.05	C B A	<1 veh <1 veh <1 veh	0.29 0.20 0.09	D B A	9m <1 veh <1 veh	- -
Future Background 2030 (Phase 1)	WBL WBR SBL	0.32 0.20 0.00	A A A	<1 veh <1 veh <1 veh	0.03 0.01 0.06	C B A	<1 veh <1 veh <1 veh	0.32 0.20 0.09	D B A	11m <1 veh <1 veh	- -
Future Total 2030 (Phase 1+2)	WBL WBR SBL	0.21 0.08 0.01	C A A	<1 veh <1 veh <1 veh	0.02 0.01 0.04	C B A	<1 veh <1 veh <1 veh	0.29 0.10 0.07	D B A	9m <1 veh <1 veh	- -
Future Total 2035 (Phase 1+2)	WBL WBR SBL	0.24 0.09 0.02	C A A	7m <1 veh <1 veh	0.02 0.01 0.05	C B A	<1 veh <1 veh <1 veh	0.32 0.10 0.08	D B A	11m <1 veh <1 veh	- -
Future Total 2040 (Phase 1+2)	WBL WBR SBL	0.28 0.09 0.02	D A A	9m <1 veh <1 veh	0.02 0.01 0.05	D B A	<1 veh <1 veh <1 veh	0.43 0.10 0.08	E B A	16m 1 veh <1 veh	- -

7.7 Ninth Line at Proposed Northern Access (Phase 2)

As shown in **Table 9**, under all future conditions scenarios the proposed northern access on Ninth Line is operating with reserve capacity, delays not exceeding LOS "B", and no queueing concerns. The access is expected to operate satisfactorily with a single outbound lane and a single receiving lane, and with the existing southbound auxiliary left-turn lane on Ninth Line for inbound traffic. As per the results of the capacity analysis, the 95th percentile queue length for the inbound left-turn movement does not exceed 1 vehicle, which would require approximately 15 metres of storage length. This is less than the storage length recommended in the completed MTO left-turn lane warrants, as shown in Section 6, as well as the minimum storage length of 15 metres recommended in the TAC Geometric Design Guide.

Table 9: Capacity Analysis Results – Ninth Line at Proposed Northern Access (Phase 2)

SCENARIO	MOVE.	WEEKDAY PM PEAK HOUR			SATURDAY PM PEAK HOUR			SUNDAY AM PEAK HOUR			STORAGE LENGTH
		V/C	LOS	95% QUEUE	V/C	LOS	95% QUEUE	V/C	LOS	95% QUEUE	
Future Total 2030 (Phase 1+2)	WBR SBL	0.18 0.08	B A	<1 veh <1 veh	0.08 0.04	B A	<1 veh <1 veh	0.18 0.04	B A	<1 veh <1 veh	- -
Future Total 2035 (Phase 1+2)	WBR SBL	0.18 0.09	B A	<1 veh <1 veh	0.08 0.04	B A	<1 veh <1 veh	0.18 0.04	B A	<1 veh <1 veh	- -
Future Total 2040 (Phase 1+2)	WBR SBL	0.19 0.09	B A	<1 veh <1 veh	0.09 0.04	B A	<1 veh <1 veh	0.19 0.05	B A	<1 veh <1 veh	- -

7.8 Access Management

The existing Access Storage facility to the north has a partial moves access (left-in, right-in/out), with a raised centre median restricting outbound left-turn movements. Ninth Line is already constructed in its ultimate urban four-lane cross-section fronting the access Storage facility, and transitions down to a rural two-lane cross-section to the south fronting the subject site.

As previously described, the balance of Ninth Line between Burnhamthorpe Road West and Dundas Street East is planned to be widened to an urban four-lane cross-section with a median separation (it is not clear at this time what portions of the corridor will have a raised centre median versus a painted median), with completion anticipated prior to build-out of Phase 1 of the subject development in 2028.

Similar to the existing access configuration for the Access Storage facility, it is proposed the subject site's southern access for Phase 1 be designed as a partial moves access (left-in, right-in/out) with a raised centre median restricting outbound left-turn movements. Providing the

auxiliary left-turn would ensure a reasonable level of accessibility is afforded to patrons of the site approaching from the north.

The proposed new access on Ninth Line is planned to be located approximately 300 metres south of the existing access to the north (northern site access), which meets the minimum recommended spacing of 300 metres for full movement accesses as per the Section 3.2 of the Region's Access Management Guidelines. Although the capacity analysis indicates a 95th percentile queueing length of less than 1 vehicle for the left-turn movement in 2040, the MTO warrant analysis recommends 25 metres of storage. Therefore, we would recommend additional storage capacity be provided given the availability of substantial separation from the access to the north, thus reducing the probability of queue spillback into the general-purpose lanes during occasional events (i.e., weddings).

Phase 2 of the subject development is planned to include an internal site connection to the existing Access Storage facility (only temporary for construction vehicles under Phase 1), which will provide access to the existing partial moves access to the north, resulting in two (2) access points for the site upon full build-out of the subject development. The existing storage length of the northern access is approximately 50 metres (7-8 vehicles) which is sufficient to accommodate the forecasted 95th percentile queueing of less than 1 vehicle by the 2040 horizon year. It is also greater than the 25-metre required length determined through the MTO left-turn warrant analysis completed under Section 6.

8.0 SUMMARY OF FINDINGS

The findings of the traffic impact study can be summarized as follows:

- Phase 1 of the development is planned for completion in around 2028, will consist of the Coptic Church and Banquet Hall, and proposes a new full movement access on Ninth Line at the southern limit of the site;
- Phase 2 of the development is planned for completion in around 2030, will consist of the Community Services Building, and proposes an internal site connection into the adjacent Access Storage site which will provide use of the existing partial moves access (left-in, right-in/out) on Ninth Line at the northern limit of the site;
- Phase 1 is estimated to generate 10 inbound trips and 12 outbound trips during the Saturday p.m. peak hour, and 209 inbound trips and 218 outbound trips during the Sunday a.m. peak hour;
- Phase 2 is estimated to generate 144 inbound trips and 170 outbound trips during the weekday p.m. peak hour, and an additional 105 inbound trips and 0 outbound trips during the Saturday p.m. peak hour;

- Overall, the total site is estimated to generate 144 inbound trips and 170 outbound trips during the weekday p.m. peak hour, 115 inbound trips and 12 outbound trips during the Saturday p.m. peak hour, and 209 inbound trips and 218 outbound trips during the Sunday a.m. peak hour;
- The study intersections analyzed in this study included both the Burnhamthorpe Road West at Ninth Line roundabout, the Dundas Street East at Ninth Line signalized intersection, both of the signalized MTO Highway 403 off-ramp intersections on Dundas Street East, and both site accesses on Ninth Line;
- The results of the capacity analysis up to the study's final 2040 horizon year indicate that the existing study intersections all have sufficient capacity to accommodate the site generated traffic during peak hours, without requiring any geometric improvements.;
- The signalized intersection of Dundas Street East at Ninth Line will require some signal timing adjustments in order to re-allocate some additional green time to the southbound left-turn movement in order to provide the needed additional capacity to accommodate the site generated traffic; and
- The proposed new access on Ninth Line meets the Region's access spacing guidelines, is optimally located at the southern limit of the site which maximizes separation from the existing access to the north and is required in order to provide access to Phase 1 of the development.

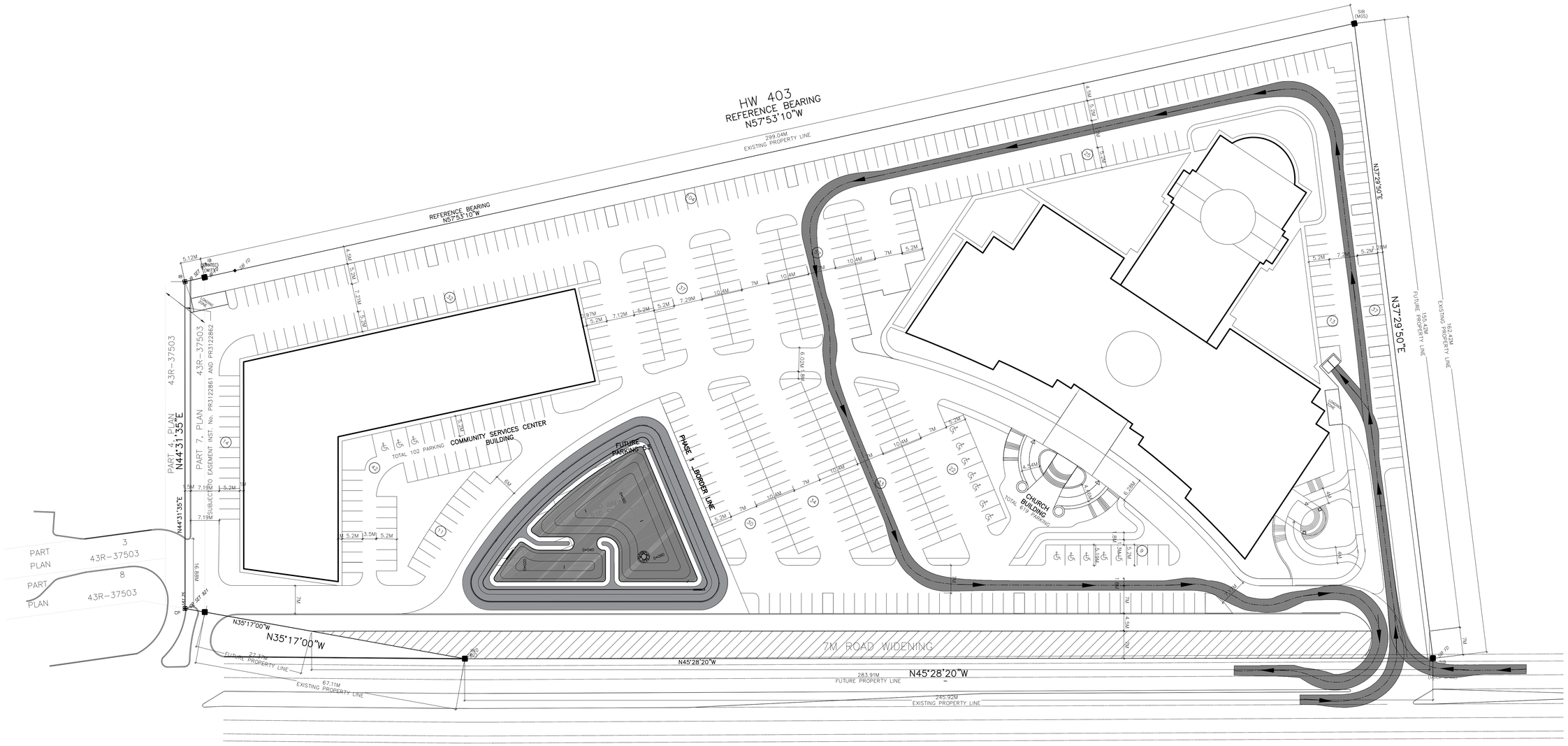
9.0 RECOMMENDATIONS

It is recommended signal timing adjustments at the signalized intersection of Dundas Street East at Ninth Line be implemented in conjunction with Phase 1 of the subject development in order to re-allocate some additional green time to the southbound left-turn movement to provide the needed additional capacity to accommodate the site generated traffic and maintain an acceptable level of service.

No geometric improvements are recommended at the study area intersections in response to the traffic generated from the subject development.

APPENDIX A

Site Plan



SITE PLAN

SCALE : 1:500

BUILDING & SITE STATISTICS:

AREA OF SITE	= 37,447 SQ.M.
GROUND FLOOR AREA OF CHURCH BUILDING	= 5,016 SQ.M.
GROUND FLOOR AREA OF COMMUNITY SERVICES BUILDING	= 2,927 SQ.M.
TOTAL GROUND FLOOR AREA OF BUILDINGS	= 7,943 SQ.M.
LOT COVERAGE %	= 21.2%
TOTAL FLOOR AREA (CHURCH BUILDING)	= 11,592 SQ.M
TOTAL FLOOR AREA (COMMUNITY SERVICES)	= 10,830 SQ.M
PARKING REQUIRED:	
CHURCH	= 619
COMMUNITY SERVICES	= 190
TOTAL	= 725 (INCL. 15 ACCESSIBLE)
PARKING PROVIDED:	
CHURCH	= 467 (INCL. 12 ACCESSIBLE)
COMMUNITY SERVICES	= 99 (INCL. 3 ACCESSIBLE)
FUTURE	= 53
TOTAL	= 619 (INCL. 15 ACCESSIBLE)

– TYPICAL PARKING SPACE = 2.6M x 5.2M

CONCEPT
NAGY SOLIMAN
ARCHITECTURAL DESIGN
6895 EDENWOOD DR.
MISSISSAUGA, ON. L5N 5Z8
TEL : 647-868-4474
647-557-4177
nagy_soliman@hotmail.com

NORTH

NO	DESCRIPTION	DATE
1	FOR SUBMISSION	JAN 13,22

PROJECT TITLE:

ST. MARK AND ST. DEMIANA CHURCH

CLIENT:

COPTIC ORTHODOX CHURCH
AT NINTH LINE
MISSISSAUGA, ON

Project No.	2019.01
Date	FEB, 12,19
Drawn By	N.S.
Checked By	N.S.
Scale	AS NOTED

Sheet No.

SP-1

APPENDIX B

Signal Timing Plans

Signal Timing Report

Runtime: 2021-07-29 10:28:41

Device: 5902

Region: Mississauga **Signal ID:** 5902 **Location:** DUNDAS STREET E at Ninth Line

Phase	Units	1	2	3	4	5	6	7	8
Walk	Sec	0	14	0	15	0	14	0	15
Ped Clear	Sec	0	32	0	34	0	32	0	34
Min Green	Sec	7	20	7	10	7	20	7	10
Passage	Sec	2.0	5.5	2.0	3.0	2.0	5.5	2.0	3.0
Maximum 1	Sec	20	55	20	35	20	55	20	35
Maximum 2	Sec	20	60	20	40	20	60	20	40
Yellow Change	Sec	3.0	4.2	3.0	3.7	3.0	4.2	3.0	3.7
Red Clearance	Sec	1.0	2.7	1.0	3.3	1.0	2.7	1.0	3.3
Red Revert	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Added Initial	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Initial	Sec	0	0	0	0	0	0	0	0
Time Before	Sec	0	0	0	0	0	0	0	0
Cars Before	Veh	0	0	0	0	0	0	0	0
Time To Reduce	Sec	0	0	0	0	0	0	0	0
Reduce By	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Min Gap	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Max Limit	Sec	0	0	0	0	0	0	0	0
Dynamic Max Step	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
[P2] Start Up	Enum	phaseNotOn	redClear	phaseNotOn	phaseNotOn	phaseNotOn	redClear	phaseNotOn	phaseNotOn
[P2] Options	Bit	Enabled Non Lock Det	Enabled Non-Actuated 1 Non Lock Det Min Veh Recall Dual Entry Act Rest In Walk	Enabled Non Lock Det	Enabled Non Lock Det Dual Entry	Enabled Non Lock Det	Enabled Non-Actuated 1 Non Lock Det Min Veh Recall Dual Entry Act Rest In Walk	Enabled Non Lock Det	Enabled Non Lock Det Dual Entry
[P2] Ring	Ring	1	1	1	1	2	2	2	2
[P2] Concurrency	Phase (,)	(5,6)	(5,6)	(7,8)	(7,8)	(1,2)	(1,2)	(3,4)	(3,4)

Coord Pattern	Units	1	2	3	4	5	6	7	8
Cycle Time	Sec	140	140	140	140	0	0	0	0
Offset	Sec	58	13	100	20	0	0	0	0
Split	Split	1	2	3	4	0	0	0	0
Sequence	Sequence	1	1	1	1	0	0	0	0

Coord Split	Units	1	2	3	4	5	6	7	8
Split 1 - Mode	Enum	none	other	none	none	none	other	none	none
Split 1 - Time	Sec	12	73	12	43	14	71	12	43
Split 1 - Coord	Enum	false	true	false	false	false	true	false	false
Split 2 - Mode	Enum	none	other	phaseOmitted	none	none	other	none	none
Split 2 - Time	Sec	12	62	0	66	11	63	11	55
Split 2 - Coord	Enum	false	true	false	false	false	true	false	false
Split 3 - Mode	Enum	none	other	none	none	none	other	none	none
Split 3 - Time	Sec	12	72	16	40	16	68	16	40
Split 3 - Coord	Enum	false	true	false	false	false	true	false	false
Split 4 - Mode	Enum	none	none	none	none	none	none	none	none
Split 4 - Time	Sec	12	72	0	56	11	73	0	56
Split 4 - Coord	Enum	false	true	false	false	false	true	false	false

TB Schedule	Units	1	2	3	4	5	6	7	8
Month	Bit	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND	J----------	-F----------	---A--------	----M-------	------J-----
Day of Week	Bit	-MTWTF-	S------	------S	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS
Day of Month	Bit	12345678901234 56789012345678 901	12345678901234 56789012345678 901	12345678901234 56789012345678 901	1---------- ------	----------5--------- ------	-2---------- --------	----------4- ------	1---------- ------
Day Plan	Number	1	3	2	3	3	3	3	3

TB Schedule	Units	9	10	11	12	13	14	15	16
Month	Bit	-------A----	--------S---	---------O--	----------D	----------D	----------D	0	0
Day of Week	Bit	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS
Day of Month	Bit	-2---------- ------	-----6---------- ------	----------1---------- ------	---------- -7----	---------- --8---	---------- 4-------	0	0
Day Plan	Number	3	3	3	3	3	3	0	0

TB Dayplan	Units	1	2	3	4	5	6	7	8
Plan 1 Hour	Hour	0	6	9	15	19	3	0	0
Plan 1 Minute	Min	0	0	30	0	30	0	0	0
Plan 1 Action	Number	8	1	2	3	2	7	0	0
Plan 2 Hour	Hour	0	7	3	0	0	0	0	0
Plan 2 Minute	Min	0	0	0	0	0	0	0	0
Plan 2 Action	Number	8	4	7	0	0	0	0	0
Plan 3 Hour	Hour	0	8	23	3	0	0	0	0
Plan 3 Minute	Min	0	0	0	0	0	0	0	0
Plan 3 Action	Number	8	4	8	7	0	0	0	0

TB Action	Units	1	2	3	4	5	6	7	8
Pattern	Enum	Pattern 1	Pattern 2	Pattern 3	Pattern 4	Pattern 5	Pattern 6	Free	Free
Aux. Functions	Bit	0	0	0	0	0	0	0	0
Spec. Functions	Bit	0	0	0	0	0	0	0	Special Func 2 Special Func 4

Signal Timing Report

Runtime: 2021-07-29 11:03:17

Device: 5904

Region: Mississauga **Signal ID:** 5904 **Location:** DUNDAS STREET E at Hwy 403 East Terminal

Phase	Units	1	2	3	4	5	6	7	8
Walk	Sec	0	8	0	0	0	0	0	0
Ped Clear	Sec	0	12	0	0	0	0	0	0
Min Green	Sec	0	8	0	8	0	0	0	0
Passage	Sec	0.0	4.0	0.0	4.0	0.0	0.0	0.0	0.0
Maximum 1	Sec	0	60	0	40	0	0	0	0
Maximum 2	Sec	0	60	0	40	0	0	0	0
Yellow Change	Sec	3.0	5.0	3.0	4.0	3.0	4.0	3.0	4.0
Red Clearance	Sec	0.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0
Red Revert	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Added Initial	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Initial	Sec	0	0	0	0	0	0	0	0
Time Before	Sec	0	0	0	0	0	0	0	0
Cars Before	Veh	0	0	0	0	0	0	0	0
Time To Reduce	Sec	0	0	0	0	0	0	0	0
Reduce By	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Min Gap	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Max Limit	Sec	0	0	0	0	0	0	0	0
Dynamic Max Step	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
[P2] Start Up	Enum	other	redClear	other	phaseNotOn	other	other	other	other
[P2] Options	Bit	0	Enabled Non-Actuated 1 Max Veh Recall Ped Recall Act Rest In Walk	0	Enabled Non Lock Det	0	0	0	0
[P2] Ring	Ring	0	1	0	1	0	0	0	0
[P2] Concurrency	Phase (,)	()	()	()	()	()	()	()	()

Coord Pattern	Units	1	2	3	4	5	6	7	8
Cycle Time	Sec	140	140	140	140	0	0	0	0
Offset	Sec	89	66	70	73	0	0	0	0
Split	Split	1	2	3	4	5	6	7	8
Sequence	Sequence	1	1	1	1	1	1	1	1

Coord Split	Units	1	2	3	4	5	6	7	8
Split 1 - Mode	Enum	none	none	none	none	none	none	none	none
Split 1 - Time	Sec	0	101	0	39	0	0	0	0
Split 1 - Coord	Enum	false	true	false	false	false	false	false	false
Split 2 - Mode	Enum	none	none	none	none	none	none	none	none
Split 2 - Time	Sec	0	94	0	46	0	0	0	0
Split 2 - Coord	Enum	false	true	false	false	false	false	false	false
Split 3 - Mode	Enum	none	none	none	none	none	none	none	none
Split 3 - Time	Sec	0	92	0	48	0	0	0	0
Split 3 - Coord	Enum	false	true	false	false	false	false	false	false
Split 4 - Mode	Enum	none	none	none	none	none	none	none	none
Split 4 - Time	Sec	0	92	0	48	0	0	0	0
Split 4 - Coord	Enum	false	true	false	false	false	false	false	false

TB Schedule	Units	1	2	3	4	5	6	7	8
Month	Bit	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND	J----------	-F----------	---A--------	----M-------	------J-----
Day of Week	Bit	-MTWTF-	S------	------S	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS
Day of Month	Bit	12345678901234567890123456789012345678901	12345678901234567890123456789012345678901	12345678901234567890123456789012345678901	1----------	----------8------	----------9----	----------0-----	1----------
Day Plan	Number	1	3	2	3	3	3	3	3

TB Schedule	Units	9	10	11	12	13	14	15	16
Month	Bit	-------A----	--------S---	---------O--	----------D	----------D	----------D	0	0
Day of Week	Bit	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS
Day of Month	Bit	----5----------	-2----------	----------4----------	----------	----------	----------	0	0
Day Plan	Number	3	3	3	3	3	3	0	0

TB Dayplan	Units	1	2	3	4	5	6	7	8
Plan 1 Hour	Hour	0	6	9	15	19	3	0	0
Plan 1 Minute	Min	0	0	30	0	30	0	0	0
Plan 1 Action	Number	8	1	2	3	2	7	0	0
Plan 2 Hour	Hour	0	7	0	0	0	0	0	0
Plan 2 Minute	Min	0	0	0	0	0	0	0	0
Plan 2 Action	Number	8	4	0	0	0	0	0	0
Plan 3 Hour	Hour	0	8	23	0	0	0	0	0
Plan 3 Minute	Min	0	0	0	0	0	0	0	0
Plan 3 Action	Number	8	4	8	0	0	0	0	0

TB Action	Units	1	2	3	4	5	6	7	8
Pattern	Enum	Pattern 1	Pattern 2	Pattern 3	Pattern 4	Pattern 5	Pattern 6	Free	Free
Aux. Functions	Bit	0	0	0	0	0	0	0	0
Spec. Functions	Bit	0	0	0	0	0	0	0	0

Signal Timing Report

Runtime: 2021-07-29 10:44:42

Device: 5903

Region: Mississauga **Signal ID:** 5903 **Location:** DUNDAS STREET E at Hwy 403 West Terminal

Phase	Units	1	2	3	4	5	6	7	8
Walk	Sec	0	8	0	0	0	0	0	0
Ped Clear	Sec	0	10	0	0	0	0	0	0
Min Green	Sec	0	8	0	8	0	0	0	0
Passage	Sec	0.0	2.0	0.0	4.0	0.0	0.0	0.0	0.0
Maximum 1	Sec	0	45	0	45	0	0	0	0
Maximum 2	Sec	0	45	0	45	0	0	0	0
Yellow Change	Sec	3.0	5.0	3.0	4.0	3.0	4.0	3.0	4.0
Red Clearance	Sec	0.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0
Red Revert	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Added Initial	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Initial	Sec	0	0	0	0	0	0	0	0
Time Before	Sec	0	0	0	0	0	0	0	0
Cars Before	Veh	0	0	0	0	0	0	0	0
Time To Reduce	Sec	0	0	0	0	0	0	0	0
Reduce By	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Min Gap	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Max Limit	Sec	0	0	0	0	0	0	0	0
Dynamic Max Step	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
[P2] Start Up	Enum	other	redClear	other	phaseNotOn	other	other	other	other
[P2] Options	Bit	0	Enabled Non-Actuated 1 Max Veh Recall Ped Recall Act Rest In Walk	0	Enabled Non Lock Det	0	0	0	0
[P2] Ring	Ring	0	1	0	1	0	0	0	0
[P2] Concurrency	Phase (,)	()	()	()	()	()	()	()	()

Coord Pattern	Units	1	2	3	4	5	6	7	8
Cycle Time	Sec	140	140	140	140	0	0	0	0
Offset	Sec	66	17	92	47	0	0	0	0
Split	Split	1	2	3	4	5	6	7	8
Sequence	Sequence	1	1	1	1	1	1	1	1

Coord Split	Units	1	2	3	4	5	6	7	8
Split 1 - Mode	Enum	none	none	none	none	none	none	none	none
Split 1 - Time	Sec	0	91	0	49	0	0	0	0
Split 1 - Coord	Enum	false	true	false	false	false	false	false	false
Split 2 - Mode	Enum	none	none	none	none	none	none	none	none
Split 2 - Time	Sec	0	90	0	50	0	0	0	0
Split 2 - Coord	Enum	false	true	false	false	false	false	false	false
Split 3 - Mode	Enum	none	none	none	none	none	none	none	none
Split 3 - Time	Sec	0	72	0	68	0	0	0	0
Split 3 - Coord	Enum	false	true	false	false	false	false	false	false
Split 4 - Mode	Enum	none	none	none	none	none	none	none	none
Split 4 - Time	Sec	0	90	0	50	0	0	0	0
Split 4 - Coord	Enum	false	true	false	false	false	true	false	false

TB Schedule	Units	1	2	3	4	5	6	7	8
Month	Bit	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND	J----------	-F----------	---A--------	----M-------	------J-----
Day of Week	Bit	-MTWTF-	S------	------S	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS
Day of Month	Bit	12345678901234567890123456789012345678901	12345678901234567890123456789012345678901	12345678901234567890123456789012345678901	1----------	----------5---------	-2----------	----------4-	1----------
Day Plan	Number	1	3	2	3	3	3	3	3

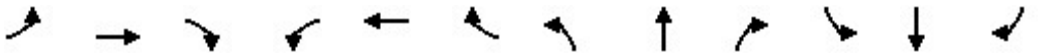
TB Schedule	Units	9	10	11	12	13	14	15	16
Month	Bit	-------A----	--------S---	---------O--	----------D	----------D	----------D	0	0
Day of Week	Bit	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS
Day of Month	Bit	-2----------	-----6----------	----------1----------	----------	----------	----------	0	0
Day Plan	Number	3	3	3	3	3	3	0	0

TB Dayplan	Units	1	2	3	4	5	6	7	8
Plan 1 Hour	Hour	0	6	9	15	19	3	0	0
Plan 1 Minute	Min	0	0	30	0	30	0	0	0
Plan 1 Action	Number	8	1	2	3	2	7	0	0
Plan 2 Hour	Hour	0	7	3	0	0	0	0	0
Plan 2 Minute	Min	0	0	0	0	0	0	0	0
Plan 2 Action	Number	8	4	7	0	0	0	0	0
Plan 3 Hour	Hour	0	8	23	3	0	0	0	0
Plan 3 Minute	Min	0	0	0	0	0	0	0	0
Plan 3 Action	Number	8	4	8	7	0	0	0	0

TB Action	Units	1	2	3	4	5	6	7	8
Pattern	Enum	Pattern 1	Pattern 2	Pattern 3	Pattern 4	Pattern 5	Pattern 6	Free	Free
Aux. Functions	Bit	0	0	0	0	0	0	0	0
Spec. Functions	Bit	0	0	0	0	0	0	0	0

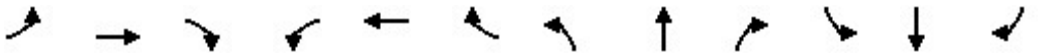
APPENDIX C

Capacity Analysis Output Reports



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	120	1212	189	267	1467	112	175	327	114	111	188	95
v/c Ratio	0.46	0.48	0.22	0.67	0.51	0.12	0.53	0.71	0.37	0.44	0.49	0.37
Control Delay	16.5	26.0	8.2	21.0	20.9	5.3	47.2	66.8	12.2	44.6	62.1	13.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.5	26.0	8.2	21.0	20.9	5.3	47.2	66.8	12.2	44.6	62.1	13.8
Queue Length 50th (m)	11.1	84.6	7.5	27.1	90.2	2.2	42.0	48.7	0.0	25.6	27.9	0.0
Queue Length 95th (m)	22.6	119.4	26.7	59.9	132.7	14.0	59.0	63.5	17.8	39.1	38.3	16.2
Internal Link Dist (m)		388.6			329.5			288.1			373.4	
Turn Bay Length (m)	220.0		55.0	230.0		65.0	130.0		95.0	115.0		65.0
Base Capacity (vph)	340	2518	853	410	2860	931	339	834	460	310	834	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	0.48	0.22	0.65	0.51	0.12	0.52	0.39	0.25	0.36	0.23	0.21

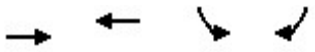
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	1115	174	246	1350	103	161	301	105	102	173	87
Future Volume (vph)	110	1115	174	246	1350	103	161	301	105	102	173	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.9	6.9	4.0	6.9	6.9	4.0	7.0	7.0	4.0	7.0	7.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	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)	1770	5085	1583	1770	5085	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.14	1.00	1.00	0.16	1.00	1.00	0.52	1.00	1.00	0.45	1.00	1.00
Satd. Flow (perm)	269	5085	1583	296	5085	1583	970	3539	1583	839	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	120	1212	189	267	1467	112	175	327	114	111	188	95
RTOR Reduction (vph)	0	0	70	0	0	41	0	0	99	0	0	85
Lane Group Flow (vph)	120	1212	119	267	1467	71	175	327	15	111	188	10
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	78.9	69.3	69.3	92.3	78.7	78.7	32.8	18.3	18.3	26.8	15.3	15.3
Effective Green, g (s)	78.9	69.3	69.3	92.3	78.7	78.7	32.8	18.3	18.3	26.8	15.3	15.3
Actuated g/C Ratio	0.56	0.49	0.49	0.66	0.56	0.56	0.23	0.13	0.13	0.19	0.11	0.11
Clearance Time (s)	4.0	6.9	6.9	4.0	6.9	6.9	4.0	7.0	7.0	4.0	7.0	7.0
Vehicle Extension (s)	2.0	5.5	5.5	2.0	8.0	8.0	2.0	3.0	3.0	2.0	3.0	3.0
Lane Grp Cap (vph)	254	2517	783	395	2858	889	310	462	206	237	386	172
v/s Ratio Prot	0.03	0.24		c0.09	0.29		c0.06	c0.09		0.04	0.05	
v/s Ratio Perm	0.23		0.08	c0.35		0.04	0.07		0.01	0.05		0.01
v/c Ratio	0.47	0.48	0.15	0.68	0.51	0.08	0.56	0.71	0.07	0.47	0.49	0.06
Uniform Delay, d1	14.9	23.4	19.3	13.8	18.9	14.0	45.6	58.3	53.4	48.9	58.7	55.9
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	0.5	0.7	0.4	3.6	0.6	0.2	1.4	4.9	0.1	0.5	1.0	0.1
Delay (s)	15.4	24.1	19.7	17.4	19.5	14.2	47.0	63.2	53.6	49.4	59.6	56.1
Level of Service	B	C	B	B	B	B	D	E	D	D	E	E
Approach Delay (s)		22.9			18.9			56.8			55.9	
Approach LOS		C			B			E			E	

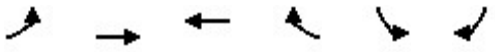
Intersection Summary			
HCM 2000 Control Delay	28.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	21.9
Intersection Capacity Utilization	70.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	1363	987	640	441
v/c Ratio	0.54	0.39	0.54	0.80
Control Delay	17.8	15.9	22.1	34.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	17.8	15.9	22.1	34.3
Queue Length 50th (m)	61.9	40.7	42.1	68.5
Queue Length 95th (m)	85.2	57.7	52.6	100.7
Internal Link Dist (m)	329.5	352.2	132.2	
Turn Bay Length (m)			85.0	65.0
Base Capacity (vph)	2522	2522	1410	651
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	0.54	0.39	0.45	0.68

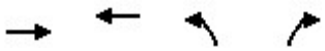
Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑		⋎⋎	↱
Traffic Volume (vph)	0	1254	908	0	183	811
Future Volume (vph)	0	1254	908	0	183	811
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.0	7.0		6.0	6.0
Lane Util. Factor		0.91	0.91		0.97	0.91
Frt		1.00	1.00		0.90	0.85
Flt Protected		1.00	1.00		0.98	1.00
Satd. Flow (prot)		5085	5085		3191	1441
Flt Permitted		1.00	1.00		0.98	1.00
Satd. Flow (perm)		5085	5085		3191	1441
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1363	987	0	199	882
RTOR Reduction (vph)	0	0	0	0	30	30
Lane Group Flow (vph)	0	1363	987	0	610	411
Turn Type		NA	NA		Prot	Perm
Protected Phases		2	2		4	
Permitted Phases						4
Actuated Green, G (s)		44.6	44.6		32.4	32.4
Effective Green, g (s)		44.6	44.6		32.4	32.4
Actuated g/C Ratio		0.50	0.50		0.36	0.36
Clearance Time (s)		7.0	7.0		6.0	6.0
Vehicle Extension (s)		2.0	2.0		4.0	4.0
Lane Grp Cap (vph)		2519	2519		1148	518
v/s Ratio Prot		c0.27	0.19		0.19	
v/s Ratio Perm						c0.29
v/c Ratio		0.54	0.39		0.53	0.79
Uniform Delay, d1		15.6	14.2		22.8	25.8
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.8	0.5		0.6	8.6
Delay (s)		16.5	14.7		23.4	34.4
Level of Service		B	B		C	C
Approach Delay (s)		16.5	14.7		27.9	
Approach LOS		B	B		C	

Intersection Summary			
HCM 2000 Control Delay	19.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	61.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	1016	1058	137	101
v/c Ratio	0.26	0.27	0.37	0.48
Control Delay	3.5	3.5	20.5	20.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	3.5	3.5	20.5	20.2
Queue Length 50th (m)	15.6	16.4	5.2	3.4
Queue Length 95th (m)	25.7	27.0	13.8	20.1
Internal Link Dist (m)	352.2	106.9	57.5	
Turn Bay Length (m)			35.0	30.0
Base Capacity (vph)	3944	3944	1132	546
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	0.27	0.12	0.18

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	935	0	0	973	32	187
Future Volume (vph)	935	0	0	973	32	187
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0			7.0	6.0	6.0
Lane Util. Factor	0.91			0.91	0.97	0.91
Frt	1.00			1.00	0.89	0.85
Flt Protected	1.00			1.00	0.99	1.00
Satd. Flow (prot)	5085			5085	3170	1441
Flt Permitted	1.00			1.00	0.99	1.00
Satd. Flow (perm)	5085			5085	3170	1441
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1016	0	0	1058	35	203
RTOR Reduction (vph)	0	0	0	0	77	77
Lane Group Flow (vph)	1016	0	0	1058	60	24
Turn Type	NA			NA	Prot	Perm
Protected Phases	2			2	4	
Permitted Phases						4
Actuated Green, G (s)	77.6			77.6	9.4	9.4
Effective Green, g (s)	77.6			77.6	9.4	9.4
Actuated g/C Ratio	0.78			0.78	0.09	0.09
Clearance Time (s)	7.0			7.0	6.0	6.0
Vehicle Extension (s)	4.0			4.0	4.0	4.0
Lane Grp Cap (vph)	3945			3945	297	135
v/s Ratio Prot	0.20			c0.21	c0.02	
v/s Ratio Perm						0.02
v/c Ratio	0.26			0.27	0.20	0.18
Uniform Delay, d1	3.1			3.2	41.8	41.7
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.0			0.1	0.5	0.9
Delay (s)	3.2			3.2	42.3	42.6
Level of Service	A			A	D	D
Approach Delay (s)	3.2			3.2	42.4	
Approach LOS	A			A	D	

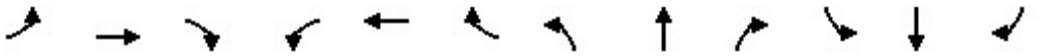
Intersection Summary			
HCM 2000 Control Delay	7.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.26		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	61.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	0	0	0
Future Volume (Veh/h)	0	0	0	0	0	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	0	0	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)						
pX, platoon unblocked						
vC, conflicting volume	0	0			0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0	0			0	
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)	1023	1085			1623	

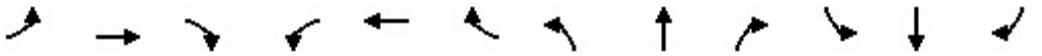
Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	0	0	0	0
Volume Left	0	0	0	0
Volume Right	0	0	0	0
cSH	1700	1700	1700	1700
Volume to Capacity	0.00	0.00	0.00	0.00
Queue Length 95th (m)	0.0	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0	0.0
Lane LOS	A			
Approach Delay (s)	0.0	0.0	0.0	
Approach LOS	A			

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	0.0%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	86	1255	145	61	1074	137	149	186	118	204	211	96
v/c Ratio	0.25	0.41	0.15	0.21	0.36	0.14	0.49	0.55	0.46	0.63	0.56	0.38
Control Delay	9.6	15.9	5.1	9.5	16.1	2.9	47.6	66.4	15.4	53.1	65.1	14.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.6	15.9	5.1	9.5	16.1	2.9	47.6	66.4	15.4	53.1	65.1	14.8
Queue Length 50th (m)	7.6	70.0	5.0	5.3	57.2	0.6	35.5	27.8	0.0	50.4	31.3	0.0
Queue Length 95th (m)	15.1	89.3	16.1	11.4	75.3	10.9	53.9	39.8	19.0	72.5	44.5	17.3
Internal Link Dist (m)		388.6			329.5			288.1			373.4	
Turn Bay Length (m)	220.0		55.0	230.0		65.0	130.0		95.0	115.0		65.0
Base Capacity (vph)	438	3075	998	398	2983	983	336	834	463	329	834	446
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	0.20	0.41	0.15	0.15	0.36	0.14	0.44	0.22	0.25	0.62	0.25	0.22

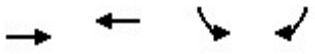
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	79	1155	133	56	988	126	137	171	109	188	194	88
Future Volume (vph)	79	1155	133	56	988	126	137	171	109	188	194	88
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.9	6.9	4.0	6.9	6.9	4.0	7.0	7.0	4.0	7.0	7.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	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)	1770	5085	1583	1770	5085	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.22	1.00	1.00	0.18	1.00	1.00	0.62	1.00	1.00	0.55	1.00	1.00
Satd. Flow (perm)	411	5085	1583	341	5085	1583	1154	3539	1583	1026	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	86	1255	145	61	1074	137	149	186	118	204	211	96
RTOR Reduction (vph)	0	0	41	0	0	55	0	0	107	0	0	86
Lane Group Flow (vph)	86	1255	104	61	1074	82	149	186	11	204	211	10
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	91.4	83.9	83.9	87.8	82.1	82.1	26.8	13.3	13.3	30.2	15.0	15.0
Effective Green, g (s)	91.4	83.9	83.9	87.8	82.1	82.1	26.8	13.3	13.3	30.2	15.0	15.0
Actuated g/C Ratio	0.65	0.60	0.60	0.63	0.59	0.59	0.19	0.10	0.10	0.22	0.11	0.11
Clearance Time (s)	4.0	6.9	6.9	4.0	6.9	6.9	4.0	7.0	7.0	4.0	7.0	7.0
Vehicle Extension (s)	2.0	5.5	5.5	2.0	8.0	8.0	2.0	3.0	3.0	2.0	3.0	3.0
Lane Grp Cap (vph)	341	3047	948	272	2981	928	280	336	150	302	379	169
v/s Ratio Prot	c0.01	c0.25		0.01	0.21		0.05	0.05		c0.07	0.06	
v/s Ratio Perm	0.15		0.07	0.13		0.05	0.05		0.01	c0.07		0.01
v/c Ratio	0.25	0.41	0.11	0.22	0.36	0.09	0.53	0.55	0.07	0.68	0.56	0.06
Uniform Delay, d1	9.4	14.9	12.0	10.5	15.2	12.6	50.0	60.5	57.7	48.7	59.3	56.2
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	0.1	0.4	0.2	0.2	0.3	0.2	1.0	2.0	0.2	4.6	1.8	0.2
Delay (s)	9.5	15.3	12.3	10.7	15.5	12.8	50.9	62.5	58.0	53.3	61.1	56.3
Level of Service	A	B	B	B	B	B	D	E	E	D	E	E
Approach Delay (s)		14.7			15.0			57.5			57.1	
Approach LOS		B			B			E			E	

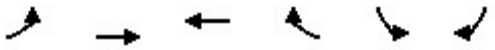
Intersection Summary			
HCM 2000 Control Delay	25.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	21.9
Intersection Capacity Utilization	65.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	1466	858	381	207
v/c Ratio	0.43	0.25	0.58	0.64
Control Delay	8.0	6.7	29.7	29.9
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	8.0	6.7	29.7	29.9
Queue Length 50th (m)	37.2	18.6	26.9	25.0
Queue Length 95th (m)	64.5	33.9	36.1	44.9
Internal Link Dist (m)	329.5	352.2	132.2	
Turn Bay Length (m)			85.0	65.0
Base Capacity (vph)	3414	3414	1448	665
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	0.43	0.25	0.26	0.31

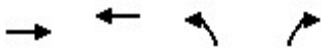
Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑		↰↰	↱
Traffic Volume (vph)	0	1349	789	0	160	381
Future Volume (vph)	0	1349	789	0	160	381
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.0	7.0		6.0	6.0
Lane Util. Factor		0.91	0.91		0.97	0.91
Frt		1.00	1.00		0.92	0.85
Flt Protected		1.00	1.00		0.98	1.00
Satd. Flow (prot)		5085	5085		3245	1441
Flt Permitted		1.00	1.00		0.98	1.00
Satd. Flow (perm)		5085	5085		3245	1441
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1466	858	0	174	414
RTOR Reduction (vph)	0	0	0	0	60	60
Lane Group Flow (vph)	0	1466	858	0	321	147
Turn Type		NA	NA		Prot	Perm
Protected Phases		2	2		4	
Permitted Phases						4
Actuated Green, G (s)		60.4	60.4		16.6	16.6
Effective Green, g (s)		60.4	60.4		16.6	16.6
Actuated g/C Ratio		0.67	0.67		0.18	0.18
Clearance Time (s)		7.0	7.0		6.0	6.0
Vehicle Extension (s)		2.0	2.0		4.0	4.0
Lane Grp Cap (vph)		3412	3412		598	265
v/s Ratio Prot		c0.29	0.17		0.10	
v/s Ratio Perm						c0.10
v/c Ratio		0.43	0.25		0.54	0.56
Uniform Delay, d1		6.8	5.9		33.2	33.4
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.4	0.2		1.2	3.1
Delay (s)		7.2	6.0		34.4	36.5
Level of Service		A	A		C	D
Approach Delay (s)		7.2	6.0		35.1	
Approach LOS		A	A		D	

Intersection Summary			
HCM 2000 Control Delay	12.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	45.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



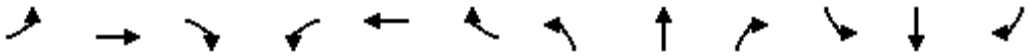
Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	1062	1047	155	107
v/c Ratio	0.27	0.27	0.40	0.50
Control Delay	3.7	3.7	24.6	23.9
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	3.7	3.7	24.6	23.9
Queue Length 50th (m)	17.3	17.0	7.8	6.5
Queue Length 95th (m)	28.7	28.2	16.7	23.7
Internal Link Dist (m)	352.2	106.9	57.5	
Turn Bay Length (m)			35.0	30.0
Base Capacity (vph)	3912	3912	1133	540
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	0.27	0.27	0.14	0.20

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	977	0	0	963	43	198
Future Volume (vph)	977	0	0	963	43	198
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0			7.0	6.0	6.0
Lane Util. Factor	0.91			0.91	0.97	0.91
Frt	1.00			1.00	0.90	0.85
Flt Protected	1.00			1.00	0.99	1.00
Satd. Flow (prot)	5085			5085	3188	1441
Flt Permitted	1.00			1.00	0.99	1.00
Satd. Flow (perm)	5085			5085	3188	1441
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1062	0	0	1047	47	215
RTOR Reduction (vph)	0	0	0	0	68	68
Lane Group Flow (vph)	1062	0	0	1047	87	39
Turn Type	NA			NA	Prot	Perm
Protected Phases	2			2	4	
Permitted Phases						4
Actuated Green, G (s)	76.9			76.9	10.1	10.1
Effective Green, g (s)	76.9			76.9	10.1	10.1
Actuated g/C Ratio	0.77			0.77	0.10	0.10
Clearance Time (s)	7.0			7.0	6.0	6.0
Vehicle Extension (s)	4.0			4.0	4.0	4.0
Lane Grp Cap (vph)	3910			3910	321	145
v/s Ratio Prot	c0.21			0.21	c0.03	
v/s Ratio Perm						0.03
v/c Ratio	0.27			0.27	0.27	0.27
Uniform Delay, d1	3.4			3.4	41.5	41.5
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.1			0.1	0.6	1.3
Delay (s)	3.4			3.4	42.2	42.9
Level of Service	A			A	D	D
Approach Delay (s)	3.4			3.4	42.5	
Approach LOS	A			A	D	

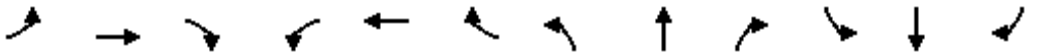
Intersection Summary			
HCM 2000 Control Delay	7.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.27		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	45.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	127	1282	200	283	1553	118	185	346	121	117	199	100
v/c Ratio	0.53	0.53	0.24	0.68	0.53	0.12	0.60	0.62	0.35	0.50	0.41	0.33
Control Delay	20.6	28.0	8.5	28.0	20.7	5.6	49.1	59.9	10.8	46.3	56.9	11.9
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	20.6	28.0	8.5	28.0	20.7	5.6	49.1	59.9	10.8	46.3	56.9	11.9
Queue Length 50th (m)	12.1	94.7	8.8	38.7	96.2	2.9	44.2	50.2	0.0	26.8	28.6	0.0
Queue Length 95th (m)	25.3	125.4	27.7	77.5	141.5	15.2	61.3	64.7	17.7	40.3	38.8	16.2
Internal Link Dist (m)		388.6			329.5			288.1			373.4	
Turn Bay Length (m)	220.0		55.0	230.0		65.0	130.0		95.0	115.0		65.0
Base Capacity (vph)	316	2413	826	418	2907	945	317	910	496	284	910	481
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	0.40	0.53	0.24	0.68	0.53	0.12	0.58	0.38	0.24	0.41	0.22	0.21

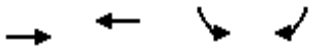
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	127	1282	200	283	1553	118	185	346	121	117	199	100
Future Volume (vph)	127	1282	200	283	1553	118	185	346	121	117	199	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	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)	1770	5085	1583	1770	5085	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.13	1.00	1.00	0.13	1.00	1.00	0.42	1.00	1.00	0.33	1.00	1.00
Satd. Flow (perm)	240	5085	1583	234	5085	1583	776	3539	1583	612	3539	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	127	1282	200	283	1553	118	185	346	121	117	199	100
RTOR Reduction (vph)	0	0	76	0	0	40	0	0	102	0	0	86
Lane Group Flow (vph)	127	1282	124	283	1553	78	185	346	19	117	199	14
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	73.7	63.6	63.6	91.3	77.2	77.2	33.7	19.0	19.0	27.9	16.1	16.1
Effective Green, g (s)	73.7	66.5	66.5	91.3	80.1	80.1	33.7	22.0	22.0	27.9	19.1	19.1
Actuated g/C Ratio	0.53	0.48	0.48	0.65	0.57	0.57	0.24	0.16	0.16	0.20	0.14	0.14
Clearance Time (s)	4.0	6.9	6.9	4.0	6.9	6.9	4.0	7.0	7.0	4.0	7.0	7.0
Vehicle Extension (s)	2.0	5.5	5.5	2.0	8.0	8.0	2.0	3.0	3.0	2.0	3.0	3.0
Lane Grp Cap (vph)	236	2415	751	412	2909	905	291	556	248	219	482	215
v/s Ratio Prot	0.04	0.25		c0.12	0.31		c0.07	c0.10		0.04	0.06	
v/s Ratio Perm	0.24		0.08	c0.33		0.05	0.09		0.01	0.06		0.01
v/c Ratio	0.54	0.53	0.17	0.69	0.53	0.09	0.64	0.62	0.08	0.53	0.41	0.06
Uniform Delay, d1	17.6	25.8	20.9	23.0	18.4	13.5	45.2	55.1	50.3	48.2	55.3	52.7
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	1.2	0.8	0.5	3.8	0.7	0.2	3.3	2.2	0.1	1.3	0.6	0.1
Delay (s)	18.8	26.6	21.4	26.7	19.1	13.7	48.6	57.3	50.5	49.5	55.9	52.8
Level of Service	B	C	C	C	B	B	D	E	D	D	E	D
Approach Delay (s)		25.4			19.9			53.5			53.3	
Approach LOS		C			B			D			D	

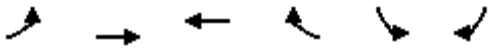
Intersection Summary			
HCM 2000 Control Delay	29.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	72.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	1442	1044	677	466
v/c Ratio	0.55	0.40	0.53	0.78
Control Delay	16.5	14.6	20.2	30.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	16.5	14.6	20.2	30.7
Queue Length 50th (m)	64.0	41.8	42.3	69.4
Queue Length 95th (m)	85.7	57.5	53.5	104.5
Internal Link Dist (m)	329.5	352.2	132.2	
Turn Bay Length (m)			85.0	65.0
Base Capacity (vph)	2640	2640	1481	683
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	0.55	0.40	0.46	0.68

Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑		↰↰	↱
Traffic Volume (vph)	0	1442	1044	0	210	933
Future Volume (vph)	0	1442	1044	0	210	933
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0
Lane Util. Factor		0.91	0.91		0.97	0.91
Frt		1.00	1.00		0.90	0.85
Flt Protected		1.00	1.00		0.98	1.00
Satd. Flow (prot)		5085	5085		3190	1441
Flt Permitted		1.00	1.00		0.98	1.00
Satd. Flow (perm)		5085	5085		3190	1441
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1442	1044	0	210	933
RTOR Reduction (vph)	0	0	0	0	30	30
Lane Group Flow (vph)	0	1442	1044	0	647	436
Turn Type		NA	NA		Prot	Perm
Protected Phases		2	2		4	
Permitted Phases						4
Actuated Green, G (s)		43.7	43.7		33.3	33.3
Effective Green, g (s)		46.7	46.7		35.3	35.3
Actuated g/C Ratio		0.52	0.52		0.39	0.39
Clearance Time (s)		7.0	7.0		6.0	6.0
Vehicle Extension (s)		2.0	2.0		4.0	4.0
Lane Grp Cap (vph)		2638	2638		1251	565
v/s Ratio Prot		c0.28	0.21		0.20	
v/s Ratio Perm						c0.30
v/c Ratio		0.55	0.40		0.52	0.77
Uniform Delay, d1		14.5	13.1		20.8	23.8
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.8	0.4		0.5	6.8
Delay (s)		15.4	13.6		21.3	30.6
Level of Service		B	B		C	C
Approach Delay (s)		15.4	13.6		25.1	
Approach LOS		B	B		C	

Intersection Summary			
HCM 2000 Control Delay	17.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	65.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

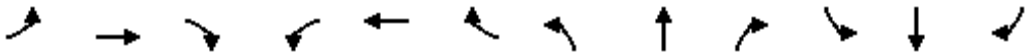
Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	1075	1119	145	107
v/c Ratio	0.26	0.27	0.33	0.44
Control Delay	2.8	2.8	19.8	18.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	2.8	2.8	19.8	18.8
Queue Length 50th (m)	13.6	14.4	5.8	4.6
Queue Length 95th (m)	24.2	25.5	14.3	21.2
Internal Link Dist (m)	352.2	106.9	57.5	
Turn Bay Length (m)			35.0	30.0
Base Capacity (vph)	4083	4083	1194	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	0.26	0.27	0.12	0.19

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1075	0	0	1119	37	215
Future Volume (vph)	1075	0	0	1119	37	215
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	4.0
Lane Util. Factor	0.91			0.91	0.97	0.91
Frt	1.00			1.00	0.89	0.85
Flt Protected	1.00			1.00	0.99	1.00
Satd. Flow (prot)	5085			5085	3170	1441
Flt Permitted	1.00			1.00	0.99	1.00
Satd. Flow (perm)	5085			5085	3170	1441
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1075	0	0	1119	37	215
RTOR Reduction (vph)	0	0	0	0	75	75
Lane Group Flow (vph)	1075	0	0	1119	70	32
Turn Type	NA			NA	Prot	Perm
Protected Phases	2			2	4	
Permitted Phases						4
Actuated Green, G (s)	77.3			77.3	9.7	9.7
Effective Green, g (s)	80.3			80.3	11.7	11.7
Actuated g/C Ratio	0.80			0.80	0.12	0.12
Clearance Time (s)	7.0			7.0	6.0	6.0
Vehicle Extension (s)	4.0			4.0	4.0	4.0
Lane Grp Cap (vph)	4083			4083	370	168
v/s Ratio Prot	0.21			c0.22	0.02	
v/s Ratio Perm						c0.02
v/c Ratio	0.26			0.27	0.19	0.19
Uniform Delay, d1	2.5			2.5	39.9	39.9
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.0			0.0	0.3	0.8
Delay (s)	2.5			2.5	40.2	40.6
Level of Service	A			A	D	D
Approach Delay (s)	2.5			2.5	40.4	
Approach LOS	A			A	D	

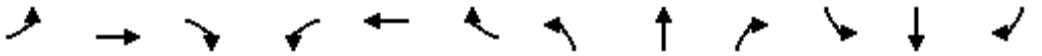
Intersection Summary			
HCM 2000 Control Delay	6.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.26		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	65.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	108	1416	202	91	1757	167	178	306	125	193	231	105
v/c Ratio	0.56	0.48	0.21	0.36	0.59	0.17	0.55	0.59	0.37	0.68	0.43	0.32
Control Delay	24.0	18.3	6.3	13.0	20.6	6.9	45.8	60.4	11.3	51.8	56.2	11.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.0	18.3	6.3	13.0	20.6	6.9	45.8	60.4	11.3	51.8	56.2	11.5
Queue Length 50th (m)	10.6	83.7	8.7	8.8	115.6	8.1	40.7	44.5	0.0	44.6	32.5	0.0
Queue Length 95th (m)	26.6	112.7	24.4	17.2	153.1	22.5	59.7	58.6	18.0	64.6	45.2	16.7
Internal Link Dist (m)		388.6			329.5			288.1			373.4	
Turn Bay Length (m)	220.0		55.0	230.0		65.0	130.0		95.0	115.0		65.0
Base Capacity (vph)	294	2970	979	352	2964	965	345	910	499	301	910	485
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	0.37	0.48	0.21	0.26	0.59	0.17	0.52	0.34	0.25	0.64	0.25	0.22

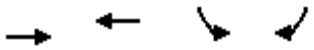
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	108	1416	202	91	1757	167	178	306	125	193	231	105
Future Volume (vph)	108	1416	202	91	1757	167	178	306	125	193	231	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	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)	1770	5085	1583	1770	5085	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.08	1.00	1.00	0.13	1.00	1.00	0.47	1.00	1.00	0.30	1.00	1.00
Satd. Flow (perm)	146	5085	1583	249	5085	1583	873	3539	1583	568	3539	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	108	1416	202	91	1757	167	178	306	125	193	231	105
RTOR Reduction (vph)	0	0	54	0	0	42	0	0	107	0	0	89
Lane Group Flow (vph)	108	1416	148	91	1757	125	178	306	18	193	231	16
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	87.4	78.9	78.9	87.0	78.7	78.7	32.3	17.5	17.5	33.5	18.1	18.1
Effective Green, g (s)	87.4	81.8	81.8	87.0	81.6	81.6	32.3	20.5	20.5	33.5	21.1	21.1
Actuated g/C Ratio	0.62	0.58	0.58	0.62	0.58	0.58	0.23	0.15	0.15	0.24	0.15	0.15
Clearance Time (s)	3.0	6.9	6.9	3.0	6.9	6.9	3.0	7.0	7.0	3.0	7.0	7.0
Vehicle Extension (s)	2.0	5.5	5.5	2.0	8.0	8.0	2.0	3.0	3.0	2.0	3.0	3.0
Lane Grp Cap (vph)	189	2971	924	244	2963	922	296	518	231	268	533	238
v/s Ratio Prot	c0.03	0.28		0.02	c0.35		0.06	0.09		c0.08	0.07	
v/s Ratio Perm	0.32		0.09	0.21		0.08	0.08		0.01	c0.09		0.01
v/c Ratio	0.57	0.48	0.16	0.37	0.59	0.14	0.60	0.59	0.08	0.72	0.43	0.07
Uniform Delay, d1	16.1	16.8	13.3	12.4	18.6	13.2	46.1	55.8	51.6	45.8	54.0	51.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.6	0.6	0.4	0.4	0.8	0.3	2.4	1.8	0.1	7.8	0.6	0.1
Delay (s)	18.7	17.3	13.7	12.8	19.4	13.5	48.5	57.6	51.7	53.6	54.6	51.1
Level of Service	B	B	B	B	B	B	D	E	D	D	D	D
Approach Delay (s)		17.0			18.6			53.8			53.5	
Approach LOS		B			B			D			D	

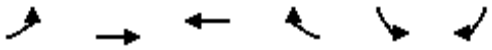
Intersection Summary			
HCM 2000 Control Delay	26.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	72.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	1676	1281	578	371
v/c Ratio	0.63	0.48	0.54	0.76
Control Delay	17.9	15.6	24.8	35.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	17.9	15.6	24.8	35.3
Queue Length 50th (m)	76.1	52.1	41.9	62.1
Queue Length 95th (m)	112.9	78.9	48.7	84.6
Internal Link Dist (m)	329.5	352.2	132.2	
Turn Bay Length (m)			85.0	65.0
Base Capacity (vph)	2669	2669	1399	634
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	0.63	0.48	0.41	0.59

Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑		↰↰	↱
Traffic Volume (vph)	0	1676	1281	0	207	742
Future Volume (vph)	0	1676	1281	0	207	742
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.0	7.0		6.0	6.0
Lane Util. Factor		0.91	0.91		0.97	0.91
Frt		1.00	1.00		0.90	0.85
Flt Protected		1.00	1.00		0.98	1.00
Satd. Flow (prot)		5085	5085		3208	1441
Flt Permitted		1.00	1.00		0.98	1.00
Satd. Flow (perm)		5085	5085		3208	1441
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1676	1281	0	207	742
RTOR Reduction (vph)	0	0	0	0	11	11
Lane Group Flow (vph)	0	1676	1281	0	567	360
Turn Type		NA	NA		Prot	Perm
Protected Phases		2	2		4	
Permitted Phases						4
Actuated Green, G (s)		47.2	47.2		29.8	29.8
Effective Green, g (s)		47.2	47.2		29.8	29.8
Actuated g/C Ratio		0.52	0.52		0.33	0.33
Clearance Time (s)		7.0	7.0		6.0	6.0
Vehicle Extension (s)		2.0	2.0		4.0	4.0
Lane Grp Cap (vph)		2666	2666		1062	477
v/s Ratio Prot		c0.33	0.25		0.18	
v/s Ratio Perm						c0.25
v/c Ratio		0.63	0.48		0.53	0.75
Uniform Delay, d1		15.2	13.6		24.5	26.8
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		1.1	0.6		0.7	7.1
Delay (s)		16.3	14.2		25.1	33.9
Level of Service		B	B		C	C
Approach Delay (s)		16.3	14.2		28.5	
Approach LOS		B	B		C	

Intersection Summary			
HCM 2000 Control Delay	18.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	66.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

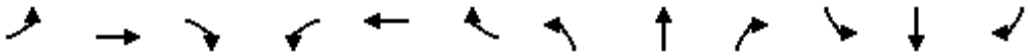
Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	1231	1264	140	114
v/c Ratio	0.31	0.32	0.30	0.48
Control Delay	3.4	3.4	24.3	27.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	3.4	3.4	24.3	27.6
Queue Length 50th (m)	19.0	19.7	7.9	11.8
Queue Length 95th (m)	32.5	33.6	15.9	29.0
Internal Link Dist (m)	352.2	106.9	57.5	
Turn Bay Length (m)			35.0	30.0
Base Capacity (vph)	4010	4010	1168	555
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	0.31	0.32	0.12	0.21

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1231	0	0	1264	26	228
Future Volume (vph)	1231	0	0	1264	26	228
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	4.0
Lane Util. Factor	0.91			0.91	0.97	0.91
Frt	1.00			1.00	0.88	0.85
Flt Protected	1.00			1.00	0.99	1.00
Satd. Flow (prot)	5085			5085	3143	1441
Flt Permitted	1.00			1.00	0.99	1.00
Satd. Flow (perm)	5085			5085	3143	1441
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1231	0	0	1264	26	228
RTOR Reduction (vph)	0	0	0	0	50	50
Lane Group Flow (vph)	1231	0	0	1264	90	64
Turn Type	NA			NA	Prot	Perm
Protected Phases	2			2	4	
Permitted Phases						4
Actuated Green, G (s)	75.9			75.9	11.1	11.1
Effective Green, g (s)	78.9			78.9	13.1	13.1
Actuated g/C Ratio	0.79			0.79	0.13	0.13
Clearance Time (s)	7.0			7.0	6.0	6.0
Vehicle Extension (s)	4.0			4.0	4.0	4.0
Lane Grp Cap (vph)	4012			4012	411	188
v/s Ratio Prot	0.24			c0.25	0.03	
v/s Ratio Perm						c0.04
v/c Ratio	0.31			0.32	0.22	0.34
Uniform Delay, d1	2.9			3.0	38.9	39.5
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.1			0.1	0.4	1.5
Delay (s)	3.0			3.0	39.2	41.0
Level of Service	A			A	D	D
Approach Delay (s)	3.0			3.0	40.0	
Approach LOS	A			A	D	

Intersection Summary			
HCM 2000 Control Delay	6.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	66.2%	ICU Level of Service	C
Analysis Period (min)	15		

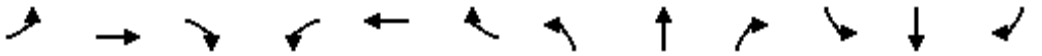
c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	91	1328	153	64	1136	145	158	197	123	216	223	101
v/c Ratio	0.28	0.41	0.15	0.23	0.36	0.14	0.56	0.48	0.42	0.73	0.46	0.33
Control Delay	9.3	13.8	3.4	9.1	13.8	2.1	50.1	61.5	13.4	59.4	58.8	12.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.3	13.8	3.4	9.1	13.8	2.1	50.1	61.5	13.4	59.4	58.8	12.6
Queue Length 50th (m)	8.4	73.3	3.3	5.8	59.7	0.0	36.6	28.7	0.0	51.9	31.5	0.0
Queue Length 95th (m)	14.6	84.9	12.8	11.0	71.4	9.2	57.9	41.0	18.9	#79.5	45.4	17.3
Internal Link Dist (m)		388.6			329.5			288.1			373.4	
Turn Bay Length (m)	220.0		55.0	230.0		65.0	130.0		95.0	115.0		65.0
Base Capacity (vph)	380	3231	1051	357	3147	1035	301	733	425	299	758	418
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	0.24	0.41	0.15	0.18	0.36	0.14	0.52	0.27	0.29	0.72	0.29	0.24

Intersection Summary

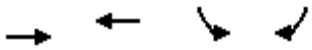
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	91	1328	153	64	1136	145	158	197	123	216	223	101
Future Volume (vph)	91	1328	153	64	1136	145	158	197	123	216	223	101
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	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)	1770	5085	1583	1770	5085	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.20	1.00	1.00	0.16	1.00	1.00	0.54	1.00	1.00	0.38	1.00	1.00
Satd. Flow (perm)	372	5085	1583	304	5085	1583	1001	3539	1583	708	3539	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	91	1328	153	64	1136	145	158	197	123	216	223	101
RTOR Reduction (vph)	0	0	46	0	0	55	0	0	109	0	0	87
Lane Group Flow (vph)	91	1328	107	64	1136	90	158	197	14	216	223	14
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	92.9	85.5	85.5	89.5	83.8	83.8	26.1	13.3	13.3	31.7	16.1	16.1
Effective Green, g (s)	92.9	88.4	88.4	89.5	86.7	86.7	26.1	16.3	16.3	31.7	19.1	19.1
Actuated g/C Ratio	0.66	0.63	0.63	0.64	0.62	0.62	0.19	0.12	0.12	0.23	0.14	0.14
Clearance Time (s)	3.0	6.9	6.9	3.0	6.9	6.9	3.0	7.0	7.0	3.0	7.0	7.0
Vehicle Extension (s)	2.0	5.5	5.5	2.0	8.0	8.0	2.0	3.0	3.0	2.0	3.0	3.0
Lane Grp Cap (vph)	320	3210	999	254	3149	980	256	412	184	278	482	215
v/s Ratio Prot	c0.01	c0.26		0.01	0.22		0.06	0.06		c0.09	0.06	
v/s Ratio Perm	0.17		0.07	0.15		0.06	0.06		0.01	c0.09		0.01
v/c Ratio	0.28	0.41	0.11	0.25	0.36	0.09	0.62	0.48	0.08	0.78	0.46	0.06
Uniform Delay, d1	9.2	12.9	10.2	10.2	13.1	10.8	50.9	57.9	55.1	47.9	55.7	52.7
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	0.4	0.2	0.2	0.3	0.2	3.1	0.9	0.2	11.7	0.7	0.1
Delay (s)	9.4	13.3	10.4	10.4	13.4	10.9	54.0	58.7	55.3	59.6	56.4	52.8
Level of Service	A	B	B	B	B	B	D	E	E	E	E	D
Approach Delay (s)		12.8			13.0			56.3			57.0	
Approach LOS		B			B			E			E	

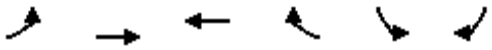
Intersection Summary			
HCM 2000 Control Delay	24.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	65.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	1551	907	403	219
v/c Ratio	0.44	0.26	0.53	0.59
Control Delay	7.1	5.9	26.9	26.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	7.1	5.9	26.9	26.1
Queue Length 50th (m)	37.4	18.4	27.2	25.3
Queue Length 95th (m)	64.8	33.5	36.4	45.2
Internal Link Dist (m)	329.5	352.2	132.2	
Turn Bay Length (m)			85.0	65.0
Base Capacity (vph)	3541	3541	1519	698
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	0.44	0.26	0.27	0.31

Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑		↰↰	↱
Traffic Volume (vph)	0	1551	907	0	184	438
Future Volume (vph)	0	1551	907	0	184	438
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0
Lane Util. Factor		0.91	0.91		0.97	0.91
Frt		1.00	1.00		0.92	0.85
Flt Protected		1.00	1.00		0.98	1.00
Satd. Flow (prot)		5085	5085		3245	1441
Flt Permitted		1.00	1.00		0.98	1.00
Satd. Flow (perm)		5085	5085		3245	1441
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1551	907	0	184	438
RTOR Reduction (vph)	0	0	0	0	60	60
Lane Group Flow (vph)	0	1551	907	0	343	159
Turn Type		NA	NA		Prot	Perm
Protected Phases		2	2		4	
Permitted Phases						4
Actuated Green, G (s)		59.7	59.7		17.3	17.3
Effective Green, g (s)		62.7	62.7		19.3	19.3
Actuated g/C Ratio		0.70	0.70		0.21	0.21
Clearance Time (s)		7.0	7.0		6.0	6.0
Vehicle Extension (s)		2.0	2.0		4.0	4.0
Lane Grp Cap (vph)		3542	3542		695	309
v/s Ratio Prot		c0.30	0.18		0.11	
v/s Ratio Perm						c0.11
v/c Ratio		0.44	0.26		0.49	0.51
Uniform Delay, d1		6.0	5.0		31.1	31.2
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.4	0.2		0.8	1.9
Delay (s)		6.4	5.2		31.8	33.1
Level of Service		A	A		C	C
Approach Delay (s)		6.4	5.2		32.3	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	11.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	46.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

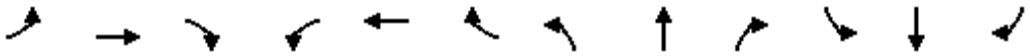
Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	1124	1107	171	122
v/c Ratio	0.28	0.28	0.36	0.49
Control Delay	3.2	3.2	23.7	23.9
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	3.2	3.2	23.7	23.9
Queue Length 50th (m)	16.2	16.0	9.3	9.7
Queue Length 95th (m)	28.6	28.1	18.0	27.5
Internal Link Dist (m)	352.2	106.9	57.5	
Turn Bay Length (m)			35.0	30.0
Base Capacity (vph)	4025	4025	1193	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	0.28	0.28	0.14	0.22

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1124	0	0	1107	49	244
Future Volume (vph)	1124	0	0	1107	49	244
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	4.0
Lane Util. Factor	0.91			0.91	0.97	0.91
Frt	1.00			1.00	0.89	0.85
Flt Protected	1.00			1.00	0.99	1.00
Satd. Flow (prot)	5085			5085	3181	1441
Flt Permitted	1.00			1.00	0.99	1.00
Satd. Flow (perm)	5085			5085	3181	1441
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1124	0	0	1107	49	244
RTOR Reduction (vph)	0	0	0	0	65	65
Lane Group Flow (vph)	1124	0	0	1107	106	57
Turn Type	NA			NA	Prot	Perm
Protected Phases	2			2	4	
Permitted Phases						4
Actuated Green, G (s)	76.2			76.2	10.8	10.8
Effective Green, g (s)	79.2			79.2	12.8	12.8
Actuated g/C Ratio	0.79			0.79	0.13	0.13
Clearance Time (s)	7.0			7.0	6.0	6.0
Vehicle Extension (s)	4.0			4.0	4.0	4.0
Lane Grp Cap (vph)	4027			4027	407	184
v/s Ratio Prot	c0.22			0.22	0.03	
v/s Ratio Perm						c0.04
v/c Ratio	0.28			0.27	0.26	0.31
Uniform Delay, d1	2.8			2.8	39.3	39.6
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.1			0.1	0.5	1.3
Delay (s)	2.8			2.8	39.8	40.9
Level of Service	A			A	D	D
Approach Delay (s)	2.8			2.8	40.2	
Approach LOS	A			A	D	

Intersection Summary			
HCM 2000 Control Delay	7.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	46.5%	ICU Level of Service	A
Analysis Period (min)	15		

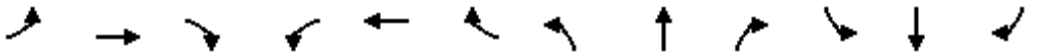
c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	132	1338	209	295	1620	124	193	361	126	122	208	104
v/c Ratio	0.57	0.59	0.27	0.68	0.57	0.13	0.62	0.63	0.35	0.52	0.41	0.33
Control Delay	24.8	31.4	9.6	34.2	22.2	6.3	49.0	59.3	10.4	45.9	56.1	11.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.8	31.4	9.6	34.2	22.2	6.3	49.0	59.3	10.4	45.9	56.1	11.3
Queue Length 50th (m)	12.9	106.0	10.8	49.9	105.4	3.7	45.9	52.3	0.0	27.8	29.7	0.0
Queue Length 95th (m)	29.1	132.4	30.2	#96.8	154.5	16.9	62.9	66.5	17.7	41.3	39.7	16.2
Internal Link Dist (m)		388.6			329.5			288.1			373.4	
Turn Bay Length (m)	220.0		55.0	230.0		65.0	130.0		95.0	115.0		65.0
Base Capacity (vph)	301	2259	783	433	2857	930	320	910	500	285	910	484
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	0.44	0.59	0.27	0.68	0.57	0.13	0.60	0.40	0.25	0.43	0.23	0.21

Intersection Summary

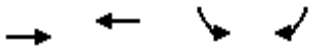
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	132	1338	209	295	1620	124	193	361	126	122	208	104
Future Volume (vph)	132	1338	209	295	1620	124	193	361	126	122	208	104
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	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)	1770	5085	1583	1770	5085	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.12	1.00	1.00	0.10	1.00	1.00	0.41	1.00	1.00	0.32	1.00	1.00
Satd. Flow (perm)	223	5085	1583	194	5085	1583	767	3539	1583	589	3539	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	132	1338	209	295	1620	124	193	361	126	122	208	104
RTOR Reduction (vph)	0	0	80	0	0	41	0	0	105	0	0	89
Lane Group Flow (vph)	132	1338	129	295	1620	83	193	361	21	122	208	15
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	69.8	59.3	59.3	90.3	75.8	75.8	34.7	19.8	19.8	28.9	16.9	16.9
Effective Green, g (s)	69.8	62.2	62.2	90.3	78.7	78.7	34.7	22.8	22.8	28.9	19.9	19.9
Actuated g/C Ratio	0.50	0.44	0.44	0.64	0.56	0.56	0.25	0.16	0.16	0.21	0.14	0.14
Clearance Time (s)	4.0	6.9	6.9	4.0	6.9	6.9	4.0	7.0	7.0	4.0	7.0	7.0
Vehicle Extension (s)	2.0	5.5	5.5	2.0	8.0	8.0	2.0	3.0	3.0	2.0	3.0	3.0
Lane Grp Cap (vph)	227	2259	703	429	2858	889	296	576	257	222	503	225
v/s Ratio Prot	0.04	0.26		c0.13	0.32		c0.07	c0.10		0.05	0.06	
v/s Ratio Perm	0.25		0.08	c0.31		0.05	0.09		0.01	0.07		0.01
v/c Ratio	0.58	0.59	0.18	0.69	0.57	0.09	0.65	0.63	0.08	0.55	0.41	0.07
Uniform Delay, d1	19.7	29.3	23.5	29.4	19.7	14.2	44.6	54.6	49.7	47.5	54.7	52.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.4	1.2	0.6	3.6	0.8	0.2	3.9	2.1	0.1	1.5	0.6	0.1
Delay (s)	22.1	30.5	24.1	33.1	20.5	14.4	48.5	56.8	49.8	49.0	55.3	52.1
Level of Service	C	C	C	C	C	B	D	E	D	D	E	D
Approach Delay (s)		29.0			21.9			53.1			52.8	
Approach LOS		C			C			D			D	

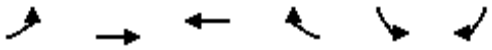
Intersection Summary			
HCM 2000 Control Delay	31.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	74.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	1505	1090	707	486
v/c Ratio	0.58	0.42	0.54	0.80
Control Delay	17.6	15.4	20.1	31.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	17.6	15.4	20.1	31.6
Queue Length 50th (m)	71.3	46.3	43.5	72.4
Queue Length 95th (m)	90.9	60.5	56.9	112.7
Internal Link Dist (m)	329.5	352.2	132.2	
Turn Bay Length (m)			85.0	65.0
Base Capacity (vph)	2579	2579	1478	680
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	0.58	0.42	0.48	0.71

Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑		↰↰↰	↱
Traffic Volume (vph)	0	1505	1090	0	220	973
Future Volume (vph)	0	1505	1090	0	220	973
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0
Lane Util. Factor		0.91	0.91		0.97	0.91
Frt		1.00	1.00		0.90	0.85
Flt Protected		1.00	1.00		0.98	1.00
Satd. Flow (prot)		5085	5085		3191	1441
Flt Permitted		1.00	1.00		0.98	1.00
Satd. Flow (perm)		5085	5085		3191	1441
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1505	1090	0	220	973
RTOR Reduction (vph)	0	0	0	0	26	26
Lane Group Flow (vph)	0	1505	1090	0	681	460
Turn Type		NA	NA		Prot	Perm
Protected Phases		2	2		4	
Permitted Phases						4
Actuated Green, G (s)		42.7	42.7		34.3	34.3
Effective Green, g (s)		45.7	45.7		36.3	36.3
Actuated g/C Ratio		0.51	0.51		0.40	0.40
Clearance Time (s)		7.0	7.0		6.0	6.0
Vehicle Extension (s)		2.0	2.0		4.0	4.0
Lane Grp Cap (vph)		2582	2582		1287	581
v/s Ratio Prot		c0.30	0.21		0.21	
v/s Ratio Perm						c0.32
v/c Ratio		0.58	0.42		0.53	0.79
Uniform Delay, d1		15.5	13.9		20.4	23.5
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		1.0	0.5		0.5	7.7
Delay (s)		16.5	14.4		20.9	31.2
Level of Service		B	B		C	C
Approach Delay (s)		16.5	14.4		25.1	
Approach LOS		B	B		C	

Intersection Summary			
HCM 2000 Control Delay	18.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	67.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	1122	1168	150	112
v/c Ratio	0.28	0.29	0.33	0.46
Control Delay	3.0	3.0	21.9	21.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	3.0	3.0	21.9	21.8
Queue Length 50th (m)	15.2	16.0	7.2	7.4
Queue Length 95th (m)	27.2	28.3	15.6	24.3
Internal Link Dist (m)	352.2	106.9	57.5	
Turn Bay Length (m)			35.0	30.0
Base Capacity (vph)	4054	4054	1188	567
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	0.28	0.29	0.13	0.20

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1122	0	0	1168	38	224
Future Volume (vph)	1122	0	0	1168	38	224
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	4.0
Lane Util. Factor	0.91			0.91	0.97	0.91
Frt	1.00			1.00	0.89	0.85
Flt Protected	1.00			1.00	0.99	1.00
Satd. Flow (prot)	5085			5085	3169	1441
Flt Permitted	1.00			1.00	0.99	1.00
Satd. Flow (perm)	5085			5085	3169	1441
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1122	0	0	1168	38	224
RTOR Reduction (vph)	0	0	0	0	67	67
Lane Group Flow (vph)	1122	0	0	1168	83	45
Turn Type	NA			NA	Prot	Perm
Protected Phases	2			2	4	
Permitted Phases						4
Actuated Green, G (s)	76.7			76.7	10.3	10.3
Effective Green, g (s)	79.7			79.7	12.3	12.3
Actuated g/C Ratio	0.80			0.80	0.12	0.12
Clearance Time (s)	7.0			7.0	6.0	6.0
Vehicle Extension (s)	4.0			4.0	4.0	4.0
Lane Grp Cap (vph)	4052			4052	389	177
v/s Ratio Prot	0.22			c0.23	0.03	
v/s Ratio Perm						c0.03
v/c Ratio	0.28			0.29	0.21	0.26
Uniform Delay, d1	2.6			2.7	39.5	39.7
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.1			0.1	0.4	1.0
Delay (s)	2.7			2.7	39.9	40.8
Level of Service	A			A	D	D
Approach Delay (s)	2.7			2.7	40.3	
Approach LOS	A			A	D	

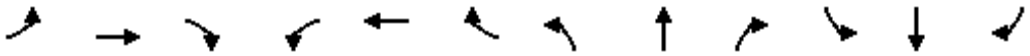
Intersection Summary			
HCM 2000 Control Delay	6.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	67.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	617	0	0	425
Future Volume (Veh/h)	0	0	617	0	0	425
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	0	617	0	0	425
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	830	308			617	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	830	308			617	
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)	309	687			959	

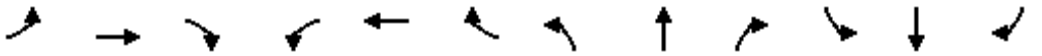
Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	0	0	411	206	0	212	212
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.32	0.20	0.24	0.12	0.00	0.13	0.13
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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	20.4%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	113	1477	211	95	1834	174	186	319	131	202	241	109
v/c Ratio	0.61	0.50	0.22	0.40	0.63	0.18	0.58	0.60	0.38	0.71	0.44	0.33
Control Delay	31.2	19.2	6.8	14.1	21.8	7.4	46.1	60.2	11.0	53.2	56.1	11.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.2	19.2	6.8	14.1	21.8	7.4	46.1	60.2	11.0	53.2	56.1	11.3
Queue Length 50th (m)	11.3	90.5	9.9	9.4	125.4	9.1	42.5	46.3	0.0	46.6	34.0	0.0
Queue Length 95th (m)	31.9	121.3	26.6	17.9	165.8	24.4	62.0	60.6	18.2	67.2	46.6	16.9
Internal Link Dist (m)		388.6			329.5			288.1			373.4	
Turn Bay Length (m)	220.0		55.0	230.0		65.0	130.0		95.0	115.0		65.0
Base Capacity (vph)	284	2935	969	337	2930	955	344	910	504	300	910	488
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	0.40	0.50	0.22	0.28	0.63	0.18	0.54	0.35	0.26	0.67	0.26	0.22

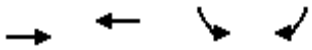
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	113	1477	211	95	1834	174	186	319	131	202	241	109
Future Volume (vph)	113	1477	211	95	1834	174	186	319	131	202	241	109
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	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)	1770	5085	1583	1770	5085	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.07	1.00	1.00	0.12	1.00	1.00	0.45	1.00	1.00	0.29	1.00	1.00
Satd. Flow (perm)	126	5085	1583	225	5085	1583	842	3539	1583	549	3539	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	113	1477	211	95	1834	174	186	319	131	202	241	109
RTOR Reduction (vph)	0	0	56	0	0	43	0	0	111	0	0	92
Lane Group Flow (vph)	113	1477	155	95	1834	131	186	319	20	202	241	17
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	86.6	77.9	77.9	86.4	77.8	77.8	33.1	18.0	18.0	34.1	18.5	18.5
Effective Green, g (s)	86.6	80.8	80.8	86.4	80.7	80.7	33.1	21.0	21.0	34.1	21.5	21.5
Actuated g/C Ratio	0.62	0.58	0.58	0.62	0.58	0.58	0.24	0.15	0.15	0.24	0.15	0.15
Clearance Time (s)	3.0	6.9	6.9	3.0	6.9	6.9	3.0	7.0	7.0	3.0	7.0	7.0
Vehicle Extension (s)	2.0	5.5	5.5	2.0	8.0	8.0	2.0	3.0	3.0	2.0	3.0	3.0
Lane Grp Cap (vph)	180	2934	913	233	2931	912	299	530	237	269	543	243
v/s Ratio Prot	c0.04	0.29		0.02	c0.36		0.07	0.09		c0.08	0.07	
v/s Ratio Perm	0.35		0.10	0.23		0.08	0.08		0.01	c0.10		0.01
v/c Ratio	0.63	0.50	0.17	0.41	0.63	0.14	0.62	0.60	0.08	0.75	0.44	0.07
Uniform Delay, d1	18.5	17.6	13.9	13.2	19.6	13.7	45.7	55.6	51.2	45.6	53.8	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	4.9	0.6	0.4	0.4	1.0	0.3	2.9	1.9	0.2	10.0	0.6	0.1
Delay (s)	23.3	18.3	14.3	13.6	20.6	14.0	48.6	57.5	51.4	55.6	54.4	50.8
Level of Service	C	B	B	B	C	B	D	E	D	E	D	D
Approach Delay (s)		18.1			19.7			53.6			54.1	
Approach LOS		B			B			D			D	

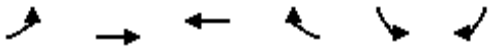
Intersection Summary			
HCM 2000 Control Delay	27.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	75.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	1748	1337	603	387
v/c Ratio	0.67	0.51	0.54	0.77
Control Delay	19.2	16.6	24.3	35.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	19.2	16.6	24.3	35.3
Queue Length 50th (m)	83.5	56.8	43.5	65.1
Queue Length 95th (m)	120.0	83.0	51.3	90.2
Internal Link Dist (m)	329.5	352.2	132.2	
Turn Bay Length (m)			85.0	65.0
Base Capacity (vph)	2604	2604	1398	632
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	0.67	0.51	0.43	0.61

Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑		↰↰	↱
Traffic Volume (vph)	0	1748	1337	0	216	774
Future Volume (vph)	0	1748	1337	0	216	774
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.0	7.0		6.0	6.0
Lane Util. Factor		0.91	0.91		0.97	0.91
Frt		1.00	1.00		0.90	0.85
Flt Protected		1.00	1.00		0.98	1.00
Satd. Flow (prot)		5085	5085		3208	1441
Flt Permitted		1.00	1.00		0.98	1.00
Satd. Flow (perm)		5085	5085		3208	1441
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1748	1337	0	216	774
RTOR Reduction (vph)	0	0	0	0	9	9
Lane Group Flow (vph)	0	1748	1337	0	594	378
Turn Type		NA	NA		Prot	Perm
Protected Phases		2	2		4	
Permitted Phases						4
Actuated Green, G (s)		46.1	46.1		30.9	30.9
Effective Green, g (s)		46.1	46.1		30.9	30.9
Actuated g/C Ratio		0.51	0.51		0.34	0.34
Clearance Time (s)		7.0	7.0		6.0	6.0
Vehicle Extension (s)		2.0	2.0		4.0	4.0
Lane Grp Cap (vph)		2604	2604		1101	494
v/s Ratio Prot		c0.34	0.26		0.19	
v/s Ratio Perm						c0.26
v/c Ratio		0.67	0.51		0.54	0.76
Uniform Delay, d1		16.3	14.5		23.8	26.3
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		1.4	0.7		0.7	7.4
Delay (s)		17.7	15.3		24.5	33.7
Level of Service		B	B		C	C
Approach Delay (s)		17.7	15.3		28.1	
Approach LOS		B	B		C	

Intersection Summary			
HCM 2000 Control Delay	19.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	68.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

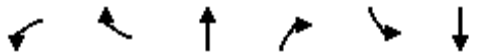
Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	1284	1319	147	119
v/c Ratio	0.32	0.33	0.31	0.49
Control Delay	3.7	3.7	26.0	30.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	3.7	3.7	26.0	30.0
Queue Length 50th (m)	21.3	22.1	9.2	14.2
Queue Length 95th (m)	36.0	37.2	17.3	31.8
Internal Link Dist (m)	352.2	106.9	57.5	
Turn Bay Length (m)			35.0	30.0
Base Capacity (vph)	3974	3974	1165	550
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	0.32	0.33	0.13	0.22

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1284	0	0	1319	28	238
Future Volume (vph)	1284	0	0	1319	28	238
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	4.0
Lane Util. Factor	0.91			0.91	0.97	0.91
Frt	1.00			1.00	0.88	0.85
Flt Protected	1.00			1.00	0.99	1.00
Satd. Flow (prot)	5085			5085	3145	1441
Flt Permitted	1.00			1.00	0.99	1.00
Satd. Flow (perm)	5085			5085	3145	1441
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1284	0	0	1319	28	238
RTOR Reduction (vph)	0	0	0	0	43	43
Lane Group Flow (vph)	1284	0	0	1319	104	76
Turn Type	NA			NA	Prot	Perm
Protected Phases	2			2	4	
Permitted Phases						4
Actuated Green, G (s)	75.2			75.2	11.8	11.8
Effective Green, g (s)	78.2			78.2	13.8	13.8
Actuated g/C Ratio	0.78			0.78	0.14	0.14
Clearance Time (s)	7.0			7.0	6.0	6.0
Vehicle Extension (s)	4.0			4.0	4.0	4.0
Lane Grp Cap (vph)	3976			3976	434	198
v/s Ratio Prot	0.25			c0.26	0.03	
v/s Ratio Perm						c0.05
v/c Ratio	0.32			0.33	0.24	0.38
Uniform Delay, d1	3.2			3.2	38.4	39.2
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.1			0.1	0.4	1.7
Delay (s)	3.2			3.3	38.8	40.9
Level of Service	A			A	D	D
Approach Delay (s)	3.2			3.3	39.8	
Approach LOS	A			A	D	

Intersection Summary			
HCM 2000 Control Delay	6.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	68.6%	ICU Level of Service	C
Analysis Period (min)	15		

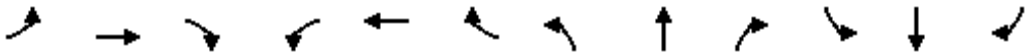
c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	7	5	606	64	51	529
Future Volume (Veh/h)	7	5	606	64	51	529
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	7	5	606	64	51	529
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1004	335			670	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1004	335			670	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	97	99			94	
cM capacity (veh/h)	225	661			916	

Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	7	5	404	266	51	264	264
Volume Left	7	0	0	0	51	0	0
Volume Right	0	5	0	64	0	0	0
cSH	225	661	1700	1700	916	1700	1700
Volume to Capacity	0.03	0.01	0.24	0.16	0.06	0.16	0.16
Queue Length 95th (m)	0.8	0.2	0.0	0.0	1.4	0.0	0.0
Control Delay (s)	21.5	10.5	0.0	0.0	9.2	0.0	0.0
Lane LOS	C	B			A		
Approach Delay (s)	16.9		0.0		0.8		
Approach LOS	C						

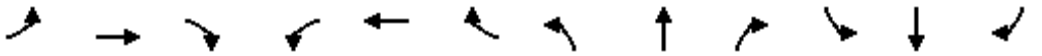
Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	35.5%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	95	1386	160	67	1186	151	164	205	128	226	233	106
v/c Ratio	0.30	0.43	0.15	0.25	0.38	0.15	0.59	0.49	0.43	0.78	0.49	0.35
Control Delay	9.5	13.9	3.6	9.4	13.9	2.1	51.9	61.3	13.1	64.3	59.7	12.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.5	13.9	3.6	9.4	13.9	2.1	51.9	61.3	13.1	64.3	59.7	12.5
Queue Length 50th (m)	7.9	72.1	3.8	5.5	58.5	0.0	39.6	29.8	0.0	56.7	34.0	0.0
Queue Length 95th (m)	15.2	90.9	14.1	11.5	76.3	9.6	59.5	42.3	19.1	#85.5	46.9	17.5
Internal Link Dist (m)		388.6			329.5			288.1			373.4	
Turn Bay Length (m)	220.0		55.0	230.0		65.0	130.0		95.0	115.0		65.0
Base Capacity (vph)	366	3239	1053	344	3154	1039	292	733	429	291	758	422
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	0.26	0.43	0.15	0.19	0.38	0.15	0.56	0.28	0.30	0.78	0.31	0.25

Intersection Summary

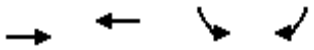
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	95	1386	160	67	1186	151	164	205	128	226	233	106
Future Volume (vph)	95	1386	160	67	1186	151	164	205	128	226	233	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	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)	1770	5085	1583	1770	5085	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.19	1.00	1.00	0.15	1.00	1.00	0.49	1.00	1.00	0.38	1.00	1.00
Satd. Flow (perm)	349	5085	1583	282	5085	1583	918	3539	1583	710	3539	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	95	1386	160	67	1186	151	164	205	128	226	233	106
RTOR Reduction (vph)	0	0	46	0	0	57	0	0	113	0	0	92
Lane Group Flow (vph)	95	1386	114	67	1186	94	164	205	15	226	233	14
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	93.1	85.6	85.6	89.7	83.9	83.9	26.4	13.6	13.6	31.0	15.9	15.9
Effective Green, g (s)	93.1	88.5	88.5	89.7	86.8	86.8	26.4	16.6	16.6	31.0	18.9	18.9
Actuated g/C Ratio	0.66	0.63	0.63	0.64	0.62	0.62	0.19	0.12	0.12	0.22	0.13	0.13
Clearance Time (s)	3.0	6.9	6.9	3.0	6.9	6.9	3.0	7.0	7.0	3.0	7.0	7.0
Vehicle Extension (s)	2.0	5.5	5.5	2.0	8.0	8.0	2.0	3.0	3.0	2.0	3.0	3.0
Lane Grp Cap (vph)	308	3214	1000	242	3152	981	251	419	187	271	477	213
v/s Ratio Prot	c0.02	c0.27		0.01	0.23		0.06	0.06		c0.09	0.07	
v/s Ratio Perm	0.19		0.07	0.17		0.06	0.06		0.01	c0.09		0.01
v/c Ratio	0.31	0.43	0.11	0.28	0.38	0.10	0.65	0.49	0.08	0.83	0.49	0.07
Uniform Delay, d1	9.3	13.0	10.2	10.3	13.2	10.7	50.8	57.7	54.9	49.1	56.1	52.9
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	0.2	0.4	0.2	0.2	0.3	0.2	4.6	0.9	0.2	18.5	0.8	0.1
Delay (s)	9.5	13.4	10.4	10.6	13.5	10.9	55.4	58.6	55.1	67.7	56.9	53.0
Level of Service	A	B	B	B	B	B	E	E	E	E	E	D
Approach Delay (s)		12.9			13.1			56.7			60.5	
Approach LOS		B			B			E			E	

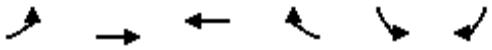
Intersection Summary			
HCM 2000 Control Delay	24.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	66.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	1619	947	421	228
v/c Ratio	0.46	0.27	0.54	0.60
Control Delay	7.8	6.3	27.2	27.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	7.8	6.3	27.2	27.6
Queue Length 50th (m)	41.9	20.5	29.3	28.6
Queue Length 95th (m)	71.5	36.5	38.1	48.4
Internal Link Dist (m)	329.5	352.2	132.2	
Turn Bay Length (m)			85.0	65.0
Base Capacity (vph)	3487	3487	1514	693
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	0.46	0.27	0.28	0.33

Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑		↰↑↑	↱
Traffic Volume (vph)	0	1619	947	0	192	457
Future Volume (vph)	0	1619	947	0	192	457
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0
Lane Util. Factor		0.91	0.91		0.97	0.91
Frt		1.00	1.00		0.92	0.85
Flt Protected		1.00	1.00		0.98	1.00
Satd. Flow (prot)		5085	5085		3245	1441
Flt Permitted		1.00	1.00		0.98	1.00
Satd. Flow (perm)		5085	5085		3245	1441
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1619	947	0	192	457
RTOR Reduction (vph)	0	0	0	0	53	53
Lane Group Flow (vph)	0	1619	947	0	368	175
Turn Type		NA	NA		Prot	Perm
Protected Phases		2	2		4	
Permitted Phases						4
Actuated Green, G (s)		58.7	58.7		18.3	18.3
Effective Green, g (s)		61.7	61.7		20.3	20.3
Actuated g/C Ratio		0.69	0.69		0.23	0.23
Clearance Time (s)		7.0	7.0		6.0	6.0
Vehicle Extension (s)		2.0	2.0		4.0	4.0
Lane Grp Cap (vph)		3486	3486		731	325
v/s Ratio Prot		c0.32	0.19		0.11	
v/s Ratio Perm						c0.12
v/c Ratio		0.46	0.27		0.50	0.54
Uniform Delay, d1		6.5	5.5		30.5	30.7
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.4	0.2		0.7	2.2
Delay (s)		7.0	5.7		31.2	32.9
Level of Service		A	A		C	C
Approach Delay (s)		7.0	5.7		31.8	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	11.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	48.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	1172	1156	179	127
v/c Ratio	0.29	0.29	0.37	0.50
Control Delay	3.5	3.5	25.6	26.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	3.5	3.5	25.6	26.7
Queue Length 50th (m)	18.2	17.9	10.8	12.4
Queue Length 95th (m)	31.6	31.2	19.5	30.5
Internal Link Dist (m)	352.2	106.9	57.5	
Turn Bay Length (m)			35.0	30.0
Base Capacity (vph)	3991	3991	1189	561
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	0.29	0.29	0.15	0.23

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1172	0	0	1156	52	254
Future Volume (vph)	1172	0	0	1156	52	254
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	4.0
Lane Util. Factor	0.91			0.91	0.97	0.91
Frt	1.00			1.00	0.89	0.85
Flt Protected	1.00			1.00	0.99	1.00
Satd. Flow (prot)	5085			5085	3183	1441
Flt Permitted	1.00			1.00	0.99	1.00
Satd. Flow (perm)	5085			5085	3183	1441
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1172	0	0	1156	52	254
RTOR Reduction (vph)	0	0	0	0	58	58
Lane Group Flow (vph)	1172	0	0	1156	121	69
Turn Type	NA			NA	Prot	Perm
Protected Phases	2			2	4	
Permitted Phases						4
Actuated Green, G (s)	75.5			75.5	11.5	11.5
Effective Green, g (s)	78.5			78.5	13.5	13.5
Actuated g/C Ratio	0.78			0.78	0.14	0.14
Clearance Time (s)	7.0			7.0	6.0	6.0
Vehicle Extension (s)	4.0			4.0	4.0	4.0
Lane Grp Cap (vph)	3991			3991	429	194
v/s Ratio Prot	c0.23			0.23	0.04	
v/s Ratio Perm						c0.05
v/c Ratio	0.29			0.29	0.28	0.36
Uniform Delay, d1	3.0			3.0	38.9	39.3
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.1			0.1	0.5	1.5
Delay (s)	3.1			3.0	39.4	40.8
Level of Service	A			A	D	D
Approach Delay (s)	3.1			3.0	40.0	
Approach LOS	A			A	D	

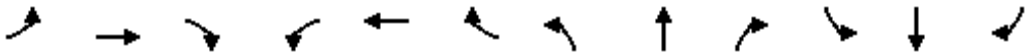
Intersection Summary			
HCM 2000 Control Delay	7.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	48.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	72	146	451	116	93	572
Future Volume (Veh/h)	72	146	451	116	93	572
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	72	146	451	116	93	572
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	981	284			567	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	981	284			567	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	68	80			91	
cM capacity (veh/h)	224	713			1001	

Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	72	146	301	266	93	286	286
Volume Left	72	0	0	0	93	0	0
Volume Right	0	146	0	116	0	0	0
cSH	224	713	1700	1700	1001	1700	1700
Volume to Capacity	0.32	0.20	0.18	0.16	0.09	0.17	0.17
Queue Length 95th (m)	10.6	6.1	0.0	0.0	2.5	0.0	0.0
Control Delay (s)	28.5	11.3	0.0	0.0	9.0	0.0	0.0
Lane LOS	D	B			A		
Approach Delay (s)	17.0		0.0		1.3		
Approach LOS	C						

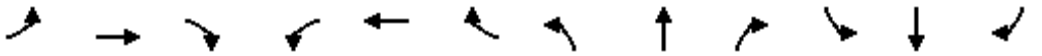
Intersection Summary			
Average Delay	3.1		
Intersection Capacity Utilization	35.3%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	161	1628	254	359	1971	150	235	439	153	149	253	127
v/c Ratio	0.74	0.84	0.37	0.86	0.79	0.18	0.66	0.76	0.40	0.56	0.48	0.37
Control Delay	52.5	44.7	15.3	59.6	33.8	10.3	47.1	64.3	10.0	43.8	56.7	10.7
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	52.5	44.7	15.3	59.6	33.8	10.3	47.1	64.3	10.0	43.8	56.7	10.7
Queue Length 50th (m)	28.6	157.7	22.5	83.9	170.3	8.4	54.5	65.2	0.0	32.7	36.1	0.0
Queue Length 95th (m)	50.9	178.6	45.8	#172.3	#247.4	26.0	73.4	80.7	19.0	47.4	47.3	17.7
Internal Link Dist (m)		388.6			329.5			288.1			373.4	
Turn Bay Length (m)	220.0		55.0	230.0		65.0	130.0		95.0	115.0		65.0
Base Capacity (vph)	265	1928	686	418	2509	828	361	834	490	298	834	470
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	0.61	0.84	0.37	0.86	0.79	0.18	0.65	0.53	0.31	0.50	0.30	0.27

Intersection Summary

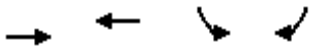
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	161	1628	254	359	1971	150	235	439	153	149	253	127
Future Volume (vph)	161	1628	254	359	1971	150	235	439	153	149	253	127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.9	6.9	4.0	6.9	6.9	4.0	7.0	7.0	4.0	7.0	7.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	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)	1770	5085	1583	1770	5085	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.08	1.00	1.00	0.07	1.00	1.00	0.47	1.00	1.00	0.31	1.00	1.00
Satd. Flow (perm)	140	5085	1583	130	5085	1583	881	3539	1583	569	3539	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	161	1628	254	359	1971	150	235	439	153	149	253	127
RTOR Reduction (vph)	0	0	86	0	0	48	0	0	128	0	0	108
Lane Group Flow (vph)	161	1628	168	359	1971	102	235	439	25	149	253	19
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	65.8	53.1	53.1	85.8	69.1	69.1	38.5	23.0	23.0	34.1	20.8	20.8
Effective Green, g (s)	65.8	53.1	53.1	85.8	69.1	69.1	38.5	23.0	23.0	34.1	20.8	20.8
Actuated g/C Ratio	0.47	0.38	0.38	0.61	0.49	0.49	0.28	0.16	0.16	0.24	0.15	0.15
Clearance Time (s)	4.0	6.9	6.9	4.0	6.9	6.9	4.0	7.0	7.0	4.0	7.0	7.0
Vehicle Extension (s)	2.0	5.5	5.5	2.0	8.0	8.0	2.0	3.0	3.0	2.0	3.0	3.0
Lane Grp Cap (vph)	213	1928	600	415	2509	781	340	581	260	252	525	235
v/s Ratio Prot	0.07	0.32		c0.18	0.39		c0.08	c0.12		0.06	0.07	
v/s Ratio Perm	0.29		0.11	c0.35		0.06	0.11		0.02	0.09		0.01
v/c Ratio	0.76	0.84	0.28	0.87	0.79	0.13	0.69	0.76	0.10	0.59	0.48	0.08
Uniform Delay, d1	31.0	39.7	30.2	42.4	29.3	19.2	42.5	55.8	49.7	44.0	54.7	51.4
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	12.7	4.7	1.2	16.4	2.4	0.3	4.8	5.6	0.2	2.5	0.7	0.1
Delay (s)	43.6	44.4	31.3	58.8	31.7	19.5	47.4	61.4	49.8	46.5	55.4	51.5
Level of Service	D	D	C	E	C	B	D	E	D	D	E	D
Approach Delay (s)		42.7			34.9			55.3			51.9	
Approach LOS		D			C			E			D	

Intersection Summary			
HCM 2000 Control Delay	42.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	21.9
Intersection Capacity Utilization	90.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

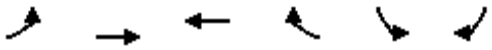


Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	1831	1326	859	592
v/c Ratio	0.84	0.61	0.87dr	0.95
Control Delay	27.6	21.5	22.1	51.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	27.6	21.5	22.1	51.5
Queue Length 50th (m)	107.2	67.1	59.3	107.2
Queue Length 95th (m)	128.4	82.4	79.1	#186.1
Internal Link Dist (m)	329.5	352.2	132.2	
Turn Bay Length (m)			85.0	65.0
Base Capacity (vph)	2179	2179	1392	632
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	0.84	0.61	0.62	0.94

Intersection Summary

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

dr Defacto Right Lane. Recode with 1 though lane as a right lane.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑		↰↰	↱
Traffic Volume (vph)	0	1831	1326	0	267	1184
Future Volume (vph)	0	1831	1326	0	267	1184
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.0	7.0		6.0	6.0
Lane Util. Factor		0.91	0.91		0.97	0.91
Frt		1.00	1.00		0.90	0.85
Flt Protected		1.00	1.00		0.98	1.00
Satd. Flow (prot)		5085	5085		3191	1441
Flt Permitted		1.00	1.00		0.98	1.00
Satd. Flow (perm)		5085	5085		3191	1441
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1831	1326	0	267	1184
RTOR Reduction (vph)	0	0	0	0	9	9
Lane Group Flow (vph)	0	1831	1326	0	850	583
Turn Type		NA	NA		Prot	Perm
Protected Phases		2	2		4	
Permitted Phases						4
Actuated Green, G (s)		38.6	38.6		38.4	38.4
Effective Green, g (s)		38.6	38.6		38.4	38.4
Actuated g/C Ratio		0.43	0.43		0.43	0.43
Clearance Time (s)		7.0	7.0		6.0	6.0
Vehicle Extension (s)		2.0	2.0		4.0	4.0
Lane Grp Cap (vph)		2180	2180		1361	614
v/s Ratio Prot		c0.36	0.26		0.27	
v/s Ratio Perm						c0.40
v/c Ratio		0.84	0.61		0.87dr	0.95
Uniform Delay, d1		22.9	19.9		20.2	24.9
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		4.1	1.3		1.0	24.7
Delay (s)		27.0	21.1		21.2	49.6
Level of Service		C	C		C	D
Approach Delay (s)		27.0	21.1		32.8	
Approach LOS		C	C		C	

Intersection Summary			
HCM 2000 Control Delay	27.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	85.3%	ICU Level of Service	E
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

c Critical Lane Group

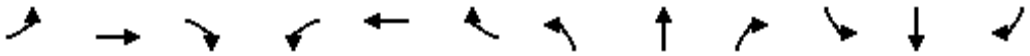
Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	1365	1421	184	136
v/c Ratio	0.37	0.38	0.40	0.60
Control Delay	5.6	5.7	33.4	40.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	5.6	5.7	33.4	40.5
Queue Length 50th (m)	31.1	32.8	14.5	21.6
Queue Length 95th (m)	49.2	51.8	23.2	40.6
Internal Link Dist (m)	352.2	106.9	57.5	
Turn Bay Length (m)			35.0	30.0
Base Capacity (vph)	3727	3727	1099	512
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	0.37	0.38	0.17	0.27

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1365	0	0	1421	47	273
Future Volume (vph)	1365	0	0	1421	47	273
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0			7.0	6.0	6.0
Lane Util. Factor	0.91			0.91	0.97	0.91
Frt	1.00			1.00	0.89	0.85
Flt Protected	1.00			1.00	0.99	1.00
Satd. Flow (prot)	5085			5085	3170	1441
Flt Permitted	1.00			1.00	0.99	1.00
Satd. Flow (perm)	5085			5085	3170	1441
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1365	0	0	1421	47	273
RTOR Reduction (vph)	0	0	0	0	29	29
Lane Group Flow (vph)	1365	0	0	1421	155	107
Turn Type	NA			NA	Prot	Perm
Protected Phases	2			2	4	
Permitted Phases						4
Actuated Green, G (s)	73.3			73.3	13.7	13.7
Effective Green, g (s)	73.3			73.3	13.7	13.7
Actuated g/C Ratio	0.73			0.73	0.14	0.14
Clearance Time (s)	7.0			7.0	6.0	6.0
Vehicle Extension (s)	4.0			4.0	4.0	4.0
Lane Grp Cap (vph)	3727			3727	434	197
v/s Ratio Prot	0.27			c0.28	0.05	
v/s Ratio Perm						c0.07
v/c Ratio	0.37			0.38	0.36	0.54
Uniform Delay, d1	4.9			4.9	39.1	40.2
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.1			0.1	0.7	3.8
Delay (s)	5.0			5.0	39.8	44.0
Level of Service	A			A	D	D
Approach Delay (s)	5.0			5.0	41.6	
Approach LOS	A			A	D	

Intersection Summary			
HCM 2000 Control Delay	8.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	85.3%	ICU Level of Service	E
Analysis Period (min)	15		

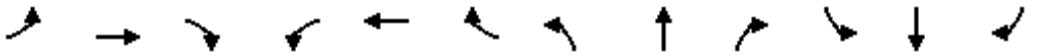
c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	137	1797	257	115	2231	212	226	388	159	245	293	133
v/c Ratio	0.74	0.69	0.29	0.61	0.86	0.25	0.66	0.74	0.43	0.83	0.55	0.38
Control Delay	51.6	28.5	11.6	35.0	35.1	12.2	48.0	65.5	10.8	62.1	58.7	10.9
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	51.6	28.5	11.6	35.0	35.1	12.2	48.0	65.5	10.8	62.1	58.7	10.9
Queue Length 50th (m)	22.3	139.3	19.4	12.6	199.8	16.9	52.0	57.7	0.0	57.0	42.3	0.0
Queue Length 95th (m)	46.4	185.5	44.7	35.7	#283.2	39.6	72.2	72.6	19.9	#83.3	55.4	18.3
Internal Link Dist (m)		388.6			329.5			288.1			373.4	
Turn Bay Length (m)	220.0		55.0	230.0		65.0	130.0		95.0	115.0		65.0
Base Capacity (vph)	255	2612	875	264	2594	855	349	834	494	301	834	474
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	0.54	0.69	0.29	0.44	0.86	0.25	0.65	0.47	0.32	0.81	0.35	0.28

Intersection Summary

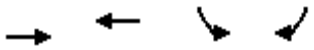
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	137	1797	257	115	2231	212	226	388	159	245	293	133
Future Volume (vph)	137	1797	257	115	2231	212	226	388	159	245	293	133
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.9	6.9	4.0	6.9	6.9	4.0	7.0	7.0	4.0	7.0	7.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	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)	1770	5085	1583	1770	5085	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.06	1.00	1.00	0.07	1.00	1.00	0.46	1.00	1.00	0.31	1.00	1.00
Satd. Flow (perm)	104	5085	1583	122	5085	1583	864	3539	1583	581	3539	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	137	1797	257	115	2231	212	226	388	159	245	293	133
RTOR Reduction (vph)	0	0	62	0	0	48	0	0	135	0	0	113
Lane Group Flow (vph)	137	1797	195	115	2231	164	226	388	24	245	293	20
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	82.2	71.9	71.9	81.2	71.4	71.4	36.2	20.8	20.8	36.6	21.0	21.0
Effective Green, g (s)	82.2	71.9	71.9	81.2	71.4	71.4	36.2	20.8	20.8	36.6	21.0	21.0
Actuated g/C Ratio	0.59	0.51	0.51	0.58	0.51	0.51	0.26	0.15	0.15	0.26	0.15	0.15
Clearance Time (s)	4.0	6.9	6.9	4.0	6.9	6.9	4.0	7.0	7.0	4.0	7.0	7.0
Vehicle Extension (s)	2.0	5.5	5.5	2.0	8.0	8.0	2.0	3.0	3.0	2.0	3.0	3.0
Lane Grp Cap (vph)	183	2611	812	186	2593	807	323	525	235	284	530	237
v/s Ratio Prot	c0.05	0.35		0.04	c0.44		0.08	0.11		c0.10	0.08	
v/s Ratio Perm	0.38		0.12	0.32		0.10	0.10		0.01	c0.13		0.01
v/c Ratio	0.75	0.69	0.24	0.62	0.86	0.20	0.70	0.74	0.10	0.86	0.55	0.08
Uniform Delay, d1	35.2	25.6	18.9	20.8	29.9	18.8	44.2	57.0	51.5	45.2	55.1	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	13.6	1.5	0.7	4.3	3.9	0.5	5.3	5.4	0.2	22.0	1.3	0.2
Delay (s)	48.8	27.1	19.6	25.1	33.9	19.3	49.5	62.4	51.7	67.2	56.4	51.4
Level of Service	D	C	B	C	C	B	D	E	D	E	E	D
Approach Delay (s)		27.6			32.3			56.4			59.3	
Approach LOS		C			C			E			E	

Intersection Summary			
HCM 2000 Control Delay	36.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	21.9
Intersection Capacity Utilization	93.2%	ICU Level of Service	F
Analysis Period (min)	15		

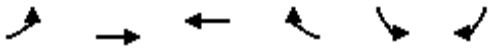
c Critical Lane Group



Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	2127	1626	734	471
v/c Ratio	0.90	0.69	0.59	0.84
Control Delay	29.8	21.6	23.2	38.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	29.8	21.6	23.2	38.3
Queue Length 50th (m)	133.5	87.1	49.9	78.0
Queue Length 95th (m)	#178.2	108.1	65.5	120.8
Internal Link Dist (m)	329.5	352.2	132.2	
Turn Bay Length (m)			85.0	65.0
Base Capacity (vph)	2371	2371	1392	627
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	0.90	0.69	0.53	0.75

Intersection Summary

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



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑		↰↰	↱
Traffic Volume (vph)	0	2127	1626	0	263	942
Future Volume (vph)	0	2127	1626	0	263	942
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.0	7.0		6.0	6.0
Lane Util. Factor		0.91	0.91		0.97	0.91
Frt		1.00	1.00		0.90	0.85
Flt Protected		1.00	1.00		0.98	1.00
Satd. Flow (prot)		5085	5085		3208	1441
Flt Permitted		1.00	1.00		0.98	1.00
Satd. Flow (perm)		5085	5085		3208	1441
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	2127	1626	0	263	942
RTOR Reduction (vph)	0	0	0	0	3	3
Lane Group Flow (vph)	0	2127	1626	0	731	468
Turn Type		NA	NA		Prot	Perm
Protected Phases		2	2		4	
Permitted Phases						4
Actuated Green, G (s)		42.0	42.0		35.0	35.0
Effective Green, g (s)		42.0	42.0		35.0	35.0
Actuated g/C Ratio		0.47	0.47		0.39	0.39
Clearance Time (s)		7.0	7.0		6.0	6.0
Vehicle Extension (s)		2.0	2.0		4.0	4.0
Lane Grp Cap (vph)		2373	2373		1247	560
v/s Ratio Prot		c0.42	0.32		0.23	
v/s Ratio Perm						c0.32
v/c Ratio		0.90	0.69		0.59	0.84
Uniform Delay, d1		22.0	18.8		21.8	24.9
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		5.8	1.6		0.8	10.9
Delay (s)		27.8	20.4		22.6	35.8
Level of Service		C	C		C	D
Approach Delay (s)		27.8	20.4		27.7	
Approach LOS		C	C		C	

Intersection Summary			
HCM 2000 Control Delay	25.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	81.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

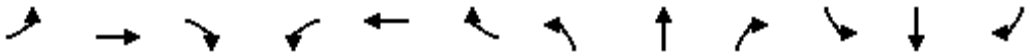
Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	1562	1605	179	144
v/c Ratio	0.43	0.44	0.37	0.62
Control Delay	6.6	6.7	34.7	44.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	6.6	6.7	34.7	44.7
Queue Length 50th (m)	40.5	42.0	15.1	26.2
Queue Length 95th (m)	62.4	64.6	23.5	45.3
Internal Link Dist (m)	352.2	106.9	57.5	
Turn Bay Length (m)			35.0	30.0
Base Capacity (vph)	3659	3659	1082	503
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	0.43	0.44	0.17	0.29

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1562	0	0	1605	34	289
Future Volume (vph)	1562	0	0	1605	34	289
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0			7.0	6.0	6.0
Lane Util. Factor	0.91			0.91	0.97	0.91
Frt	1.00			1.00	0.88	0.85
Flt Protected	1.00			1.00	0.99	1.00
Satd. Flow (prot)	5085			5085	3145	1441
Flt Permitted	1.00			1.00	0.99	1.00
Satd. Flow (perm)	5085			5085	3145	1441
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1562	0	0	1605	34	289
RTOR Reduction (vph)	0	0	0	0	17	17
Lane Group Flow (vph)	1562	0	0	1605	162	127
Turn Type	NA			NA	Prot	Perm
Protected Phases	2			2	4	
Permitted Phases						4
Actuated Green, G (s)	72.0			72.0	15.0	15.0
Effective Green, g (s)	72.0			72.0	15.0	15.0
Actuated g/C Ratio	0.72			0.72	0.15	0.15
Clearance Time (s)	7.0			7.0	6.0	6.0
Vehicle Extension (s)	4.0			4.0	4.0	4.0
Lane Grp Cap (vph)	3661			3661	471	216
v/s Ratio Prot	0.31			c0.32	0.05	
v/s Ratio Perm						c0.09
v/c Ratio	0.43			0.44	0.34	0.59
Uniform Delay, d1	5.7			5.7	38.1	39.6
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.1			0.1	0.6	4.8
Delay (s)	5.8			5.8	38.7	44.4
Level of Service	A			A	D	D
Approach Delay (s)	5.8			5.8	41.2	
Approach LOS	A			A	D	

Intersection Summary			
HCM 2000 Control Delay	9.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	81.1%	ICU Level of Service	D
Analysis Period (min)	15		

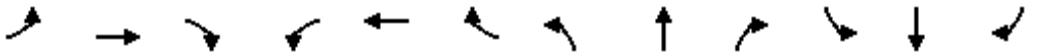
c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	115	1686	194	82	1442	184	200	250	156	274	283	128
v/c Ratio	0.46	0.60	0.21	0.41	0.51	0.20	0.65	0.62	0.49	0.84	0.66	0.42
Control Delay	15.3	22.3	8.5	15.7	21.1	6.1	51.3	65.3	13.1	67.1	66.0	12.9
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	15.3	22.3	8.5	15.7	21.1	6.1	51.3	65.3	13.1	67.1	66.0	12.9
Queue Length 50th (m)	11.4	113.8	12.0	7.9	92.0	6.7	47.4	37.0	0.0	68.1	42.3	0.0
Queue Length 95th (m)	20.9	148.1	28.8	15.7	122.3	21.5	68.4	50.4	20.6	#102.4	56.5	19.0
Internal Link Dist (m)		388.6			329.5			288.1			373.4	
Turn Bay Length (m)	220.0		55.0	230.0		65.0	130.0		95.0	115.0		65.0
Base Capacity (vph)	334	2832	926	294	2809	933	321	834	492	325	834	470
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	0.34	0.60	0.21	0.28	0.51	0.20	0.62	0.30	0.32	0.84	0.34	0.27

Intersection Summary

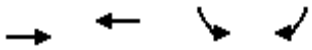
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	115	1686	194	82	1442	184	200	250	156	274	283	128
Future Volume (vph)	115	1686	194	82	1442	184	200	250	156	274	283	128
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.9	6.9	4.0	6.9	6.9	4.0	7.0	7.0	4.0	7.0	7.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	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)	1770	5085	1583	1770	5085	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.13	1.00	1.00	0.09	1.00	1.00	0.47	1.00	1.00	0.46	1.00	1.00
Satd. Flow (perm)	240	5085	1583	168	5085	1583	878	3539	1583	861	3539	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	115	1686	194	82	1442	184	200	250	156	274	283	128
RTOR Reduction (vph)	0	0	45	0	0	59	0	0	138	0	0	112
Lane Group Flow (vph)	115	1686	149	82	1442	125	200	250	18	274	283	16
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	86.6	77.9	77.9	85.4	77.3	77.3	31.0	16.1	16.1	33.2	17.2	17.2
Effective Green, g (s)	86.6	77.9	77.9	85.4	77.3	77.3	31.0	16.1	16.1	33.2	17.2	17.2
Actuated g/C Ratio	0.62	0.56	0.56	0.61	0.55	0.55	0.22	0.12	0.12	0.24	0.12	0.12
Clearance Time (s)	4.0	6.9	6.9	4.0	6.9	6.9	4.0	7.0	7.0	4.0	7.0	7.0
Vehicle Extension (s)	2.0	5.5	5.5	2.0	8.0	8.0	2.0	3.0	3.0	2.0	3.0	3.0
Lane Grp Cap (vph)	243	2829	880	195	2807	874	289	406	182	308	434	194
v/s Ratio Prot	c0.03	c0.33		0.02	0.28		0.07	0.07		c0.10	0.08	
v/s Ratio Perm	0.26		0.09	0.23		0.08	0.08		0.01	c0.11		0.01
v/c Ratio	0.47	0.60	0.17	0.42	0.51	0.14	0.69	0.62	0.10	0.89	0.65	0.08
Uniform Delay, d1	13.1	20.6	15.2	14.5	19.6	15.2	47.9	59.0	55.5	49.2	58.5	54.4
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	0.5	0.9	0.4	0.5	0.6	0.3	5.7	2.8	0.2	24.7	3.5	0.2
Delay (s)	13.6	21.5	15.6	15.0	20.2	15.6	53.6	61.8	55.7	73.9	62.0	54.6
Level of Service	B	C	B	B	C	B	D	E	E	E	E	D
Approach Delay (s)		20.5			19.5			57.5			65.4	
Approach LOS		C			B			E			E	

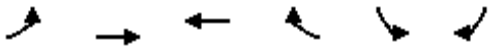
Intersection Summary			
HCM 2000 Control Delay	30.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	21.9
Intersection Capacity Utilization	80.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	1970	1152	512	278
v/c Ratio	0.65	0.38	0.59	0.70
Control Delay	14.8	11.1	29.1	35.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	14.8	11.1	29.1	35.4
Queue Length 50th (m)	79.3	36.8	39.8	45.6
Queue Length 95th (m)	125.5	60.2	47.1	65.1
Internal Link Dist (m)	329.5	352.2	132.2	
Turn Bay Length (m)			85.0	65.0
Base Capacity (vph)	3011	3011	1422	639
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	0.65	0.38	0.36	0.44

Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑		↰↰	↱
Traffic Volume (vph)	0	1970	1152	0	234	556
Future Volume (vph)	0	1970	1152	0	234	556
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.0	7.0		6.0	6.0
Lane Util. Factor		0.91	0.91		0.97	0.91
Frt		1.00	1.00		0.92	0.85
Flt Protected		1.00	1.00		0.98	1.00
Satd. Flow (prot)		5085	5085		3245	1441
Flt Permitted		1.00	1.00		0.98	1.00
Satd. Flow (perm)		5085	5085		3245	1441
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1970	1152	0	234	556
RTOR Reduction (vph)	0	0	0	0	20	20
Lane Group Flow (vph)	0	1970	1152	0	492	258
Turn Type		NA	NA		Prot	Perm
Protected Phases		2	2		4	
Permitted Phases						4
Actuated Green, G (s)		53.3	53.3		23.7	23.7
Effective Green, g (s)		53.3	53.3		23.7	23.7
Actuated g/C Ratio		0.59	0.59		0.26	0.26
Clearance Time (s)		7.0	7.0		6.0	6.0
Vehicle Extension (s)		2.0	2.0		4.0	4.0
Lane Grp Cap (vph)		3011	3011		854	379
v/s Ratio Prot		c0.39	0.23		0.15	
v/s Ratio Perm						c0.18
v/c Ratio		0.65	0.38		0.58	0.68
Uniform Delay, d1		12.2	9.7		28.8	29.8
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		1.1	0.4		1.1	5.4
Delay (s)		13.3	10.0		29.9	35.2
Level of Service		B	B		C	D
Approach Delay (s)		13.3	10.0		31.8	
Approach LOS		B	B		C	

Intersection Summary			
HCM 2000 Control Delay	16.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	61.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	1426	1406	218	155
v/c Ratio	0.39	0.39	0.43	0.63
Control Delay	6.4	6.4	34.6	42.9
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	6.4	6.4	34.6	42.9
Queue Length 50th (m)	35.8	35.2	18.1	26.7
Queue Length 95th (m)	56.0	55.0	27.2	46.5
Internal Link Dist (m)	352.2	106.9	57.5	
Turn Bay Length (m)			35.0	30.0
Base Capacity (vph)	3646	3646	1101	509
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	0.39	0.39	0.20	0.30

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1426	0	0	1406	63	310
Future Volume (vph)	1426	0	0	1406	63	310
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0			7.0	6.0	6.0
Lane Util. Factor	0.91			0.91	0.97	0.91
Frt	1.00			1.00	0.89	0.85
Flt Protected	1.00			1.00	0.99	1.00
Satd. Flow (prot)	5085			5085	3182	1441
Flt Permitted	1.00			1.00	0.99	1.00
Satd. Flow (perm)	5085			5085	3182	1441
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1426	0	0	1406	63	310
RTOR Reduction (vph)	0	0	0	0	25	25
Lane Group Flow (vph)	1426	0	0	1406	193	130
Turn Type	NA			NA	Prot	Perm
Protected Phases	2			2	4	
Permitted Phases						4
Actuated Green, G (s)	71.7			71.7	15.3	15.3
Effective Green, g (s)	71.7			71.7	15.3	15.3
Actuated g/C Ratio	0.72			0.72	0.15	0.15
Clearance Time (s)	7.0			7.0	6.0	6.0
Vehicle Extension (s)	4.0			4.0	4.0	4.0
Lane Grp Cap (vph)	3645			3645	486	220
v/s Ratio Prot	c0.28			0.28	0.06	
v/s Ratio Perm						c0.09
v/c Ratio	0.39			0.39	0.40	0.59
Uniform Delay, d1	5.6			5.5	38.2	39.4
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.1			0.1	0.7	4.9
Delay (s)	5.7			5.6	38.9	44.4
Level of Service	A			A	D	D
Approach Delay (s)	5.7			5.6	41.2	
Approach LOS	A			A	D	

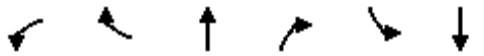
Intersection Summary			
HCM 2000 Control Delay	9.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	61.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	50	561	30	20	386
Future Volume (Veh/h)	0	50	561	30	20	386
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	50	561	30	20	386
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	809	296			591	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	809	296			591	
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	93			98	
cM capacity (veh/h)	312	701			981	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	50	374	217	20	193	193
Volume Left	0	0	0	20	0	0
Volume Right	50	0	30	0	0	0
cSH	701	1700	1700	981	1700	1700
Volume to Capacity	0.07	0.22	0.13	0.02	0.11	0.11
Queue Length 95th (m)	1.8	0.0	0.0	0.5	0.0	0.0
Control Delay (s)	10.5	0.0	0.0	8.7	0.0	0.0
Lane LOS	B			A		
Approach Delay (s)	10.5	0.0		0.4		
Approach LOS	B					

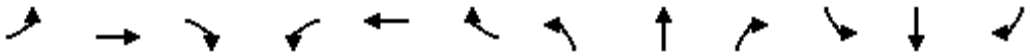
Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	26.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	591	0	0	386
Future Volume (Veh/h)	0	0	591	0	0	386
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	0	591	0	0	386
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	784	296			591	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	784	296			591	
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)	330	701			981	

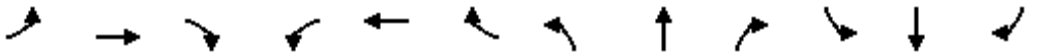
Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	0	0	394	197	0	193	193
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.00	0.00	0.23	0.12	0.00	0.11	0.11
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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	19.7%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	127	1282	200	283	1553	118	185	346	121	117	199	100
v/c Ratio	0.53	0.53	0.24	0.68	0.53	0.12	0.60	0.62	0.35	0.50	0.41	0.33
Control Delay	20.6	28.0	8.5	28.0	20.7	5.6	49.1	59.9	10.8	46.3	56.9	11.9
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	20.6	28.0	8.5	28.0	20.7	5.6	49.1	59.9	10.8	46.3	56.9	11.9
Queue Length 50th (m)	12.1	94.7	8.8	38.7	96.2	2.9	44.2	50.2	0.0	26.8	28.6	0.0
Queue Length 95th (m)	25.3	125.4	27.7	77.5	141.5	15.2	61.3	64.7	17.7	40.3	38.8	16.2
Internal Link Dist (m)		388.6			329.5			288.1			373.4	
Turn Bay Length (m)	220.0		55.0	230.0		65.0	130.0		95.0	115.0		65.0
Base Capacity (vph)	316	2413	826	418	2907	945	317	910	496	284	910	481
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	0.40	0.53	0.24	0.68	0.53	0.12	0.58	0.38	0.24	0.41	0.22	0.21

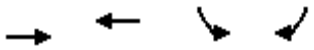
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	127	1282	200	283	1553	118	185	346	121	117	199	100
Future Volume (vph)	127	1282	200	283	1553	118	185	346	121	117	199	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	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)	1770	5085	1583	1770	5085	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.13	1.00	1.00	0.13	1.00	1.00	0.42	1.00	1.00	0.33	1.00	1.00
Satd. Flow (perm)	240	5085	1583	234	5085	1583	776	3539	1583	612	3539	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	127	1282	200	283	1553	118	185	346	121	117	199	100
RTOR Reduction (vph)	0	0	76	0	0	40	0	0	102	0	0	86
Lane Group Flow (vph)	127	1282	124	283	1553	78	185	346	19	117	199	14
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	73.7	63.6	63.6	91.3	77.2	77.2	33.7	19.0	19.0	27.9	16.1	16.1
Effective Green, g (s)	73.7	66.5	66.5	91.3	80.1	80.1	33.7	22.0	22.0	27.9	19.1	19.1
Actuated g/C Ratio	0.53	0.48	0.48	0.65	0.57	0.57	0.24	0.16	0.16	0.20	0.14	0.14
Clearance Time (s)	4.0	6.9	6.9	4.0	6.9	6.9	4.0	7.0	7.0	4.0	7.0	7.0
Vehicle Extension (s)	2.0	5.5	5.5	2.0	8.0	8.0	2.0	3.0	3.0	2.0	3.0	3.0
Lane Grp Cap (vph)	236	2415	751	412	2909	905	291	556	248	219	482	215
v/s Ratio Prot	0.04	0.25		c0.12	0.31		c0.07	c0.10		0.04	0.06	
v/s Ratio Perm	0.24		0.08	c0.33		0.05	0.09		0.01	0.06		0.01
v/c Ratio	0.54	0.53	0.17	0.69	0.53	0.09	0.64	0.62	0.08	0.53	0.41	0.06
Uniform Delay, d1	17.6	25.8	20.9	23.0	18.4	13.5	45.2	55.1	50.3	48.2	55.3	52.7
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	1.2	0.8	0.5	3.8	0.7	0.2	3.3	2.2	0.1	1.3	0.6	0.1
Delay (s)	18.8	26.6	21.4	26.7	19.1	13.7	48.6	57.3	50.5	49.5	55.9	52.8
Level of Service	B	C	C	C	B	B	D	E	D	D	E	D
Approach Delay (s)		25.4			19.9			53.5			53.3	
Approach LOS		C			B			D			D	

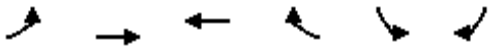
Intersection Summary			
HCM 2000 Control Delay	29.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	72.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	1442	1044	677	466
v/c Ratio	0.55	0.40	0.53	0.78
Control Delay	16.5	14.6	20.2	30.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	16.5	14.6	20.2	30.7
Queue Length 50th (m)	64.0	41.8	42.3	69.4
Queue Length 95th (m)	85.7	57.5	53.5	104.5
Internal Link Dist (m)	329.5	352.2	132.2	
Turn Bay Length (m)			85.0	65.0
Base Capacity (vph)	2640	2640	1481	683
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	0.55	0.40	0.46	0.68

Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑		↰↰	↱
Traffic Volume (vph)	0	1442	1044	0	210	933
Future Volume (vph)	0	1442	1044	0	210	933
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0
Lane Util. Factor		0.91	0.91		0.97	0.91
Frt		1.00	1.00		0.90	0.85
Flt Protected		1.00	1.00		0.98	1.00
Satd. Flow (prot)		5085	5085		3190	1441
Flt Permitted		1.00	1.00		0.98	1.00
Satd. Flow (perm)		5085	5085		3190	1441
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1442	1044	0	210	933
RTOR Reduction (vph)	0	0	0	0	30	30
Lane Group Flow (vph)	0	1442	1044	0	647	436
Turn Type		NA	NA		Prot	Perm
Protected Phases		2	2		4	
Permitted Phases						4
Actuated Green, G (s)		43.7	43.7		33.3	33.3
Effective Green, g (s)		46.7	46.7		35.3	35.3
Actuated g/C Ratio		0.52	0.52		0.39	0.39
Clearance Time (s)		7.0	7.0		6.0	6.0
Vehicle Extension (s)		2.0	2.0		4.0	4.0
Lane Grp Cap (vph)		2638	2638		1251	565
v/s Ratio Prot		c0.28	0.21		0.20	
v/s Ratio Perm						c0.30
v/c Ratio		0.55	0.40		0.52	0.77
Uniform Delay, d1		14.5	13.1		20.8	23.8
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.8	0.4		0.5	6.8
Delay (s)		15.4	13.6		21.3	30.6
Level of Service		B	B		C	C
Approach Delay (s)		15.4	13.6		25.1	
Approach LOS		B	B		C	

Intersection Summary			
HCM 2000 Control Delay	17.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	65.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	1075	1119	145	107
v/c Ratio	0.26	0.27	0.33	0.44
Control Delay	2.8	2.8	19.8	18.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	2.8	2.8	19.8	18.8
Queue Length 50th (m)	13.6	14.4	5.8	4.6
Queue Length 95th (m)	24.2	25.5	14.3	21.2
Internal Link Dist (m)	352.2	106.9	57.5	
Turn Bay Length (m)			35.0	30.0
Base Capacity (vph)	4083	4083	1194	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	0.26	0.27	0.12	0.19

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1075	0	0	1119	37	215
Future Volume (vph)	1075	0	0	1119	37	215
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	4.0
Lane Util. Factor	0.91			0.91	0.97	0.91
Frt	1.00			1.00	0.89	0.85
Flt Protected	1.00			1.00	0.99	1.00
Satd. Flow (prot)	5085			5085	3170	1441
Flt Permitted	1.00			1.00	0.99	1.00
Satd. Flow (perm)	5085			5085	3170	1441
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1075	0	0	1119	37	215
RTOR Reduction (vph)	0	0	0	0	75	75
Lane Group Flow (vph)	1075	0	0	1119	70	32
Turn Type	NA			NA	Prot	Perm
Protected Phases	2			2	4	
Permitted Phases						4
Actuated Green, G (s)	77.3			77.3	9.7	9.7
Effective Green, g (s)	80.3			80.3	11.7	11.7
Actuated g/C Ratio	0.80			0.80	0.12	0.12
Clearance Time (s)	7.0			7.0	6.0	6.0
Vehicle Extension (s)	4.0			4.0	4.0	4.0
Lane Grp Cap (vph)	4083			4083	370	168
v/s Ratio Prot	0.21			c0.22	0.02	
v/s Ratio Perm						c0.02
v/c Ratio	0.26			0.27	0.19	0.19
Uniform Delay, d1	2.5			2.5	39.9	39.9
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.0			0.0	0.3	0.8
Delay (s)	2.5			2.5	40.2	40.6
Level of Service	A			A	D	D
Approach Delay (s)	2.5			2.5	40.4	
Approach LOS	A			A	D	

Intersection Summary			
HCM 2000 Control Delay	6.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.26		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	65.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	50	561	25	25	532
Future Volume (Veh/h)	0	50	561	25	25	532
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	50	561	25	25	532
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	890	293			586	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	890	293			586	
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	93			97	
cM capacity (veh/h)	275	703			985	

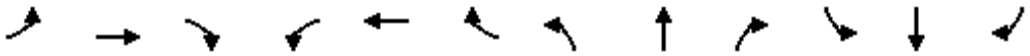
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	50	374	212	25	266	266
Volume Left	0	0	0	25	0	0
Volume Right	50	0	25	0	0	0
cSH	703	1700	1700	985	1700	1700
Volume to Capacity	0.07	0.22	0.12	0.03	0.16	0.16
Queue Length 95th (m)	1.8	0.0	0.0	0.6	0.0	0.0
Control Delay (s)	10.5	0.0	0.0	8.8	0.0	0.0
Lane LOS	B			A		
Approach Delay (s)	10.5	0.0		0.4		
Approach LOS	B					

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	26.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	7	5	581	64	51	481
Future Volume (Veh/h)	7	5	581	64	51	481
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	7	5	581	64	51	481
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	956	322			645	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	956	322			645	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	97	99			95	
cM capacity (veh/h)	242	673			936	

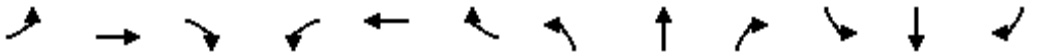
Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	7	5	387	258	51	240	240
Volume Left	7	0	0	0	51	0	0
Volume Right	0	5	0	64	0	0	0
cSH	242	673	1700	1700	936	1700	1700
Volume to Capacity	0.03	0.01	0.23	0.15	0.05	0.14	0.14
Queue Length 95th (m)	0.7	0.2	0.0	0.0	1.4	0.0	0.0
Control Delay (s)	20.3	10.4	0.0	0.0	9.1	0.0	0.0
Lane LOS	C	B			A		
Approach Delay (s)	16.2		0.0		0.9		
Approach LOS	C						

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	34.8%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	125	1416	202	91	1757	202	178	318	125	197	232	107
v/c Ratio	0.62	0.48	0.21	0.36	0.60	0.21	0.55	0.60	0.37	0.70	0.42	0.32
Control Delay	29.4	18.6	6.4	13.3	21.6	7.3	45.1	60.2	11.2	52.4	55.5	11.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.4	18.6	6.4	13.3	21.6	7.3	45.1	60.2	11.2	52.4	55.5	11.3
Queue Length 50th (m)	12.5	84.5	8.7	8.9	118.0	10.0	40.5	46.2	0.0	45.4	32.4	0.0
Queue Length 95th (m)	33.0	113.8	24.7	17.5	158.9	27.1	59.3	60.5	17.9	65.6	45.1	16.9
Internal Link Dist (m)		388.6			329.5			288.1			373.4	
Turn Bay Length (m)	220.0		55.0	230.0		65.0	130.0		95.0	115.0		65.0
Base Capacity (vph)	292	2949	973	351	2916	960	350	910	499	299	910	486
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	0.43	0.48	0.21	0.26	0.60	0.21	0.51	0.35	0.25	0.66	0.25	0.22

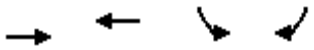
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	125	1416	202	91	1757	202	178	318	125	197	232	107
Future Volume (vph)	125	1416	202	91	1757	202	178	318	125	197	232	107
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	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)	1770	5085	1583	1770	5085	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.08	1.00	1.00	0.13	1.00	1.00	0.47	1.00	1.00	0.29	1.00	1.00
Satd. Flow (perm)	141	5085	1583	250	5085	1583	884	3539	1583	542	3539	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	125	1416	202	91	1757	202	178	318	125	197	232	107
RTOR Reduction (vph)	0	0	55	0	0	52	0	0	106	0	0	90
Lane Group Flow (vph)	125	1416	147	91	1757	150	178	318	19	197	232	17
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	87.7	78.4	78.4	85.7	77.4	77.4	32.7	17.9	17.9	34.1	18.6	18.6
Effective Green, g (s)	87.7	81.3	81.3	85.7	80.3	80.3	32.7	20.9	20.9	34.1	21.6	21.6
Actuated g/C Ratio	0.63	0.58	0.58	0.61	0.57	0.57	0.23	0.15	0.15	0.24	0.15	0.15
Clearance Time (s)	3.0	6.9	6.9	3.0	6.9	6.9	3.0	7.0	7.0	3.0	7.0	7.0
Vehicle Extension (s)	2.0	5.5	5.5	2.0	8.0	8.0	2.0	3.0	3.0	2.0	3.0	3.0
Lane Grp Cap (vph)	196	2952	919	243	2916	907	300	528	236	267	546	244
v/s Ratio Prot	c0.04	0.28		0.02	0.35		0.06	0.09		c0.08	0.07	
v/s Ratio Perm	c0.36		0.09	0.21		0.09	0.08		0.01	c0.10		0.01
v/c Ratio	0.64	0.48	0.16	0.37	0.60	0.16	0.59	0.60	0.08	0.74	0.42	0.07
Uniform Delay, d1	17.7	17.1	13.6	12.8	19.5	14.1	45.8	55.7	51.3	45.4	53.6	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	4.9	0.6	0.4	0.4	0.9	0.4	2.1	1.9	0.1	8.8	0.5	0.1
Delay (s)	22.6	17.6	13.9	13.2	20.3	14.4	47.9	57.6	51.4	54.2	54.1	50.7
Level of Service	C	B	B	B	C	B	D	E	D	D	D	D
Approach Delay (s)		17.5			19.4			53.6			53.5	
Approach LOS		B			B			D			D	

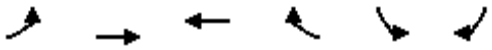
Intersection Summary			
HCM 2000 Control Delay	26.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	73.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	1679	1305	584	376
v/c Ratio	0.64	0.49	0.54	0.76
Control Delay	18.2	16.0	24.5	35.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	18.2	16.0	24.5	35.1
Queue Length 50th (m)	77.1	54.1	42.2	63.0
Queue Length 95th (m)	113.1	80.7	49.4	86.3
Internal Link Dist (m)	329.5	352.2	132.2	
Turn Bay Length (m)			85.0	65.0
Base Capacity (vph)	2644	2644	1399	633
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	0.64	0.49	0.42	0.59

Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑		↰↰	↱
Traffic Volume (vph)	0	1679	1305	0	207	753
Future Volume (vph)	0	1679	1305	0	207	753
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.0	7.0		6.0	6.0
Lane Util. Factor		0.91	0.91		0.97	0.91
Frt		1.00	1.00		0.90	0.85
Flt Protected		1.00	1.00		0.98	1.00
Satd. Flow (prot)		5085	5085		3207	1441
Flt Permitted		1.00	1.00		0.98	1.00
Satd. Flow (perm)		5085	5085		3207	1441
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1679	1305	0	207	753
RTOR Reduction (vph)	0	0	0	0	11	11
Lane Group Flow (vph)	0	1679	1305	0	573	365
Turn Type		NA	NA		Prot	Perm
Protected Phases		2	2		4	
Permitted Phases						4
Actuated Green, G (s)		46.8	46.8		30.2	30.2
Effective Green, g (s)		46.8	46.8		30.2	30.2
Actuated g/C Ratio		0.52	0.52		0.34	0.34
Clearance Time (s)		7.0	7.0		6.0	6.0
Vehicle Extension (s)		2.0	2.0		4.0	4.0
Lane Grp Cap (vph)		2644	2644		1076	483
v/s Ratio Prot		c0.33	0.26		0.18	
v/s Ratio Perm						c0.25
v/c Ratio		0.64	0.49		0.53	0.76
Uniform Delay, d1		15.5	13.9		24.2	26.6
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		1.2	0.7		0.7	7.1
Delay (s)		16.7	14.6		24.8	33.7
Level of Service		B	B		C	C
Approach Delay (s)		16.7	14.6		28.3	
Approach LOS		B	B		C	

Intersection Summary			
HCM 2000 Control Delay	18.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	67.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	1232	1276	152	114
v/c Ratio	0.31	0.32	0.33	0.48
Control Delay	3.4	3.5	25.4	27.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	3.4	3.5	25.4	27.6
Queue Length 50th (m)	19.1	20.0	9.1	11.8
Queue Length 95th (m)	32.5	34.0	17.5	29.0
Internal Link Dist (m)	352.2	106.9	57.5	
Turn Bay Length (m)			35.0	30.0
Base Capacity (vph)	4008	4008	1176	555
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	0.31	0.32	0.13	0.21

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1232	0	0	1276	38	228
Future Volume (vph)	1232	0	0	1276	38	228
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	4.0
Lane Util. Factor	0.91			0.91	0.97	0.91
Frt	1.00			1.00	0.89	0.85
Flt Protected	1.00			1.00	0.99	1.00
Satd. Flow (prot)	5085			5085	3168	1441
Flt Permitted	1.00			1.00	0.99	1.00
Satd. Flow (perm)	5085			5085	3168	1441
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1232	0	0	1276	38	228
RTOR Reduction (vph)	0	0	0	0	49	49
Lane Group Flow (vph)	1232	0	0	1276	103	65
Turn Type	NA			NA	Prot	Perm
Protected Phases	2			2	4	
Permitted Phases						4
Actuated Green, G (s)	75.8			75.8	11.2	11.2
Effective Green, g (s)	78.8			78.8	13.2	13.2
Actuated g/C Ratio	0.79			0.79	0.13	0.13
Clearance Time (s)	7.0			7.0	6.0	6.0
Vehicle Extension (s)	4.0			4.0	4.0	4.0
Lane Grp Cap (vph)	4006			4006	418	190
v/s Ratio Prot	0.24			c0.25	0.03	
v/s Ratio Perm						c0.04
v/c Ratio	0.31			0.32	0.25	0.34
Uniform Delay, d1	3.0			3.0	38.9	39.4
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.1			0.1	0.4	1.5
Delay (s)	3.0			3.1	39.4	40.9
Level of Service	A			A	D	D
Approach Delay (s)	3.0			3.1	40.0	
Approach LOS	A			A	D	

Intersection Summary			
HCM 2000 Control Delay	6.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	67.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	50	554	25	25	569
Future Volume (Veh/h)	0	50	554	25	25	569
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	50	554	25	25	569
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	901	290			579	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	901	290			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	93			97	
cM capacity (veh/h)	271	707			991	

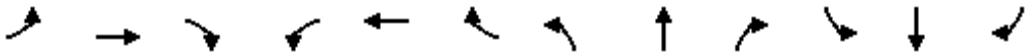
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	50	369	210	25	284	284
Volume Left	0	0	0	25	0	0
Volume Right	50	0	25	0	0	0
cSH	707	1700	1700	991	1700	1700
Volume to Capacity	0.07	0.22	0.12	0.03	0.17	0.17
Queue Length 95th (m)	1.8	0.0	0.0	0.6	0.0	0.0
Control Delay (s)	10.5	0.0	0.0	8.7	0.0	0.0
Lane LOS	B			A		
Approach Delay (s)	10.5	0.0		0.4		
Approach LOS	B					

Intersection Summary				
Average Delay	0.6			
Intersection Capacity Utilization	26.1%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	72	146	433	116	93	476
Future Volume (Veh/h)	72	146	433	116	93	476
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	72	146	433	116	93	476
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	915	274			549	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	915	274			549	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	71	80			91	
cM capacity (veh/h)	247	723			1017	

Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	72	146	289	260	93	238	238
Volume Left	72	0	0	0	93	0	0
Volume Right	0	146	0	116	0	0	0
cSH	247	723	1700	1700	1017	1700	1700
Volume to Capacity	0.29	0.20	0.17	0.15	0.09	0.14	0.14
Queue Length 95th (m)	9.4	6.0	0.0	0.0	2.4	0.0	0.0
Control Delay (s)	25.4	11.2	0.0	0.0	8.9	0.0	0.0
Lane LOS	D	B			A		
Approach Delay (s)	15.9		0.0		1.5		
Approach LOS	C						

Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	34.8%	ICU Level of Service	A
Analysis Period (min)	15		

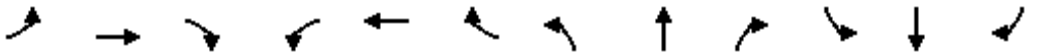


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	122	1328	153	64	1136	208	158	219	123	281	245	134
v/c Ratio	0.37	0.42	0.15	0.23	0.37	0.20	0.54	0.51	0.41	0.93	0.46	0.38
Control Delay	10.9	14.5	3.4	9.5	14.9	2.1	48.7	61.4	12.9	84.1	57.7	11.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.9	14.5	3.4	9.5	14.9	2.1	48.7	61.4	12.9	84.1	57.7	11.5
Queue Length 50th (m)	10.5	68.7	3.1	5.3	56.7	0.0	37.8	31.9	0.0	~74.0	35.7	0.0
Queue Length 95th (m)	19.3	86.9	13.1	11.3	74.9	11.1	57.2	44.5	18.7	#106.8	48.9	19.3
Internal Link Dist (m)		388.6			329.5			288.1			373.4	
Turn Bay Length (m)	220.0		55.0	230.0		65.0	130.0		95.0	115.0		65.0
Base Capacity (vph)	370	3169	1033	352	3064	1036	307	733	425	301	758	444
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	0.33	0.42	0.15	0.18	0.37	0.20	0.51	0.30	0.29	0.93	0.32	0.30

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

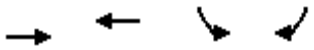
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	122	1328	153	64	1136	208	158	219	123	281	245	134
Future Volume (vph)	122	1328	153	64	1136	208	158	219	123	281	245	134
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	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)	1770	5085	1583	1770	5085	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.20	1.00	1.00	0.16	1.00	1.00	0.55	1.00	1.00	0.35	1.00	1.00
Satd. Flow (perm)	364	5085	1583	303	5085	1583	1015	3539	1583	649	3539	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	122	1328	153	64	1136	208	158	219	123	281	245	134
RTOR Reduction (vph)	0	0	47	0	0	83	0	0	108	0	0	114
Lane Group Flow (vph)	122	1328	106	64	1136	125	158	219	15	281	245	20
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	91.8	83.8	83.8	87.2	81.5	81.5	26.7	14.1	14.1	33.6	18.0	18.0
Effective Green, g (s)	91.8	86.7	86.7	87.2	84.4	84.4	26.7	17.1	17.1	33.6	21.0	21.0
Actuated g/C Ratio	0.66	0.62	0.62	0.62	0.60	0.60	0.19	0.12	0.12	0.24	0.15	0.15
Clearance Time (s)	3.0	6.9	6.9	3.0	6.9	6.9	3.0	7.0	7.0	3.0	7.0	7.0
Vehicle Extension (s)	2.0	5.5	5.5	2.0	8.0	8.0	2.0	3.0	3.0	2.0	3.0	3.0
Lane Grp Cap (vph)	319	3149	980	248	3065	954	261	432	193	287	530	237
v/s Ratio Prot	c0.02	c0.26		0.01	0.22		0.05	0.06		c0.12	0.07	
v/s Ratio Perm	0.23		0.07	0.15		0.08	0.06		0.01	c0.12		0.01
v/c Ratio	0.38	0.42	0.11	0.26	0.37	0.13	0.61	0.51	0.08	0.98	0.46	0.08
Uniform Delay, d1	10.0	13.7	10.9	11.1	14.2	12.0	50.3	57.5	54.5	49.8	54.3	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	0.3	0.4	0.2	0.2	0.3	0.3	2.7	0.9	0.2	46.6	0.6	0.2
Delay (s)	10.3	14.1	11.1	11.3	14.5	12.3	53.1	58.4	54.6	96.5	55.0	51.4
Level of Service	B	B	B	B	B	B	D	E	D	F	D	D
Approach Delay (s)		13.6			14.1			55.8			71.9	
Approach LOS		B			B			E			E	

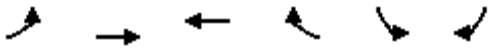
Intersection Summary			
HCM 2000 Control Delay	28.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	68.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	1594	949	414	229
v/c Ratio	0.46	0.27	0.53	0.61
Control Delay	7.7	6.4	27.0	27.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	7.7	6.4	27.0	27.7
Queue Length 50th (m)	41.2	20.7	28.6	28.9
Queue Length 95th (m)	70.1	36.8	37.4	48.3
Internal Link Dist (m)	329.5	352.2	132.2	
Turn Bay Length (m)			85.0	65.0
Base Capacity (vph)	3488	3488	1513	693
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	0.46	0.27	0.27	0.33

Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑		↰↰	↱
Traffic Volume (vph)	0	1594	949	0	184	459
Future Volume (vph)	0	1594	949	0	184	459
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0
Lane Util. Factor		0.91	0.91		0.97	0.91
Frt		1.00	1.00		0.92	0.85
Flt Protected		1.00	1.00		0.98	1.00
Satd. Flow (prot)		5085	5085		3241	1441
Flt Permitted		1.00	1.00		0.98	1.00
Satd. Flow (perm)		5085	5085		3241	1441
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1594	949	0	184	459
RTOR Reduction (vph)	0	0	0	0	53	53
Lane Group Flow (vph)	0	1594	949	0	361	176
Turn Type		NA	NA		Prot	Perm
Protected Phases		2	2		4	
Permitted Phases						4
Actuated Green, G (s)		58.7	58.7		18.3	18.3
Effective Green, g (s)		61.7	61.7		20.3	20.3
Actuated g/C Ratio		0.69	0.69		0.23	0.23
Clearance Time (s)		7.0	7.0		6.0	6.0
Vehicle Extension (s)		2.0	2.0		4.0	4.0
Lane Grp Cap (vph)		3486	3486		731	325
v/s Ratio Prot		c0.31	0.19		0.11	
v/s Ratio Perm						c0.12
v/c Ratio		0.46	0.27		0.49	0.54
Uniform Delay, d1		6.5	5.5		30.4	30.8
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.4	0.2		0.7	2.3
Delay (s)		6.9	5.7		31.1	33.1
Level of Service		A	A		C	C
Approach Delay (s)		6.9	5.7		31.8	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	11.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	47.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	1144	1128	192	122
v/c Ratio	0.29	0.28	0.40	0.49
Control Delay	3.3	3.3	26.3	24.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	3.3	3.3	26.3	24.5
Queue Length 50th (m)	17.1	16.7	11.7	10.3
Queue Length 95th (m)	29.5	29.0	20.9	28.2
Internal Link Dist (m)	352.2	106.9	57.5	
Turn Bay Length (m)			35.0	30.0
Base Capacity (vph)	4010	4010	1202	564
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	0.29	0.28	0.16	0.22

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1144	0	0	1128	70	244
Future Volume (vph)	1144	0	0	1128	70	244
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	4.0
Lane Util. Factor	0.91			0.91	0.97	0.91
Frt	1.00			1.00	0.90	0.85
Flt Protected	1.00			1.00	0.98	1.00
Satd. Flow (prot)	5085			5085	3211	1441
Flt Permitted	1.00			1.00	0.98	1.00
Satd. Flow (perm)	5085			5085	3211	1441
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1144	0	0	1128	70	244
RTOR Reduction (vph)	0	0	0	0	63	63
Lane Group Flow (vph)	1144	0	0	1128	129	59
Turn Type	NA			NA	Prot	Perm
Protected Phases	2			2	4	
Permitted Phases						4
Actuated Green, G (s)	75.9			75.9	11.1	11.1
Effective Green, g (s)	78.9			78.9	13.1	13.1
Actuated g/C Ratio	0.79			0.79	0.13	0.13
Clearance Time (s)	7.0			7.0	6.0	6.0
Vehicle Extension (s)	4.0			4.0	4.0	4.0
Lane Grp Cap (vph)	4012			4012	420	188
v/s Ratio Prot	c0.22			0.22	0.04	
v/s Ratio Perm						c0.04
v/c Ratio	0.29			0.28	0.31	0.32
Uniform Delay, d1	2.9			2.9	39.3	39.4
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.1			0.1	0.6	1.3
Delay (s)	2.9			2.9	39.9	40.7
Level of Service	A			A	D	D
Approach Delay (s)	2.9			2.9	40.2	
Approach LOS	A			A	D	

Intersection Summary			
HCM 2000 Control Delay	7.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	47.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	111	640	92	73	418
Future Volume (Veh/h)	0	111	640	92	73	418
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	111	640	92	73	418
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1041	366			732	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1041	366			732	
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	82			92	
cM capacity (veh/h)	207	631			868	

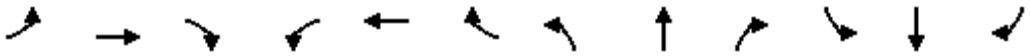
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	111	427	305	73	209	209
Volume Left	0	0	0	73	0	0
Volume Right	111	0	92	0	0	0
cSH	631	1700	1700	868	1700	1700
Volume to Capacity	0.18	0.25	0.18	0.08	0.12	0.12
Queue Length 95th (m)	5.1	0.0	0.0	2.2	0.0	0.0
Control Delay (s)	11.9	0.0	0.0	9.5	0.0	0.0
Lane LOS	B			A		
Approach Delay (s)	11.9	0.0		1.4		
Approach LOS	B					

Intersection Summary				
Average Delay	1.5			
Intersection Capacity Utilization	34.2%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	56	53	679	16	13	405
Future Volume (Veh/h)	56	53	679	16	13	405
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	56	53	679	16	13	405
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	916	348			695	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	916	348			695	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	79	92			99	
cM capacity (veh/h)	268	649			897	

Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	56	53	453	242	13	202	202
Volume Left	56	0	0	0	13	0	0
Volume Right	0	53	0	16	0	0	0
cSH	268	649	1700	1700	897	1700	1700
Volume to Capacity	0.21	0.08	0.27	0.14	0.01	0.12	0.12
Queue Length 95th (m)	6.2	2.1	0.0	0.0	0.4	0.0	0.0
Control Delay (s)	22.0	11.0	0.0	0.0	9.1	0.0	0.0
Lane LOS	C	B			A		
Approach Delay (s)	16.6		0.0		0.3		
Approach LOS	C						

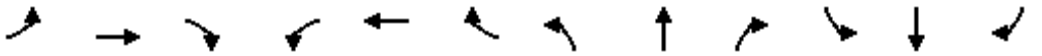
Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	29.3%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	154	1338	209	295	1620	166	193	375	126	172	225	130
v/c Ratio	0.64	0.62	0.28	0.70	0.60	0.19	0.58	0.64	0.34	0.66	0.39	0.36
Control Delay	32.6	33.3	10.0	37.3	25.3	8.3	45.4	59.1	10.2	50.0	53.7	10.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.6	33.3	10.0	37.3	25.3	8.3	45.4	59.1	10.2	50.0	53.7	10.2
Queue Length 50th (m)	17.2	111.9	11.4	53.8	117.2	8.0	44.0	54.3	0.0	38.7	31.2	0.0
Queue Length 95th (m)	39.9	132.4	30.2	#102.0	160.5	24.7	62.4	68.7	17.6	55.8	42.5	17.9
Internal Link Dist (m)		388.6			329.5			288.1			373.4	
Turn Bay Length (m)	220.0		55.0	230.0		65.0	130.0		95.0	115.0		65.0
Base Capacity (vph)	293	2170	758	421	2700	891	344	910	500	282	910	503
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	0.53	0.62	0.28	0.70	0.60	0.19	0.56	0.41	0.25	0.61	0.25	0.26

Intersection Summary

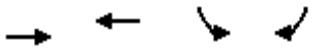
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	154	1338	209	295	1620	166	193	375	126	172	225	130
Future Volume (vph)	154	1338	209	295	1620	166	193	375	126	172	225	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	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)	1770	5085	1583	1770	5085	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.11	1.00	1.00	0.10	1.00	1.00	0.46	1.00	1.00	0.27	1.00	1.00
Satd. Flow (perm)	202	5085	1583	182	5085	1583	866	3539	1583	497	3539	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	154	1338	209	295	1620	166	193	375	126	172	225	130
RTOR Reduction (vph)	0	0	82	0	0	51	0	0	105	0	0	109
Lane Group Flow (vph)	154	1338	127	295	1620	115	193	375	21	172	225	21
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	69.0	56.9	56.9	87.6	71.5	71.5	35.1	20.3	20.3	33.9	19.7	19.7
Effective Green, g (s)	69.0	59.8	59.8	87.6	74.4	74.4	35.1	23.3	23.3	33.9	22.7	22.7
Actuated g/C Ratio	0.49	0.43	0.43	0.63	0.53	0.53	0.25	0.17	0.17	0.24	0.16	0.16
Clearance Time (s)	4.0	6.9	6.9	4.0	6.9	6.9	4.0	7.0	7.0	4.0	7.0	7.0
Vehicle Extension (s)	2.0	5.5	5.5	2.0	8.0	8.0	2.0	3.0	3.0	2.0	3.0	3.0
Lane Grp Cap (vph)	235	2172	676	416	2702	841	312	588	263	249	573	256
v/s Ratio Prot	0.06	0.26		c0.14	0.32		0.07	c0.11		c0.07	0.06	
v/s Ratio Perm	0.27		0.08	c0.31		0.07	0.09		0.01	0.10		0.01
v/c Ratio	0.66	0.62	0.19	0.71	0.60	0.14	0.62	0.64	0.08	0.69	0.39	0.08
Uniform Delay, d1	21.3	31.2	25.0	31.7	22.6	16.6	44.2	54.4	49.3	44.9	52.5	49.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.9	1.3	0.6	4.5	0.9	0.3	2.6	2.3	0.1	6.5	0.4	0.1
Delay (s)	26.2	32.5	25.6	36.2	23.5	16.9	46.8	56.7	49.4	51.5	52.9	49.9
Level of Service	C	C	C	D	C	B	D	E	D	D	D	D
Approach Delay (s)		31.1			24.8			52.6			51.7	
Approach LOS		C			C			D			D	

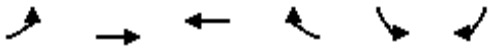
Intersection Summary			
HCM 2000 Control Delay	33.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	75.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	1539	1118	714	493
v/c Ratio	0.60	0.44	0.54	0.81
Control Delay	18.0	15.7	20.1	32.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	18.0	15.7	20.1	32.3
Queue Length 50th (m)	74.3	48.2	44.0	74.0
Queue Length 95th (m)	93.6	62.3	58.0	116.4
Internal Link Dist (m)	329.5	352.2	132.2	
Turn Bay Length (m)			85.0	65.0
Base Capacity (vph)	2562	2562	1474	678
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	0.60	0.44	0.48	0.73

Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑		↰↰	↱
Traffic Volume (vph)	0	1539	1118	0	220	987
Future Volume (vph)	0	1539	1118	0	220	987
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0
Lane Util. Factor		0.91	0.91		0.97	0.91
Frt		1.00	1.00		0.90	0.85
Flt Protected		1.00	1.00		0.98	1.00
Satd. Flow (prot)		5085	5085		3190	1441
Flt Permitted		1.00	1.00		0.98	1.00
Satd. Flow (perm)		5085	5085		3190	1441
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1539	1118	0	220	987
RTOR Reduction (vph)	0	0	0	0	24	24
Lane Group Flow (vph)	0	1539	1118	0	690	469
Turn Type		NA	NA		Prot	Perm
Protected Phases		2	2		4	
Permitted Phases						4
Actuated Green, G (s)		42.4	42.4		34.6	34.6
Effective Green, g (s)		45.4	45.4		36.6	36.6
Actuated g/C Ratio		0.50	0.50		0.41	0.41
Clearance Time (s)		7.0	7.0		6.0	6.0
Vehicle Extension (s)		2.0	2.0		4.0	4.0
Lane Grp Cap (vph)		2565	2565		1297	586
v/s Ratio Prot		c0.30	0.22		0.22	
v/s Ratio Perm						c0.33
v/c Ratio		0.60	0.44		0.53	0.80
Uniform Delay, d1		15.8	14.2		20.2	23.5
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		1.0	0.5		0.5	8.1
Delay (s)		16.9	14.7		20.8	31.6
Level of Service		B	B		C	C
Approach Delay (s)		16.9	14.7		25.2	
Approach LOS		B	B		C	

Intersection Summary			
HCM 2000 Control Delay	18.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	69.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	1139	1182	164	112
v/c Ratio	0.28	0.29	0.36	0.46
Control Delay	3.1	3.1	24.1	23.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	3.1	3.1	24.1	23.0
Queue Length 50th (m)	15.8	16.7	8.9	8.3
Queue Length 95th (m)	27.8	29.1	17.6	25.2
Internal Link Dist (m)	352.2	106.9	57.5	
Turn Bay Length (m)			35.0	30.0
Base Capacity (vph)	4046	4046	1195	564
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	0.28	0.29	0.14	0.20

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1139	0	0	1182	52	224
Future Volume (vph)	1139	0	0	1182	52	224
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	4.0
Lane Util. Factor	0.91			0.91	0.97	0.91
Frt	1.00			1.00	0.90	0.85
Flt Protected	1.00			1.00	0.98	1.00
Satd. Flow (prot)	5085			5085	3193	1441
Flt Permitted	1.00			1.00	0.98	1.00
Satd. Flow (perm)	5085			5085	3193	1441
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1139	0	0	1182	52	224
RTOR Reduction (vph)	0	0	0	0	63	63
Lane Group Flow (vph)	1139	0	0	1182	101	49
Turn Type	NA			NA	Prot	Perm
Protected Phases	2			2	4	
Permitted Phases						4
Actuated Green, G (s)	76.6			76.6	10.4	10.4
Effective Green, g (s)	79.6			79.6	12.4	12.4
Actuated g/C Ratio	0.80			0.80	0.12	0.12
Clearance Time (s)	7.0			7.0	6.0	6.0
Vehicle Extension (s)	4.0			4.0	4.0	4.0
Lane Grp Cap (vph)	4047			4047	395	178
v/s Ratio Prot	0.22			c0.23	0.03	
v/s Ratio Perm						c0.03
v/c Ratio	0.28			0.29	0.26	0.27
Uniform Delay, d1	2.7			2.7	39.6	39.7
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.1			0.1	0.5	1.1
Delay (s)	2.7			2.8	40.1	40.9
Level of Service	A			A	D	D
Approach Delay (s)	2.7			2.8	40.4	
Approach LOS	A			A	D	

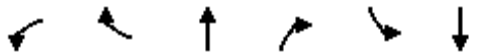
Intersection Summary			
HCM 2000 Control Delay	6.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	69.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	54	585	38	35	544
Future Volume (Veh/h)	0	54	585	38	35	544
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	54	585	38	35	544
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	946	312			623	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	946	312			623	
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	92			96	
cM capacity (veh/h)	250	684			954	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	54	390	233	35	272	272
Volume Left	0	0	0	35	0	0
Volume Right	54	0	38	0	0	0
cSH	684	1700	1700	954	1700	1700
Volume to Capacity	0.08	0.23	0.14	0.04	0.16	0.16
Queue Length 95th (m)	2.0	0.0	0.0	0.9	0.0	0.0
Control Delay (s)	10.7	0.0	0.0	8.9	0.0	0.0
Lane LOS	B			A		
Approach Delay (s)	10.7	0.0		0.5		
Approach LOS	B					

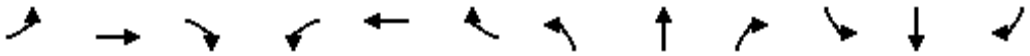
Intersection Summary				
Average Delay	0.7			
Intersection Capacity Utilization	27.4%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	4	4	619	52	40	504
Future Volume (Veh/h)	4	4	619	52	40	504
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	4	4	619	52	40	504
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	977	336			671	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	977	336			671	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	98	99			96	
cM capacity (veh/h)	237	660			915	

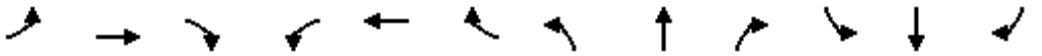
Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	4	4	413	258	40	252	252
Volume Left	4	0	0	0	40	0	0
Volume Right	0	4	0	52	0	0	0
cSH	237	660	1700	1700	915	1700	1700
Volume to Capacity	0.02	0.01	0.24	0.15	0.04	0.15	0.15
Queue Length 95th (m)	0.4	0.1	0.0	0.0	1.1	0.0	0.0
Control Delay (s)	20.4	10.5	0.0	0.0	9.1	0.0	0.0
Lane LOS	C	B			A		
Approach Delay (s)	15.5		0.0		0.7		
Approach LOS	C						

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	35.4%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	129	1477	211	95	1834	212	186	330	131	206	242	111
v/c Ratio	0.68	0.51	0.22	0.40	0.64	0.22	0.57	0.61	0.37	0.72	0.44	0.32
Control Delay	38.5	19.6	6.9	14.5	22.9	7.9	45.4	60.1	10.8	53.9	55.5	11.0
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	38.5	19.6	6.9	14.5	22.9	7.9	45.4	60.1	10.8	53.9	55.5	11.0
Queue Length 50th (m)	15.3	91.2	10.0	9.5	127.8	11.5	42.3	47.8	0.0	47.4	34.0	0.0
Queue Length 95th (m)	38.8	122.3	26.8	18.1	171.6	29.8	61.6	62.5	18.1	68.0	46.7	17.1
Internal Link Dist (m)		388.6			329.5			288.1			373.4	
Turn Bay Length (m)	220.0		55.0	230.0		65.0	130.0		95.0	115.0		65.0
Base Capacity (vph)	280	2916	964	336	2884	951	348	910	504	299	910	489
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	0.46	0.51	0.22	0.28	0.64	0.22	0.53	0.36	0.26	0.69	0.27	0.23

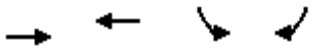
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	129	1477	211	95	1834	212	186	330	131	206	242	111
Future Volume (vph)	129	1477	211	95	1834	212	186	330	131	206	242	111
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	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)	1770	5085	1583	1770	5085	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.07	1.00	1.00	0.12	1.00	1.00	0.46	1.00	1.00	0.28	1.00	1.00
Satd. Flow (perm)	121	5085	1583	226	5085	1583	853	3539	1583	527	3539	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	129	1477	211	95	1834	212	186	330	131	206	242	111
RTOR Reduction (vph)	0	0	56	0	0	53	0	0	111	0	0	94
Lane Group Flow (vph)	129	1477	155	95	1834	159	186	330	20	206	242	17
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	86.9	77.4	77.4	85.1	76.5	76.5	33.5	18.4	18.4	34.7	19.0	19.0
Effective Green, g (s)	86.9	80.3	80.3	85.1	79.4	79.4	33.5	21.4	21.4	34.7	22.0	22.0
Actuated g/C Ratio	0.62	0.57	0.57	0.61	0.57	0.57	0.24	0.15	0.15	0.25	0.16	0.16
Clearance Time (s)	3.0	6.9	6.9	3.0	6.9	6.9	3.0	7.0	7.0	3.0	7.0	7.0
Vehicle Extension (s)	2.0	5.5	5.5	2.0	8.0	8.0	2.0	3.0	3.0	2.0	3.0	3.0
Lane Grp Cap (vph)	187	2916	907	232	2883	897	303	540	241	270	556	248
v/s Ratio Prot	c0.05	0.29		0.03	0.36		0.07	0.09		c0.09	0.07	
v/s Ratio Perm	c0.38		0.10	0.22		0.10	0.08		0.01	c0.10		0.01
v/c Ratio	0.69	0.51	0.17	0.41	0.64	0.18	0.61	0.61	0.08	0.76	0.44	0.07
Uniform Delay, d1	22.6	17.9	14.1	13.6	20.5	14.6	45.3	55.4	50.9	45.2	53.4	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	8.2	0.6	0.4	0.4	1.0	0.4	2.6	2.1	0.1	10.9	0.5	0.1
Delay (s)	30.8	18.6	14.5	14.0	21.6	15.0	47.9	57.5	51.0	56.1	53.9	50.4
Level of Service	C	B	B	B	C	B	D	E	D	E	D	D
Approach Delay (s)		19.0			20.6			53.4			54.0	
Approach LOS		B			C			D			D	

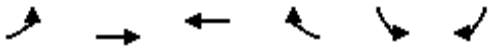
Intersection Summary			
HCM 2000 Control Delay	27.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	76.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	1751	1363	609	393
v/c Ratio	0.68	0.53	0.54	0.77
Control Delay	19.5	16.9	24.2	35.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	19.5	16.9	24.2	35.5
Queue Length 50th (m)	84.5	58.9	43.8	66.2
Queue Length 95th (m)	120.3	85.2	52.0	92.1
Internal Link Dist (m)	329.5	352.2	132.2	
Turn Bay Length (m)			85.0	65.0
Base Capacity (vph)	2586	2586	1397	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	0.68	0.53	0.44	0.62

Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑		↰↰	↱
Traffic Volume (vph)	0	1751	1363	0	216	786
Future Volume (vph)	0	1751	1363	0	216	786
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.0	7.0		6.0	6.0
Lane Util. Factor		0.91	0.91		0.97	0.91
Frt		1.00	1.00		0.90	0.85
Flt Protected		1.00	1.00		0.98	1.00
Satd. Flow (prot)		5085	5085		3207	1441
Flt Permitted		1.00	1.00		0.98	1.00
Satd. Flow (perm)		5085	5085		3207	1441
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1751	1363	0	216	786
RTOR Reduction (vph)	0	0	0	0	8	8
Lane Group Flow (vph)	0	1751	1363	0	601	385
Turn Type		NA	NA		Prot	Perm
Protected Phases		2	2		4	
Permitted Phases						4
Actuated Green, G (s)		45.8	45.8		31.2	31.2
Effective Green, g (s)		45.8	45.8		31.2	31.2
Actuated g/C Ratio		0.51	0.51		0.35	0.35
Clearance Time (s)		7.0	7.0		6.0	6.0
Vehicle Extension (s)		2.0	2.0		4.0	4.0
Lane Grp Cap (vph)		2587	2587		1111	499
v/s Ratio Prot		c0.34	0.27		0.19	
v/s Ratio Perm						c0.27
v/c Ratio		0.68	0.53		0.54	0.77
Uniform Delay, d1		16.6	14.8		23.6	26.2
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		1.4	0.8		0.7	7.6
Delay (s)		18.0	15.6		24.3	33.9
Level of Service		B	B		C	C
Approach Delay (s)		18.0	15.6		28.1	
Approach LOS		B	B		C	

Intersection Summary			
HCM 2000 Control Delay	19.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	69.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	1285	1331	161	119
v/c Ratio	0.32	0.33	0.33	0.49
Control Delay	3.7	3.8	27.5	30.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	3.7	3.8	27.5	30.0
Queue Length 50th (m)	21.5	22.4	10.6	14.2
Queue Length 95th (m)	36.0	37.7	18.9	31.8
Internal Link Dist (m)	352.2	106.9	57.5	
Turn Bay Length (m)			35.0	30.0
Base Capacity (vph)	3974	3974	1173	550
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	0.32	0.33	0.14	0.22

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1285	0	0	1331	42	238
Future Volume (vph)	1285	0	0	1331	42	238
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	4.0
Lane Util. Factor	0.91			0.91	0.97	0.91
Frt	1.00			1.00	0.89	0.85
Flt Protected	1.00			1.00	0.99	1.00
Satd. Flow (prot)	5085			5085	3172	1441
Flt Permitted	1.00			1.00	0.99	1.00
Satd. Flow (perm)	5085			5085	3172	1441
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1285	0	0	1331	42	238
RTOR Reduction (vph)	0	0	0	0	43	43
Lane Group Flow (vph)	1285	0	0	1331	118	76
Turn Type	NA			NA	Prot	Perm
Protected Phases	2			2	4	
Permitted Phases						4
Actuated Green, G (s)	75.2			75.2	11.8	11.8
Effective Green, g (s)	78.2			78.2	13.8	13.8
Actuated g/C Ratio	0.78			0.78	0.14	0.14
Clearance Time (s)	7.0			7.0	6.0	6.0
Vehicle Extension (s)	4.0			4.0	4.0	4.0
Lane Grp Cap (vph)	3976			3976	437	198
v/s Ratio Prot	0.25			c0.26	0.04	
v/s Ratio Perm						c0.05
v/c Ratio	0.32			0.33	0.27	0.38
Uniform Delay, d1	3.2			3.2	38.6	39.2
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.1			0.1	0.5	1.7
Delay (s)	3.2			3.3	39.0	40.9
Level of Service	A			A	D	D
Approach Delay (s)	3.2			3.3	39.8	
Approach LOS	A			A	D	

Intersection Summary			
HCM 2000 Control Delay	6.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	69.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	128	494	48	44	574
Future Volume (Veh/h)	0	128	494	48	44	574
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	128	494	48	44	574
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	893	271			542	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	893	271			542	
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	82			96	
cM capacity (veh/h)	269	727			1023	

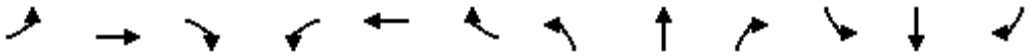
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	128	329	213	44	287	287
Volume Left	0	0	0	44	0	0
Volume Right	128	0	48	0	0	0
cSH	727	1700	1700	1023	1700	1700
Volume to Capacity	0.18	0.19	0.13	0.04	0.17	0.17
Queue Length 95th (m)	5.1	0.0	0.0	1.1	0.0	0.0
Control Delay (s)	11.0	0.0	0.0	8.7	0.0	0.0
Lane LOS	B			A		
Approach Delay (s)	11.0	0.0		0.6		
Approach LOS	B					

Intersection Summary				
Average Delay	1.4			
Intersection Capacity Utilization	29.8%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	72	68	474	92	75	499
Future Volume (Veh/h)	72	68	474	92	75	499
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	72	68	474	92	75	499
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	920	283			566	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	920	283			566	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	71	90			93	
cM capacity (veh/h)	250	714			1002	

Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	72	68	316	250	75	250	250
Volume Left	72	0	0	0	75	0	0
Volume Right	0	68	0	92	0	0	0
cSH	250	714	1700	1700	1002	1700	1700
Volume to Capacity	0.29	0.10	0.19	0.15	0.07	0.15	0.15
Queue Length 95th (m)	9.2	2.5	0.0	0.0	1.9	0.0	0.0
Control Delay (s)	25.1	10.6	0.0	0.0	8.9	0.0	0.0
Lane LOS	D	B			A		
Approach Delay (s)	18.1		0.0		1.2		
Approach LOS	C						

Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	34.2%	ICU Level of Service	A
Analysis Period (min)	15		

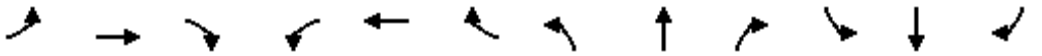


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	126	1386	160	67	1186	214	164	226	128	291	255	139
v/c Ratio	0.41	0.44	0.16	0.26	0.39	0.21	0.57	0.51	0.42	0.96	0.47	0.39
Control Delay	11.7	15.1	3.8	10.1	15.5	2.1	49.1	61.2	12.7	88.6	57.4	11.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.7	15.1	3.8	10.1	15.5	2.1	49.1	61.2	12.7	88.6	57.4	11.2
Queue Length 50th (m)	11.0	73.6	3.9	5.6	60.5	0.0	39.2	32.9	0.0	~80.3	37.1	0.0
Queue Length 95th (m)	20.1	92.6	14.4	11.8	79.9	11.4	58.9	45.6	18.9	#113.6	50.5	19.3
Internal Link Dist (m)		388.6			329.5			288.1			373.4	
Turn Bay Length (m)	220.0		55.0	230.0		65.0	130.0		95.0	115.0		65.0
Base Capacity (vph)	353	3146	1026	337	3037	1031	306	733	429	303	758	448
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	0.36	0.44	0.16	0.20	0.39	0.21	0.54	0.31	0.30	0.96	0.34	0.31

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

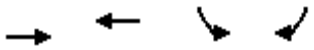
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	126	1386	160	67	1186	214	164	226	128	291	255	139
Future Volume (vph)	126	1386	160	67	1186	214	164	226	128	291	255	139
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	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)	1770	5085	1583	1770	5085	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.18	1.00	1.00	0.15	1.00	1.00	0.53	1.00	1.00	0.34	1.00	1.00
Satd. Flow (perm)	338	5085	1583	278	5085	1583	987	3539	1583	636	3539	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	126	1386	160	67	1186	214	164	226	128	291	255	139
RTOR Reduction (vph)	0	0	48	0	0	86	0	0	112	0	0	118
Lane Group Flow (vph)	126	1386	112	67	1186	128	164	226	16	291	255	21
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	91.3	83.1	83.1	86.5	80.7	80.7	27.2	14.4	14.4	34.2	18.4	18.4
Effective Green, g (s)	91.3	86.0	86.0	86.5	83.6	83.6	27.2	17.4	17.4	34.2	21.4	21.4
Actuated g/C Ratio	0.65	0.61	0.61	0.62	0.60	0.60	0.19	0.12	0.12	0.24	0.15	0.15
Clearance Time (s)	3.0	6.9	6.9	3.0	6.9	6.9	3.0	7.0	7.0	3.0	7.0	7.0
Vehicle Extension (s)	2.0	5.5	5.5	2.0	8.0	8.0	2.0	3.0	3.0	2.0	3.0	3.0
Lane Grp Cap (vph)	304	3123	972	233	3036	945	263	439	196	291	540	241
v/s Ratio Prot	c0.02	c0.27		0.01	0.23		0.06	0.06		c0.12	0.07	
v/s Ratio Perm	0.25		0.07	0.17		0.08	0.06		0.01	c0.12		0.01
v/c Ratio	0.41	0.44	0.12	0.29	0.39	0.14	0.62	0.51	0.08	1.00	0.47	0.09
Uniform Delay, d1	10.5	14.3	11.2	11.6	14.8	12.4	50.1	57.4	54.2	49.9	54.1	50.9
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	0.3	0.5	0.2	0.2	0.4	0.3	3.3	1.0	0.2	52.8	0.7	0.2
Delay (s)	10.8	14.8	11.5	11.8	15.2	12.6	53.4	58.4	54.4	102.6	54.8	51.1
Level of Service	B	B	B	B	B	B	D	E	D	F	D	D
Approach Delay (s)		14.2			14.7			55.8			74.4	
Approach LOS		B			B			E			E	

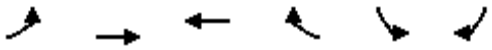
Intersection Summary			
HCM 2000 Control Delay	28.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	70.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	1661	989	431	239
v/c Ratio	0.48	0.29	0.53	0.62
Control Delay	8.4	6.9	27.2	29.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	8.4	6.9	27.2	29.0
Queue Length 50th (m)	46.0	22.8	30.4	31.9
Queue Length 95th (m)	77.2	40.1	38.9	51.6
Internal Link Dist (m)	329.5	352.2	132.2	
Turn Bay Length (m)			85.0	65.0
Base Capacity (vph)	3434	3434	1509	689
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	0.48	0.29	0.29	0.35

Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑		↰↰	↱
Traffic Volume (vph)	0	1661	989	0	192	478
Future Volume (vph)	0	1661	989	0	192	478
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0
Lane Util. Factor		0.91	0.91		0.97	0.91
Frt		1.00	1.00		0.92	0.85
Flt Protected		1.00	1.00		0.98	1.00
Satd. Flow (prot)		5085	5085		3241	1441
Flt Permitted		1.00	1.00		0.98	1.00
Satd. Flow (perm)		5085	5085		3241	1441
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1661	989	0	192	478
RTOR Reduction (vph)	0	0	0	0	46	46
Lane Group Flow (vph)	0	1661	989	0	385	193
Turn Type		NA	NA		Prot	Perm
Protected Phases		2	2		4	
Permitted Phases						4
Actuated Green, G (s)		57.8	57.8		19.2	19.2
Effective Green, g (s)		60.8	60.8		21.2	21.2
Actuated g/C Ratio		0.68	0.68		0.24	0.24
Clearance Time (s)		7.0	7.0		6.0	6.0
Vehicle Extension (s)		2.0	2.0		4.0	4.0
Lane Grp Cap (vph)		3435	3435		763	339
v/s Ratio Prot		c0.33	0.19		0.12	
v/s Ratio Perm						c0.13
v/c Ratio		0.48	0.29		0.50	0.57
Uniform Delay, d1		7.0	5.9		29.8	30.4
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.5	0.2		0.7	2.7
Delay (s)		7.5	6.1		30.6	33.0
Level of Service		A	A		C	C
Approach Delay (s)		7.5	6.1		31.4	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	11.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	49.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	1194	1177	200	127
v/c Ratio	0.30	0.30	0.40	0.50
Control Delay	3.6	3.6	28.3	27.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	3.6	3.6	28.3	27.5
Queue Length 50th (m)	19.0	18.7	13.2	13.2
Queue Length 95th (m)	32.7	32.1	22.5	31.3
Internal Link Dist (m)	352.2	106.9	57.5	
Turn Bay Length (m)			35.0	30.0
Base Capacity (vph)	3976	3976	1196	559
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	0.30	0.30	0.17	0.23

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1194	0	0	1177	73	254
Future Volume (vph)	1194	0	0	1177	73	254
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	4.0
Lane Util. Factor	0.91			0.91	0.97	0.91
Frt	1.00			1.00	0.90	0.85
Flt Protected	1.00			1.00	0.98	1.00
Satd. Flow (prot)	5085			5085	3211	1441
Flt Permitted	1.00			1.00	0.98	1.00
Satd. Flow (perm)	5085			5085	3211	1441
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1194	0	0	1177	73	254
RTOR Reduction (vph)	0	0	0	0	54	54
Lane Group Flow (vph)	1194	0	0	1177	146	73
Turn Type	NA			NA	Prot	Perm
Protected Phases	2			2	4	
Permitted Phases						4
Actuated Green, G (s)	75.2			75.2	11.8	11.8
Effective Green, g (s)	78.2			78.2	13.8	13.8
Actuated g/C Ratio	0.78			0.78	0.14	0.14
Clearance Time (s)	7.0			7.0	6.0	6.0
Vehicle Extension (s)	4.0			4.0	4.0	4.0
Lane Grp Cap (vph)	3976			3976	443	198
v/s Ratio Prot	c0.23			0.23	0.05	
v/s Ratio Perm						c0.05
v/c Ratio	0.30			0.30	0.33	0.37
Uniform Delay, d1	3.1			3.1	38.9	39.1
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.1			0.1	0.6	1.6
Delay (s)	3.2			3.1	39.5	40.7
Level of Service	A			A	D	D
Approach Delay (s)	3.2			3.1	40.0	
Approach LOS	A			A	D	

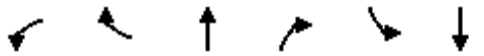
Intersection Summary			
HCM 2000 Control Delay	7.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	49.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	111	701	92	73	468
Future Volume (Veh/h)	0	111	701	92	73	468
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	111	701	92	73	468
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1127	396			793	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1127	396			793	
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	82			91	
cM capacity (veh/h)	181	603			824	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	111	467	326	73	234	234
Volume Left	0	0	0	73	0	0
Volume Right	111	0	92	0	0	0
cSH	603	1700	1700	824	1700	1700
Volume to Capacity	0.18	0.27	0.19	0.09	0.14	0.14
Queue Length 95th (m)	5.4	0.0	0.0	2.3	0.0	0.0
Control Delay (s)	12.3	0.0	0.0	9.8	0.0	0.0
Lane LOS	B			A		
Approach Delay (s)	12.3	0.0		1.3		
Approach LOS	B					

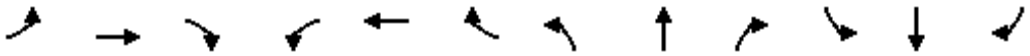
Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	35.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	56	53	740	16	13	455
Future Volume (Veh/h)	56	53	740	16	13	455
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	56	53	740	16	13	455
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1002	378			756	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1002	378			756	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	76	91			98	
cM capacity (veh/h)	236	620			851	

Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	56	53	493	263	13	228	228
Volume Left	56	0	0	0	13	0	0
Volume Right	0	53	0	16	0	0	0
cSH	236	620	1700	1700	851	1700	1700
Volume to Capacity	0.24	0.09	0.29	0.15	0.02	0.13	0.13
Queue Length 95th (m)	7.2	2.2	0.0	0.0	0.4	0.0	0.0
Control Delay (s)	25.0	11.4	0.0	0.0	9.3	0.0	0.0
Lane LOS	C	B			A		
Approach Delay (s)	18.4		0.0		0.3		
Approach LOS	C						

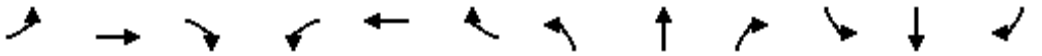
Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	31.0%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	167	1472	230	325	1782	178	213	411	139	185	245	141
v/c Ratio	0.75	0.72	0.32	0.78	0.69	0.21	0.63	0.66	0.35	0.71	0.40	0.36
Control Delay	52.8	38.0	11.9	51.3	29.2	9.9	46.0	58.6	9.6	51.6	52.7	9.7
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	52.8	38.0	11.9	51.3	29.2	9.9	46.0	58.6	9.6	51.6	52.7	9.7
Queue Length 50th (m)	30.0	131.6	15.8	73.1	142.3	10.5	48.1	59.4	0.0	41.0	33.6	0.0
Queue Length 95th (m)	52.9	150.0	36.1	#144.5	191.0	29.2	67.6	74.1	17.9	58.6	45.2	18.1
Internal Link Dist (m)		388.6			329.5			288.1			373.4	
Turn Bay Length (m)	220.0		55.0	230.0		65.0	130.0		95.0	115.0		65.0
Base Capacity (vph)	268	2034	719	418	2599	861	347	910	510	279	910	511
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	0.62	0.72	0.32	0.78	0.69	0.21	0.61	0.45	0.27	0.66	0.27	0.28

Intersection Summary

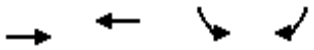
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	167	1472	230	325	1782	178	213	411	139	185	245	141
Future Volume (vph)	167	1472	230	325	1782	178	213	411	139	185	245	141
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	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)	1770	5085	1583	1770	5085	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.08	1.00	1.00	0.07	1.00	1.00	0.45	1.00	1.00	0.24	1.00	1.00
Satd. Flow (perm)	142	5085	1583	130	5085	1583	832	3539	1583	449	3539	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	167	1472	230	325	1782	178	213	411	139	185	245	141
RTOR Reduction (vph)	0	0	86	0	0	52	0	0	114	0	0	117
Lane Group Flow (vph)	167	1472	144	325	1782	126	213	411	25	185	245	24
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	66.2	53.1	53.1	85.8	68.7	68.7	36.9	21.7	21.7	35.7	21.1	21.1
Effective Green, g (s)	66.2	56.0	56.0	85.8	71.6	71.6	36.9	24.7	24.7	35.7	24.1	24.1
Actuated g/C Ratio	0.47	0.40	0.40	0.61	0.51	0.51	0.26	0.18	0.18	0.26	0.17	0.17
Clearance Time (s)	4.0	6.9	6.9	4.0	6.9	6.9	4.0	7.0	7.0	4.0	7.0	7.0
Vehicle Extension (s)	2.0	5.5	5.5	2.0	8.0	8.0	2.0	3.0	3.0	2.0	3.0	3.0
Lane Grp Cap (vph)	219	2034	633	415	2600	809	321	624	279	252	609	272
v/s Ratio Prot	0.07	0.29		c0.16	0.35		0.07	c0.12		c0.08	0.07	
v/s Ratio Perm	0.29		0.09	c0.32		0.08	0.10		0.02	0.11		0.02
v/c Ratio	0.76	0.72	0.23	0.78	0.69	0.16	0.66	0.66	0.09	0.73	0.40	0.09
Uniform Delay, d1	30.7	35.5	27.7	39.9	25.7	18.2	43.3	53.7	48.2	43.9	51.5	48.7
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	13.2	2.3	0.8	8.6	1.5	0.4	4.0	2.5	0.1	9.2	0.4	0.1
Delay (s)	43.9	37.7	28.5	48.5	27.2	18.5	47.3	56.2	48.4	53.1	52.0	48.9
Level of Service	D	D	C	D	C	B	D	E	D	D	D	D
Approach Delay (s)		37.2			29.6			52.3			51.6	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	37.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	81.4%	ICU Level of Service	D
Analysis Period (min)	15		

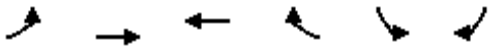
c Critical Lane Group



Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	1689	1227	785	542
v/c Ratio	0.69	0.50	0.57	0.85
Control Delay	20.5	17.3	20.1	36.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	20.5	17.3	20.1	36.2
Queue Length 50th (m)	88.6	56.5	49.2	85.9
Queue Length 95th (m)	106.7	69.8	66.2	#152.5
Internal Link Dist (m)	329.5	352.2	132.2	
Turn Bay Length (m)			85.0	65.0
Base Capacity (vph)	2448	2448	1468	671
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	0.69	0.50	0.53	0.81

Intersection Summary

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



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑		↰↰	↱
Traffic Volume (vph)	0	1689	1227	0	242	1085
Future Volume (vph)	0	1689	1227	0	242	1085
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0
Lane Util. Factor		0.91	0.91		0.97	0.91
Frt		1.00	1.00		0.90	0.85
Flt Protected		1.00	1.00		0.98	1.00
Satd. Flow (prot)		5085	5085		3190	1441
Flt Permitted		1.00	1.00		0.98	1.00
Satd. Flow (perm)		5085	5085		3190	1441
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1689	1227	0	242	1085
RTOR Reduction (vph)	0	0	0	0	16	16
Lane Group Flow (vph)	0	1689	1227	0	769	526
Turn Type		NA	NA		Prot	Perm
Protected Phases		2	2		4	
Permitted Phases						4
Actuated Green, G (s)		40.3	40.3		36.7	36.7
Effective Green, g (s)		43.3	43.3		38.7	38.7
Actuated g/C Ratio		0.48	0.48		0.43	0.43
Clearance Time (s)		7.0	7.0		6.0	6.0
Vehicle Extension (s)		2.0	2.0		4.0	4.0
Lane Grp Cap (vph)		2446	2446		1371	619
v/s Ratio Prot		c0.33	0.24		0.24	
v/s Ratio Perm						c0.37
v/c Ratio		0.69	0.50		0.56	0.85
Uniform Delay, d1		18.1	16.0		19.3	23.0
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		1.6	0.7		0.6	11.0
Delay (s)		19.8	16.7		19.9	34.0
Level of Service		B	B		B	C
Approach Delay (s)		19.8	16.7		25.7	
Approach LOS		B	B		C	

Intersection Summary			
HCM 2000 Control Delay	20.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	75.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	1251	1298	180	123
v/c Ratio	0.31	0.33	0.37	0.50
Control Delay	3.7	3.7	28.2	29.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	3.7	3.7	28.2	29.2
Queue Length 50th (m)	20.6	21.6	12.0	14.0
Queue Length 95th (m)	34.8	36.6	20.8	31.8
Internal Link Dist (m)	352.2	106.9	57.5	
Turn Bay Length (m)			35.0	30.0
Base Capacity (vph)	3974	3974	1184	553
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	0.31	0.33	0.15	0.22

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1251	0	0	1298	56	247
Future Volume (vph)	1251	0	0	1298	56	247
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	4.0
Lane Util. Factor	0.91			0.91	0.97	0.91
Frt	1.00			1.00	0.90	0.85
Flt Protected	1.00			1.00	0.98	1.00
Satd. Flow (prot)	5085			5085	3191	1441
Flt Permitted	1.00			1.00	0.98	1.00
Satd. Flow (perm)	5085			5085	3191	1441
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1251	0	0	1298	56	247
RTOR Reduction (vph)	0	0	0	0	47	47
Lane Group Flow (vph)	1251	0	0	1298	133	76
Turn Type	NA			NA	Prot	Perm
Protected Phases	2			2	4	
Permitted Phases						4
Actuated Green, G (s)	75.2			75.2	11.8	11.8
Effective Green, g (s)	78.2			78.2	13.8	13.8
Actuated g/C Ratio	0.78			0.78	0.14	0.14
Clearance Time (s)	7.0			7.0	6.0	6.0
Vehicle Extension (s)	4.0			4.0	4.0	4.0
Lane Grp Cap (vph)	3976			3976	440	198
v/s Ratio Prot	0.25			c0.26	0.04	
v/s Ratio Perm						c0.05
v/c Ratio	0.31			0.33	0.30	0.38
Uniform Delay, d1	3.2			3.2	38.8	39.2
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.1			0.1	0.5	1.7
Delay (s)	3.2			3.3	39.3	40.9
Level of Service	A			A	D	D
Approach Delay (s)	3.2			3.3	39.9	
Approach LOS	A			A	D	

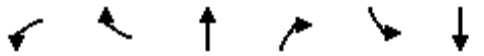
Intersection Summary			
HCM 2000 Control Delay	7.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	75.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	54	645	38	35	601
Future Volume (Veh/h)	0	54	645	38	35	601
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	54	645	38	35	601
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1034	342			683	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1034	342			683	
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	92			96	
cM capacity (veh/h)	219	654			906	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	54	430	253	35	300	300
Volume Left	0	0	0	35	0	0
Volume Right	54	0	38	0	0	0
cSH	654	1700	1700	906	1700	1700
Volume to Capacity	0.08	0.25	0.15	0.04	0.18	0.18
Queue Length 95th (m)	2.2	0.0	0.0	1.0	0.0	0.0
Control Delay (s)	11.0	0.0	0.0	9.1	0.0	0.0
Lane LOS	B			A		
Approach Delay (s)	11.0	0.0		0.5		
Approach LOS	B					

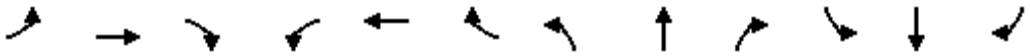
Intersection Summary				
Average Delay	0.7			
Intersection Capacity Utilization	29.0%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	4	4	679	52	40	561
Future Volume (Veh/h)	4	4	679	52	40	561
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	4	4	679	52	40	561
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1066	366			731	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1066	366			731	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	98	99			95	
cM capacity (veh/h)	207	631			869	

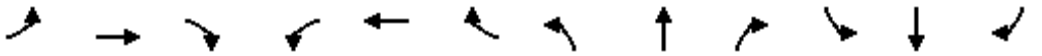
Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	4	4	453	278	40	280	280
Volume Left	4	0	0	0	40	0	0
Volume Right	0	4	0	52	0	0	0
cSH	207	631	1700	1700	869	1700	1700
Volume to Capacity	0.02	0.01	0.27	0.16	0.05	0.17	0.17
Queue Length 95th (m)	0.5	0.2	0.0	0.0	1.2	0.0	0.0
Control Delay (s)	22.7	10.7	0.0	0.0	9.3	0.0	0.0
Lane LOS	C	B			A		
Approach Delay (s)	16.7		0.0		0.6		
Approach LOS	C						

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	37.1%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	140	1625	232	104	2017	229	205	362	144	226	266	122
v/c Ratio	0.76	0.57	0.25	0.49	0.72	0.25	0.62	0.63	0.38	0.78	0.45	0.33
Control Delay	53.8	22.2	8.3	19.7	26.8	9.5	45.8	59.4	10.2	57.5	54.6	10.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.8	22.2	8.3	19.7	26.8	9.5	45.8	59.4	10.2	57.5	54.6	10.3
Queue Length 50th (m)	23.3	108.2	13.2	10.7	154.1	14.6	46.6	52.5	0.0	52.1	37.4	0.0
Queue Length 95th (m)	47.2	146.4	33.3	22.3	210.0	36.3	65.9	66.8	18.8	72.4	49.8	17.5
Internal Link Dist (m)		388.6			329.5			288.1			373.4	
Turn Bay Length (m)	220.0		55.0	230.0		65.0	130.0		95.0	115.0		65.0
Base Capacity (vph)	267	2832	940	306	2791	923	349	910	514	298	910	497
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	0.52	0.57	0.25	0.34	0.72	0.25	0.59	0.40	0.28	0.76	0.29	0.25

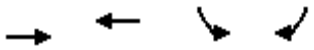
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	140	1625	232	104	2017	229	205	362	144	226	266	122
Future Volume (vph)	140	1625	232	104	2017	229	205	362	144	226	266	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	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)	1770	5085	1583	1770	5085	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.05	1.00	1.00	0.09	1.00	1.00	0.43	1.00	1.00	0.26	1.00	1.00
Satd. Flow (perm)	99	5085	1583	173	5085	1583	799	3539	1583	488	3539	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	140	1625	232	104	2017	229	205	362	144	226	266	122
RTOR Reduction (vph)	0	0	58	0	0	55	0	0	121	0	0	102
Lane Group Flow (vph)	140	1625	174	104	2017	174	205	362	23	226	266	20
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	85.3	75.1	75.1	83.1	74.0	74.0	35.4	19.8	19.8	36.4	20.3	20.3
Effective Green, g (s)	85.3	78.0	78.0	83.1	76.9	76.9	35.4	22.8	22.8	36.4	23.3	23.3
Actuated g/C Ratio	0.61	0.56	0.56	0.59	0.55	0.55	0.25	0.16	0.16	0.26	0.17	0.17
Clearance Time (s)	3.0	6.9	6.9	3.0	6.9	6.9	3.0	7.0	7.0	3.0	7.0	7.0
Vehicle Extension (s)	2.0	5.5	5.5	2.0	8.0	8.0	2.0	3.0	3.0	2.0	3.0	3.0
Lane Grp Cap (vph)	182	2833	881	206	2793	869	310	576	257	274	588	263
v/s Ratio Prot	c0.06	0.32		0.03	0.40		0.07	0.10		c0.09	0.08	
v/s Ratio Perm	c0.41		0.11	0.27		0.11	0.09		0.01	c0.12		0.01
v/c Ratio	0.77	0.57	0.20	0.50	0.72	0.20	0.66	0.63	0.09	0.82	0.45	0.08
Uniform Delay, d1	34.7	20.2	15.4	16.1	23.6	16.0	44.3	54.7	49.8	44.4	52.6	49.3
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	16.0	0.9	0.5	0.7	1.7	0.5	4.1	2.2	0.2	17.2	0.6	0.1
Delay (s)	50.7	21.0	15.9	16.8	25.2	16.5	48.4	56.8	50.0	61.6	53.2	49.4
Level of Service	D	C	B	B	C	B	D	E	D	E	D	D
Approach Delay (s)		22.5			24.0			53.0			55.5	
Approach LOS		C			C			D			E	

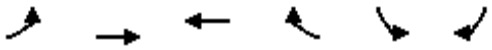
Intersection Summary			
HCM 2000 Control Delay	30.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	82.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	1926	1496	670	431
v/c Ratio	0.78	0.61	0.56	0.80
Control Delay	23.3	19.2	23.6	36.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	23.3	19.2	23.6	36.4
Queue Length 50th (m)	105.6	72.1	47.0	72.4
Queue Length 95th (m)	139.0	96.4	58.5	105.7
Internal Link Dist (m)	329.5	352.2	132.2	
Turn Bay Length (m)			85.0	65.0
Base Capacity (vph)	2472	2472	1394	628
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	0.78	0.61	0.48	0.69

Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑		↰↰	↱
Traffic Volume (vph)	0	1926	1496	0	238	863
Future Volume (vph)	0	1926	1496	0	238	863
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.0	7.0		6.0	6.0
Lane Util. Factor		0.91	0.91		0.97	0.91
Frt		1.00	1.00		0.90	0.85
Flt Protected		1.00	1.00		0.98	1.00
Satd. Flow (prot)		5085	5085		3207	1441
Flt Permitted		1.00	1.00		0.98	1.00
Satd. Flow (perm)		5085	5085		3207	1441
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1926	1496	0	238	863
RTOR Reduction (vph)	0	0	0	0	5	5
Lane Group Flow (vph)	0	1926	1496	0	665	426
Turn Type		NA	NA		Prot	Perm
Protected Phases		2	2		4	
Permitted Phases						4
Actuated Green, G (s)		43.8	43.8		33.2	33.2
Effective Green, g (s)		43.8	43.8		33.2	33.2
Actuated g/C Ratio		0.49	0.49		0.37	0.37
Clearance Time (s)		7.0	7.0		6.0	6.0
Vehicle Extension (s)		2.0	2.0		4.0	4.0
Lane Grp Cap (vph)		2474	2474		1183	531
v/s Ratio Prot		c0.38	0.29		0.21	
v/s Ratio Perm						c0.30
v/c Ratio		0.78	0.60		0.56	0.80
Uniform Delay, d1		19.1	16.8		22.6	25.5
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		2.5	1.1		0.7	9.0
Delay (s)		21.6	17.9		23.4	34.4
Level of Service		C	B		C	C
Approach Delay (s)		21.6	17.9		27.7	
Approach LOS		C	B		C	

Intersection Summary			
HCM 2000 Control Delay	21.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	75.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	1413	1463	175	130
v/c Ratio	0.36	0.37	0.34	0.52
Control Delay	4.4	4.5	30.6	34.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	4.4	4.5	30.6	34.6
Queue Length 50th (m)	27.1	28.4	13.1	19.3
Queue Length 95th (m)	44.3	46.4	21.5	37.8
Internal Link Dist (m)	352.2	106.9	57.5	
Turn Bay Length (m)			35.0	30.0
Base Capacity (vph)	3903	3903	1164	541
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	0.36	0.37	0.15	0.24

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1413	0	0	1463	44	261
Future Volume (vph)	1413	0	0	1463	44	261
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	4.0
Lane Util. Factor	0.91			0.91	0.97	0.91
Frt	1.00			1.00	0.89	0.85
Flt Protected	1.00			1.00	0.99	1.00
Satd. Flow (prot)	5085			5085	3168	1441
Flt Permitted	1.00			1.00	0.99	1.00
Satd. Flow (perm)	5085			5085	3168	1441
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1413	0	0	1463	44	261
RTOR Reduction (vph)	0	0	0	0	31	31
Lane Group Flow (vph)	1413	0	0	1463	144	99
Turn Type	NA			NA	Prot	Perm
Protected Phases	2			2	4	
Permitted Phases						4
Actuated Green, G (s)	73.8			73.8	13.2	13.2
Effective Green, g (s)	76.8			76.8	15.2	15.2
Actuated g/C Ratio	0.77			0.77	0.15	0.15
Clearance Time (s)	7.0			7.0	6.0	6.0
Vehicle Extension (s)	4.0			4.0	4.0	4.0
Lane Grp Cap (vph)	3905			3905	481	219
v/s Ratio Prot	0.28			c0.29	0.05	
v/s Ratio Perm						c0.07
v/c Ratio	0.36			0.37	0.30	0.45
Uniform Delay, d1	3.7			3.8	37.7	38.6
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.1			0.1	0.5	2.0
Delay (s)	3.8			3.9	38.2	40.7
Level of Service	A			A	D	D
Approach Delay (s)	3.8			3.9	39.2	
Approach LOS	A			A	D	

Intersection Summary			
HCM 2000 Control Delay	7.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	75.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	128	539	48	44	635
Future Volume (Veh/h)	0	128	539	48	44	635
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	128	539	48	44	635
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	968	294			587	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	968	294			587	
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	82			96	
cM capacity (veh/h)	240	703			984	

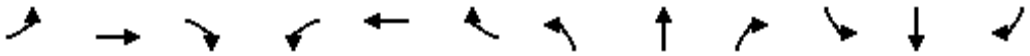
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	128	359	228	44	318	318
Volume Left	0	0	0	44	0	0
Volume Right	128	0	48	0	0	0
cSH	703	1700	1700	984	1700	1700
Volume to Capacity	0.18	0.21	0.13	0.04	0.19	0.19
Queue Length 95th (m)	5.3	0.0	0.0	1.1	0.0	0.0
Control Delay (s)	11.3	0.0	0.0	8.8	0.0	0.0
Lane LOS	B			A		
Approach Delay (s)	11.3	0.0		0.6		
Approach LOS	B					

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	31.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	72	68	519	92	75	560
Future Volume (Veh/h)	72	68	519	92	75	560
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	72	68	519	92	75	560
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	995	306			611	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	995	306			611	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	68	90			92	
cM capacity (veh/h)	223	690			964	

Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	72	68	346	265	75	280	280
Volume Left	72	0	0	0	75	0	0
Volume Right	0	68	0	92	0	0	0
cSH	223	690	1700	1700	964	1700	1700
Volume to Capacity	0.32	0.10	0.20	0.16	0.08	0.16	0.16
Queue Length 95th (m)	10.7	2.6	0.0	0.0	2.0	0.0	0.0
Control Delay (s)	28.7	10.8	0.0	0.0	9.0	0.0	0.0
Lane LOS	D	B			A		
Approach Delay (s)	20.0		0.0		1.1		
Approach LOS	C						

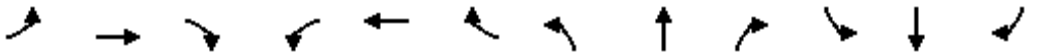
Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	35.4%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	135	1525	176	74	1304	229	181	247	141	313	278	149
v/c Ratio	0.48	0.52	0.18	0.32	0.46	0.24	0.59	0.61	0.46	0.97	0.63	0.46
Control Delay	15.1	19.8	7.5	12.9	20.2	5.1	48.5	65.4	13.3	88.3	64.9	12.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.1	19.8	7.5	12.9	20.2	5.1	48.5	65.4	13.3	88.3	64.9	12.6
Queue Length 50th (m)	13.4	97.8	9.4	7.1	80.8	6.2	42.4	36.5	0.0	80.0	41.5	0.0
Queue Length 95th (m)	24.0	126.4	24.2	14.3	106.2	22.0	62.4	49.8	19.8	#102.5	55.6	20.4
Internal Link Dist (m)		388.6			329.5			288.1			373.4	
Turn Bay Length (m)	220.0		55.0	230.0		65.0	130.0		95.0	115.0		65.0
Base Capacity (vph)	360	2928	955	327	2808	955	327	834	480	324	834	487
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	0.38	0.52	0.18	0.23	0.46	0.24	0.55	0.30	0.29	0.97	0.33	0.31

Intersection Summary

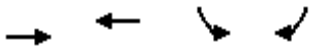
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	135	1525	176	74	1304	229	181	247	141	313	278	149
Future Volume (vph)	135	1525	176	74	1304	229	181	247	141	313	278	149
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.9	6.9	4.0	6.9	6.9	4.0	7.0	7.0	4.0	7.0	7.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	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)	1770	5085	1583	1770	5085	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.15	1.00	1.00	0.12	1.00	1.00	0.50	1.00	1.00	0.46	1.00	1.00
Satd. Flow (perm)	286	5085	1583	227	5085	1583	924	3539	1583	850	3539	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	135	1525	176	74	1304	229	181	247	141	313	278	149
RTOR Reduction (vph)	0	0	44	0	0	81	0	0	125	0	0	130
Lane Group Flow (vph)	135	1525	132	74	1304	148	181	247	16	313	278	19
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	88.6	79.7	79.7	83.6	77.2	77.2	30.5	16.0	16.0	33.5	17.5	17.5
Effective Green, g (s)	88.6	79.7	79.7	83.6	77.2	77.2	30.5	16.0	16.0	33.5	17.5	17.5
Actuated g/C Ratio	0.63	0.57	0.57	0.60	0.55	0.55	0.22	0.11	0.11	0.24	0.12	0.12
Clearance Time (s)	4.0	6.9	6.9	4.0	6.9	6.9	4.0	7.0	7.0	4.0	7.0	7.0
Vehicle Extension (s)	2.0	5.5	5.5	2.0	8.0	8.0	2.0	3.0	3.0	2.0	3.0	3.0
Lane Grp Cap (vph)	275	2894	901	206	2804	872	288	404	180	308	442	197
v/s Ratio Prot	c0.03	c0.30		0.02	0.26		0.06	0.07		c0.12	0.08	
v/s Ratio Perm	0.28		0.08	0.20		0.09	0.07		0.01	c0.13		0.01
v/c Ratio	0.49	0.53	0.15	0.36	0.47	0.17	0.63	0.61	0.09	1.02	0.63	0.09
Uniform Delay, d1	12.1	18.6	14.2	13.4	18.9	15.5	47.7	59.0	55.5	51.0	58.2	54.2
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	0.5	0.7	0.3	0.4	0.5	0.4	3.1	2.7	0.2	55.5	2.8	0.2
Delay (s)	12.6	19.2	14.5	13.7	19.5	15.9	50.8	61.8	55.7	106.4	61.0	54.4
Level of Service	B	B	B	B	B	B	D	E	E	F	E	D
Approach Delay (s)		18.3			18.7			56.8			78.9	
Approach LOS		B			B			E			E	

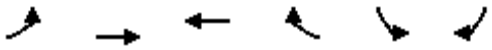
Intersection Summary			
HCM 2000 Control Delay	32.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	21.9
Intersection Capacity Utilization	79.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	1823	1083	473	262
v/c Ratio	0.59	0.35	0.57	0.68
Control Delay	12.9	10.1	29.2	34.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	12.9	10.1	29.2	34.8
Queue Length 50th (m)	66.9	32.4	36.3	41.6
Queue Length 95th (m)	107.0	53.9	44.0	61.0
Internal Link Dist (m)	329.5	352.2	132.2	
Turn Bay Length (m)			85.0	65.0
Base Capacity (vph)	3088	3088	1423	643
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	0.59	0.35	0.33	0.41

Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑		↰↰	↱
Traffic Volume (vph)	0	1823	1083	0	211	524
Future Volume (vph)	0	1823	1083	0	211	524
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.0	7.0		6.0	6.0
Lane Util. Factor		0.91	0.91		0.97	0.91
Frt		1.00	1.00		0.92	0.85
Flt Protected		1.00	1.00		0.98	1.00
Satd. Flow (prot)		5085	5085		3241	1441
Flt Permitted		1.00	1.00		0.98	1.00
Satd. Flow (perm)		5085	5085		3241	1441
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1823	1083	0	211	524
RTOR Reduction (vph)	0	0	0	0	26	26
Lane Group Flow (vph)	0	1823	1083	0	447	236
Turn Type		NA	NA		Prot	Perm
Protected Phases		2	2		4	
Permitted Phases						4
Actuated Green, G (s)		54.7	54.7		22.3	22.3
Effective Green, g (s)		54.7	54.7		22.3	22.3
Actuated g/C Ratio		0.61	0.61		0.25	0.25
Clearance Time (s)		7.0	7.0		6.0	6.0
Vehicle Extension (s)		2.0	2.0		4.0	4.0
Lane Grp Cap (vph)		3090	3090		803	357
v/s Ratio Prot		c0.36	0.21		0.14	
v/s Ratio Perm						c0.16
v/c Ratio		0.59	0.35		0.56	0.66
Uniform Delay, d1		10.8	8.8		29.5	30.5
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.8	0.3		1.0	5.0
Delay (s)		11.6	9.1		30.6	35.5
Level of Service		B	A		C	D
Approach Delay (s)		11.6	9.1		32.3	
Approach LOS		B	A		C	

Intersection Summary			
HCM 2000 Control Delay	15.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	57.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	1312	1292	218	140
v/c Ratio	0.35	0.35	0.46	0.60
Control Delay	5.5	5.5	34.6	39.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	5.5	5.5	34.6	39.2
Queue Length 50th (m)	29.5	28.9	17.4	21.4
Queue Length 95th (m)	46.9	46.0	27.0	40.6
Internal Link Dist (m)	352.2	106.9	57.5	
Turn Bay Length (m)			35.0	30.0
Base Capacity (vph)	3723	3723	1116	515
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	0.35	0.35	0.20	0.27

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1312	0	0	1292	78	280
Future Volume (vph)	1312	0	0	1292	78	280
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0			7.0	6.0	6.0
Lane Util. Factor	0.91			0.91	0.97	0.91
Frt	1.00			1.00	0.90	0.85
Flt Protected	1.00			1.00	0.98	1.00
Satd. Flow (prot)	5085			5085	3208	1441
Flt Permitted	1.00			1.00	0.98	1.00
Satd. Flow (perm)	5085			5085	3208	1441
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1312	0	0	1292	78	280
RTOR Reduction (vph)	0	0	0	0	34	34
Lane Group Flow (vph)	1312	0	0	1292	184	106
Turn Type	NA			NA	Prot	Perm
Protected Phases	2			2	4	
Permitted Phases						4
Actuated Green, G (s)	73.2			73.2	13.8	13.8
Effective Green, g (s)	73.2			73.2	13.8	13.8
Actuated g/C Ratio	0.73			0.73	0.14	0.14
Clearance Time (s)	7.0			7.0	6.0	6.0
Vehicle Extension (s)	4.0			4.0	4.0	4.0
Lane Grp Cap (vph)	3722			3722	442	198
v/s Ratio Prot	c0.26			0.25	0.06	
v/s Ratio Perm						c0.07
v/c Ratio	0.35			0.35	0.42	0.54
Uniform Delay, d1	4.8			4.8	39.4	40.1
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.1			0.1	0.9	3.5
Delay (s)	4.9			4.9	40.3	43.7
Level of Service	A			A	D	D
Approach Delay (s)	4.9			4.9	41.6	
Approach LOS	A			A	D	

Intersection Summary			
HCM 2000 Control Delay	9.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	57.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	111	773	92	73	526
Future Volume (Veh/h)	0	111	773	92	73	526
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	111	773	92	73	526
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1228	432			865	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1228	432			865	
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	81			91	
cM capacity (veh/h)	154	571			774	

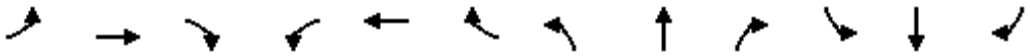
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	111	515	350	73	263	263
Volume Left	0	0	0	73	0	0
Volume Right	111	0	92	0	0	0
cSH	571	1700	1700	774	1700	1700
Volume to Capacity	0.19	0.30	0.21	0.09	0.15	0.15
Queue Length 95th (m)	5.7	0.0	0.0	2.5	0.0	0.0
Control Delay (s)	12.8	0.0	0.0	10.1	0.0	0.0
Lane LOS	B			B		
Approach Delay (s)	12.8	0.0		1.2		
Approach LOS	B					

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	37.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	56	53	812	16	13	513
Future Volume (Veh/h)	56	53	812	16	13	513
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	56	53	812	16	13	513
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1102	414			828	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1102	414			828	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	72	91			98	
cM capacity (veh/h)	202	587			799	

Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	56	53	541	287	13	256	256
Volume Left	56	0	0	0	13	0	0
Volume Right	0	53	0	16	0	0	0
cSH	202	587	1700	1700	799	1700	1700
Volume to Capacity	0.28	0.09	0.32	0.17	0.02	0.15	0.15
Queue Length 95th (m)	8.7	2.4	0.0	0.0	0.4	0.0	0.0
Control Delay (s)	29.5	11.7	0.0	0.0	9.6	0.0	0.0
Lane LOS	D	B			A		
Approach Delay (s)	20.8		0.0		0.2		
Approach LOS	C						

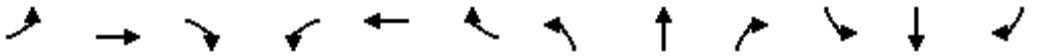
Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	33.0%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	183	1628	254	359	1971	192	235	453	153	199	270	153
v/c Ratio	0.78	0.80	0.35	0.92	0.79	0.23	0.68	0.68	0.36	0.76	0.41	0.37
Control Delay	55.7	40.8	13.6	69.9	34.4	11.8	47.1	57.7	8.9	53.8	51.4	9.0
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	55.7	40.8	13.6	69.9	34.4	11.8	47.1	57.7	8.9	53.8	51.4	9.0
Queue Length 50th (m)	34.7	152.0	20.5	86.6	174.9	13.8	52.9	65.5	0.0	43.8	36.8	0.0
Queue Length 95th (m)	59.1	172.3	42.8	#175.4	#241.4	34.7	72.8	80.4	18.3	61.7	48.5	18.3
Internal Link Dist (m)		388.6			329.5			288.1			373.4	
Turn Bay Length (m)	220.0		55.0	230.0		65.0	130.0		95.0	115.0		65.0
Base Capacity (vph)	271	2034	719	391	2485	826	351	910	520	278	910	520
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	0.68	0.80	0.35	0.92	0.79	0.23	0.67	0.50	0.29	0.72	0.30	0.29

Intersection Summary

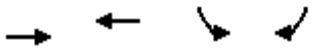
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	183	1628	254	359	1971	192	235	453	153	199	270	153
Future Volume (vph)	183	1628	254	359	1971	192	235	453	153	199	270	153
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	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)	1770	5085	1583	1770	5085	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.08	1.00	1.00	0.07	1.00	1.00	0.42	1.00	1.00	0.22	1.00	1.00
Satd. Flow (perm)	140	5085	1583	130	5085	1583	791	3539	1583	410	3539	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	183	1628	254	359	1971	192	235	453	153	199	270	153
RTOR Reduction (vph)	0	0	86	0	0	53	0	0	124	0	0	125
Lane Group Flow (vph)	183	1628	168	359	1971	139	235	453	29	199	270	28
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	67.3	53.1	53.1	83.7	65.5	65.5	39.1	23.6	23.6	37.7	22.9	22.9
Effective Green, g (s)	67.3	56.0	56.0	83.7	68.4	68.4	39.1	26.6	26.6	37.7	25.9	25.9
Actuated g/C Ratio	0.48	0.40	0.40	0.60	0.49	0.49	0.28	0.19	0.19	0.27	0.18	0.18
Clearance Time (s)	4.0	6.9	6.9	4.0	6.9	6.9	4.0	7.0	7.0	4.0	7.0	7.0
Vehicle Extension (s)	2.0	5.5	5.5	2.0	8.0	8.0	2.0	3.0	3.0	2.0	3.0	3.0
Lane Grp Cap (vph)	232	2034	633	389	2484	773	329	672	300	254	654	292
v/s Ratio Prot	0.08	0.32		c0.18	0.39		0.08	0.13		c0.08	0.08	
v/s Ratio Perm	0.30		0.11	c0.37		0.09	0.12		0.02	c0.13		0.02
v/c Ratio	0.79	0.80	0.26	0.92	0.79	0.18	0.71	0.67	0.10	0.78	0.41	0.10
Uniform Delay, d1	35.2	37.1	28.2	44.2	29.9	20.1	42.1	52.7	46.8	42.8	50.3	47.3
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	15.0	3.4	1.0	26.8	2.5	0.5	6.0	2.7	0.1	13.5	0.4	0.1
Delay (s)	50.2	40.5	29.2	71.0	32.4	20.5	48.1	55.4	46.9	56.3	50.8	47.5
Level of Service	D	D	C	E	C	C	D	E	D	E	D	D
Approach Delay (s)		40.0			37.0			51.8			51.7	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	41.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	88.2%	ICU Level of Service	E
Analysis Period (min)	15		

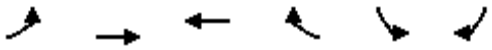
c Critical Lane Group



Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	1865	1354	866	599
v/c Ratio	0.79	0.57	0.60	0.91
Control Delay	23.7	19.0	20.4	43.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	23.7	19.0	20.4	43.5
Queue Length 50th (m)	103.0	64.5	57.1	103.8
Queue Length 95th (m)	123.5	79.0	76.0	#181.7
Internal Link Dist (m)	329.5	352.2	132.2	
Turn Bay Length (m)			85.0	65.0
Base Capacity (vph)	2357	2357	1463	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	0.79	0.57	0.59	0.90

Intersection Summary

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



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑		↰↰↑	↱
Traffic Volume (vph)	0	1865	1354	0	267	1198
Future Volume (vph)	0	1865	1354	0	267	1198
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0
Lane Util. Factor		0.91	0.91		0.97	0.91
Frt		1.00	1.00		0.90	0.85
Flt Protected		1.00	1.00		0.98	1.00
Satd. Flow (prot)		5085	5085		3190	1441
Flt Permitted		1.00	1.00		0.98	1.00
Satd. Flow (perm)		5085	5085		3190	1441
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1865	1354	0	267	1198
RTOR Reduction (vph)	0	0	0	0	10	10
Lane Group Flow (vph)	0	1865	1354	0	856	589
Turn Type		NA	NA		Prot	Perm
Protected Phases		2	2		4	
Permitted Phases						4
Actuated Green, G (s)		38.7	38.7		38.3	38.3
Effective Green, g (s)		41.7	41.7		40.3	40.3
Actuated g/C Ratio		0.46	0.46		0.45	0.45
Clearance Time (s)		7.0	7.0		6.0	6.0
Vehicle Extension (s)		2.0	2.0		4.0	4.0
Lane Grp Cap (vph)		2356	2356		1428	645
v/s Ratio Prot		c0.37	0.27		0.27	
v/s Ratio Perm						c0.41
v/c Ratio		0.79	0.57		0.60	0.91
Uniform Delay, d1		20.5	17.7		18.8	23.2
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		2.8	1.0		0.8	17.6
Delay (s)		23.3	18.7		19.6	40.8
Level of Service		C	B		B	D
Approach Delay (s)		23.3	18.7		28.2	
Approach LOS		C	B		C	

Intersection Summary			
HCM 2000 Control Delay	23.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	82.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	1382	1435	198	136
v/c Ratio	0.35	0.37	0.38	0.53
Control Delay	4.4	4.5	31.3	34.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	4.4	4.5	31.3	34.3
Queue Length 50th (m)	26.5	28.0	15.1	20.0
Queue Length 95th (m)	43.7	46.0	23.9	38.5
Internal Link Dist (m)	352.2	106.9	57.5	
Turn Bay Length (m)			35.0	30.0
Base Capacity (vph)	3893	3893	1173	543
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	0.35	0.37	0.17	0.25

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1382	0	0	1435	61	273
Future Volume (vph)	1382	0	0	1435	61	273
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	4.0
Lane Util. Factor	0.91			0.91	0.97	0.91
Frt	1.00			1.00	0.90	0.85
Flt Protected	1.00			1.00	0.98	1.00
Satd. Flow (prot)	5085			5085	3190	1441
Flt Permitted	1.00			1.00	0.98	1.00
Satd. Flow (perm)	5085			5085	3190	1441
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1382	0	0	1435	61	273
RTOR Reduction (vph)	0	0	0	0	33	33
Lane Group Flow (vph)	1382	0	0	1435	165	103
Turn Type	NA			NA	Prot	Perm
Protected Phases	2			2	4	
Permitted Phases						4
Actuated Green, G (s)	73.6			73.6	13.4	13.4
Effective Green, g (s)	76.6			76.6	15.4	15.4
Actuated g/C Ratio	0.77			0.77	0.15	0.15
Clearance Time (s)	7.0			7.0	6.0	6.0
Vehicle Extension (s)	4.0			4.0	4.0	4.0
Lane Grp Cap (vph)	3895			3895	491	221
v/s Ratio Prot	0.27			c0.28	0.05	
v/s Ratio Perm						c0.07
v/c Ratio	0.35			0.37	0.34	0.47
Uniform Delay, d1	3.8			3.8	37.7	38.6
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.1			0.1	0.6	2.1
Delay (s)	3.8			3.9	38.3	40.7
Level of Service	A			A	D	D
Approach Delay (s)	3.8			3.9	39.3	
Approach LOS	A			A	D	

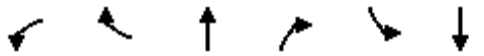
Intersection Summary			
HCM 2000 Control Delay	7.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	82.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	54	716	38	35	668
Future Volume (Veh/h)	0	54	716	38	35	668
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	54	716	38	35	668
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1139	377			754	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1139	377			754	
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	91			96	
cM capacity (veh/h)	187	621			852	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	54	477	277	35	334	334
Volume Left	0	0	0	35	0	0
Volume Right	54	0	38	0	0	0
cSH	621	1700	1700	852	1700	1700
Volume to Capacity	0.09	0.28	0.16	0.04	0.20	0.20
Queue Length 95th (m)	2.3	0.0	0.0	1.0	0.0	0.0
Control Delay (s)	11.4	0.0	0.0	9.4	0.0	0.0
Lane LOS	B			A		
Approach Delay (s)	11.4	0.0		0.5		
Approach LOS	B					

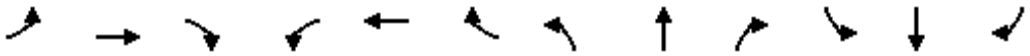
Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	31.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	4	4	750	52	40	628
Future Volume (Veh/h)	4	4	750	52	40	628
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	4	4	750	52	40	628
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1170	401			802	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1170	401			802	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	98	99			95	
cM capacity (veh/h)	177	599			817	

Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	4	4	500	302	40	314	314
Volume Left	4	0	0	0	40	0	0
Volume Right	0	4	0	52	0	0	0
cSH	177	599	1700	1700	817	1700	1700
Volume to Capacity	0.02	0.01	0.29	0.18	0.05	0.18	0.18
Queue Length 95th (m)	0.6	0.2	0.0	0.0	1.2	0.0	0.0
Control Delay (s)	25.8	11.1	0.0	0.0	9.6	0.0	0.0
Lane LOS	D	B			A		
Approach Delay (s)	18.4		0.0		0.6		
Approach LOS	C						

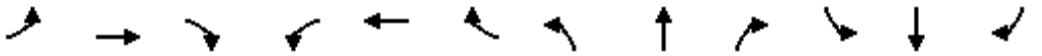
Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	39.1%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	153	1797	257	115	2231	250	226	399	159	249	294	135
v/c Ratio	0.78	0.65	0.28	0.61	0.83	0.28	0.67	0.65	0.39	0.86	0.47	0.35
Control Delay	56.4	25.5	10.1	34.9	32.1	11.3	47.2	58.8	9.6	65.6	53.9	9.7
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	56.4	25.5	10.1	34.9	32.1	11.3	47.2	58.8	9.6	65.6	53.9	9.7
Queue Length 50th (m)	27.0	131.4	17.5	12.4	192.0	18.7	51.2	57.7	0.0	57.2	41.2	0.0
Queue Length 95th (m)	51.5	176.5	41.4	35.7	#275.2	44.0	71.0	72.3	19.2	#82.1	53.7	18.0
Internal Link Dist (m)		388.6			329.5			288.1			373.4	
Turn Bay Length (m)	220.0		55.0	230.0		65.0	130.0		95.0	115.0		65.0
Base Capacity (vph)	268	2745	915	276	2695	895	349	910	525	295	910	507
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	0.57	0.65	0.28	0.42	0.83	0.28	0.65	0.44	0.30	0.84	0.32	0.27

Intersection Summary

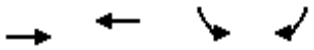
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	153	1797	257	115	2231	250	226	399	159	249	294	135
Future Volume (vph)	153	1797	257	115	2231	250	226	399	159	249	294	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	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)	1770	5085	1583	1770	5085	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.06	1.00	1.00	0.07	1.00	1.00	0.40	1.00	1.00	0.24	1.00	1.00
Satd. Flow (perm)	102	5085	1583	122	5085	1583	743	3539	1583	445	3539	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	153	1797	257	115	2231	250	226	399	159	249	294	135
RTOR Reduction (vph)	0	0	61	0	0	56	0	0	131	0	0	111
Lane Group Flow (vph)	153	1797	196	115	2231	194	226	399	28	249	294	24
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	83.8	72.7	72.7	81.0	71.3	71.3	37.3	21.3	21.3	38.1	21.7	21.7
Effective Green, g (s)	83.8	75.6	75.6	81.0	74.2	74.2	37.3	24.3	24.3	38.1	24.7	24.7
Actuated g/C Ratio	0.60	0.54	0.54	0.58	0.53	0.53	0.27	0.17	0.17	0.27	0.18	0.18
Clearance Time (s)	3.0	6.9	6.9	3.0	6.9	6.9	3.0	7.0	7.0	3.0	7.0	7.0
Vehicle Extension (s)	2.0	5.5	5.5	2.0	8.0	8.0	2.0	3.0	3.0	2.0	3.0	3.0
Lane Grp Cap (vph)	193	2745	854	184	2695	838	315	614	274	276	624	279
v/s Ratio Prot	c0.06	0.35		0.04	c0.44		0.08	0.11		c0.11	0.08	
v/s Ratio Perm	0.41		0.12	0.32		0.12	0.11		0.02	c0.14		0.02
v/c Ratio	0.79	0.65	0.23	0.62	0.83	0.23	0.72	0.65	0.10	0.90	0.47	0.09
Uniform Delay, d1	38.4	22.9	16.9	20.8	27.6	17.6	43.4	53.9	48.7	44.0	51.8	48.2
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	18.5	1.2	0.6	4.7	2.9	0.6	6.4	2.4	0.2	29.5	0.6	0.1
Delay (s)	56.8	24.1	17.5	25.5	30.4	18.2	49.7	56.3	48.8	73.5	52.3	48.3
Level of Service	E	C	B	C	C	B	D	E	D	E	D	D
Approach Delay (s)		25.6			29.0			52.9			59.3	
Approach LOS		C			C			D			E	

Intersection Summary			
HCM 2000 Control Delay	34.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	89.7%	ICU Level of Service	E
Analysis Period (min)	15		

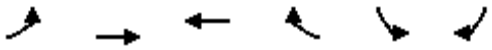
c Critical Lane Group



Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	2130	1652	740	477
v/c Ratio	0.90	0.70	0.59	0.84
Control Delay	30.4	22.0	23.1	38.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	30.4	22.0	23.1	38.7
Queue Length 50th (m)	134.6	89.7	50.2	79.1
Queue Length 95th (m)	#178.6	110.4	66.2	#126.0
Internal Link Dist (m)	329.5	352.2	132.2	
Turn Bay Length (m)			85.0	65.0
Base Capacity (vph)	2358	2358	1392	627
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	0.90	0.70	0.53	0.76

Intersection Summary

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



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑		↰↰	↱
Traffic Volume (vph)	0	2130	1652	0	263	954
Future Volume (vph)	0	2130	1652	0	263	954
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.0	7.0		6.0	6.0
Lane Util. Factor		0.91	0.91		0.97	0.91
Frt		1.00	1.00		0.90	0.85
Flt Protected		1.00	1.00		0.98	1.00
Satd. Flow (prot)		5085	5085		3207	1441
Flt Permitted		1.00	1.00		0.98	1.00
Satd. Flow (perm)		5085	5085		3207	1441
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	2130	1652	0	263	954
RTOR Reduction (vph)	0	0	0	0	3	3
Lane Group Flow (vph)	0	2130	1652	0	737	474
Turn Type		NA	NA		Prot	Perm
Protected Phases		2	2		4	
Permitted Phases						4
Actuated Green, G (s)		41.7	41.7		35.3	35.3
Effective Green, g (s)		41.7	41.7		35.3	35.3
Actuated g/C Ratio		0.46	0.46		0.39	0.39
Clearance Time (s)		7.0	7.0		6.0	6.0
Vehicle Extension (s)		2.0	2.0		4.0	4.0
Lane Grp Cap (vph)		2356	2356		1257	565
v/s Ratio Prot		c0.42	0.32		0.23	
v/s Ratio Perm						c0.33
v/c Ratio		0.90	0.70		0.59	0.84
Uniform Delay, d1		22.3	19.2		21.6	24.8
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		6.3	1.8		0.8	11.0
Delay (s)		28.6	21.0		22.4	35.8
Level of Service		C	C		C	D
Approach Delay (s)		28.6	21.0		27.6	
Approach LOS		C	C		C	

Intersection Summary			
HCM 2000 Control Delay	25.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	82.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	1563	1617	193	144
v/c Ratio	0.41	0.42	0.35	0.55
Control Delay	5.2	5.3	32.5	38.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	5.2	5.3	32.5	38.5
Queue Length 50th (m)	34.4	36.1	15.7	24.5
Queue Length 95th (m)	55.1	57.7	24.1	43.1
Internal Link Dist (m)	352.2	106.9	57.5	
Turn Bay Length (m)			35.0	30.0
Base Capacity (vph)	3828	3828	1156	534
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	0.41	0.42	0.17	0.27

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1563	0	0	1617	48	289
Future Volume (vph)	1563	0	0	1617	48	289
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	4.0
Lane Util. Factor	0.91			0.91	0.97	0.91
Frt	1.00			1.00	0.89	0.85
Flt Protected	1.00			1.00	0.99	1.00
Satd. Flow (prot)	5085			5085	3167	1441
Flt Permitted	1.00			1.00	0.99	1.00
Satd. Flow (perm)	5085			5085	3167	1441
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1563	0	0	1617	48	289
RTOR Reduction (vph)	0	0	0	0	21	21
Lane Group Flow (vph)	1563	0	0	1617	172	123
Turn Type	NA			NA	Prot	Perm
Protected Phases	2			2	4	
Permitted Phases						4
Actuated Green, G (s)	72.3			72.3	14.7	14.7
Effective Green, g (s)	75.3			75.3	16.7	16.7
Actuated g/C Ratio	0.75			0.75	0.17	0.17
Clearance Time (s)	7.0			7.0	6.0	6.0
Vehicle Extension (s)	4.0			4.0	4.0	4.0
Lane Grp Cap (vph)	3829			3829	528	240
v/s Ratio Prot	0.31			c0.32	0.05	
v/s Ratio Perm						c0.09
v/c Ratio	0.41			0.42	0.33	0.51
Uniform Delay, d1	4.4			4.5	36.7	37.9
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.1			0.1	0.5	2.5
Delay (s)	4.5			4.6	37.2	40.4
Level of Service	A			A	D	D
Approach Delay (s)	4.5			4.6	38.6	
Approach LOS	A			A	D	

Intersection Summary			
HCM 2000 Control Delay	7.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	82.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	128	592	48	44	677
Future Volume (Veh/h)	0	128	592	48	44	677
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	128	592	48	44	677
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1042	320			640	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1042	320			640	
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	81			95	
cM capacity (veh/h)	214	676			940	

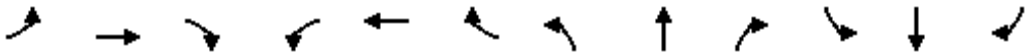
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	128	395	245	44	338	338
Volume Left	0	0	0	44	0	0
Volume Right	128	0	48	0	0	0
cSH	676	1700	1700	940	1700	1700
Volume to Capacity	0.19	0.23	0.14	0.05	0.20	0.20
Queue Length 95th (m)	5.6	0.0	0.0	1.2	0.0	0.0
Control Delay (s)	11.6	0.0	0.0	9.0	0.0	0.0
Lane LOS	B			A		
Approach Delay (s)	11.6	0.0		0.6		
Approach LOS	B					

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	32.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	72	68	572	92	75	602
Future Volume (Veh/h)	72	68	572	92	75	602
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	72	68	572	92	75	602
Pedestrians			72			
Lane Width (m)			3.6			
Walking Speed (m/s)			1.2			
Percent Blockage			6			
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1141	332			664	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1141	332			664	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	57	90			92	
cM capacity (veh/h)	168	664			921	

Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	72	68	381	283	75	301	301
Volume Left	72	0	0	0	75	0	0
Volume Right	0	68	0	92	0	0	0
cSH	168	664	1700	1700	921	1700	1700
Volume to Capacity	0.43	0.10	0.22	0.17	0.08	0.18	0.18
Queue Length 95th (m)	15.5	2.7	0.0	0.0	2.1	0.0	0.0
Control Delay (s)	41.7	11.0	0.0	0.0	9.3	0.0	0.0
Lane LOS	E	B			A		
Approach Delay (s)	26.8		0.0		1.0		
Approach LOS	D						

Intersection Summary			
Average Delay	3.0		
Intersection Capacity Utilization	36.9%	ICU Level of Service	A
Analysis Period (min)	15		

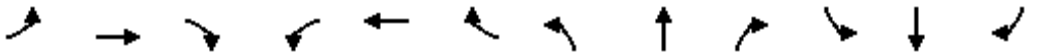


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	146	1686	194	82	1442	247	200	271	156	338	305	161
v/c Ratio	0.57	0.55	0.19	0.41	0.48	0.24	0.75	0.56	0.44	1.19	0.58	0.43
Control Delay	17.0	18.3	5.7	14.2	17.7	3.3	60.4	60.4	11.5	156.3	59.9	10.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.0	18.3	5.7	14.2	17.7	3.3	60.4	60.4	11.5	156.3	59.9	10.9
Queue Length 50th (m)	13.6	101.5	8.0	7.3	83.1	3.1	47.9	39.3	0.0	~90.4	44.3	0.0
Queue Length 95th (m)	24.2	133.6	22.1	14.7	111.5	17.2	69.2	52.7	20.1	#141.3	58.5	20.2
Internal Link Dist (m)		388.6			329.5			288.1			373.4	
Turn Bay Length (m)	220.0		55.0	230.0		65.0	130.0		95.0	115.0		65.0
Base Capacity (vph)	295	3040	996	274	3001	1024	272	733	451	283	758	465
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	0.49	0.55	0.19	0.30	0.48	0.24	0.74	0.37	0.35	1.19	0.40	0.35

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

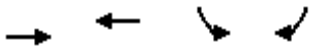
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	146	1686	194	82	1442	247	200	271	156	338	305	161
Future Volume (vph)	146	1686	194	82	1442	247	200	271	156	338	305	161
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	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)	1770	5085	1583	1770	5085	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.13	1.00	1.00	0.09	1.00	1.00	0.35	1.00	1.00	0.33	1.00	1.00
Satd. Flow (perm)	239	5085	1583	172	5085	1583	655	3539	1583	607	3539	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	146	1686	194	82	1442	247	200	271	156	338	305	161
RTOR Reduction (vph)	0	0	50	0	0	90	0	0	134	0	0	137
Lane Group Flow (vph)	146	1686	144	82	1442	157	200	271	22	338	305	24
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	89.8	80.8	80.8	87.8	79.8	79.8	29.8	16.3	16.3	32.8	17.8	17.8
Effective Green, g (s)	89.8	83.7	83.7	87.8	82.7	82.7	29.8	19.3	19.3	32.8	20.8	20.8
Actuated g/C Ratio	0.64	0.60	0.60	0.63	0.59	0.59	0.21	0.14	0.14	0.23	0.15	0.15
Clearance Time (s)	3.0	6.9	6.9	3.0	6.9	6.9	3.0	7.0	7.0	3.0	7.0	7.0
Vehicle Extension (s)	2.0	5.5	5.5	2.0	8.0	8.0	2.0	3.0	3.0	2.0	3.0	3.0
Lane Grp Cap (vph)	251	3040	946	199	3003	935	246	487	218	266	525	235
v/s Ratio Prot	c0.04	0.33		0.02	0.28		0.08	0.08		c0.14	0.09	
v/s Ratio Perm	c0.34		0.09	0.23		0.10	0.09		0.01	c0.16		0.02
v/c Ratio	0.58	0.55	0.15	0.41	0.48	0.17	0.81	0.56	0.10	1.27	0.58	0.10
Uniform Delay, d1	12.6	16.9	12.5	13.4	16.4	13.0	49.3	56.4	52.7	50.5	55.5	51.5
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	2.2	0.7	0.3	0.5	0.5	0.4	17.4	1.4	0.2	148.0	1.6	0.2
Delay (s)	14.8	17.7	12.8	13.9	16.9	13.4	66.7	57.7	52.9	198.5	57.2	51.7
Level of Service	B	B	B	B	B	B	E	E	D	F	E	D
Approach Delay (s)		17.0			16.3			59.4			115.5	
Approach LOS		B			B			E			F	

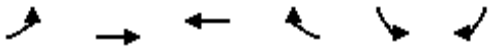
Intersection Summary			
HCM 2000 Control Delay	37.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	78.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	2012	1194	523	288
v/c Ratio	0.64	0.38	0.54	0.66
Control Delay	13.1	9.8	26.5	31.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	13.1	9.8	26.5	31.0
Queue Length 50th (m)	75.0	35.2	38.9	44.9
Queue Length 95th (m)	121.7	59.1	45.6	63.8
Internal Link Dist (m)	329.5	352.2	132.2	
Turn Bay Length (m)			85.0	65.0
Base Capacity (vph)	3160	3160	1493	673
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	0.64	0.38	0.35	0.43

Intersection Summary



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑		↰↰	↱
Traffic Volume (vph)	0	2012	1194	0	234	577
Future Volume (vph)	0	2012	1194	0	234	577
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0
Lane Util. Factor		0.91	0.91		0.97	0.91
Frt		1.00	1.00		0.92	0.85
Flt Protected		1.00	1.00		0.98	1.00
Satd. Flow (prot)		5085	5085		3242	1441
Flt Permitted		1.00	1.00		0.98	1.00
Satd. Flow (perm)		5085	5085		3242	1441
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	2012	1194	0	234	577
RTOR Reduction (vph)	0	0	0	0	23	23
Lane Group Flow (vph)	0	2012	1194	0	500	265
Turn Type		NA	NA		Prot	Perm
Protected Phases		2	2		4	
Permitted Phases						4
Actuated Green, G (s)		52.9	52.9		24.1	24.1
Effective Green, g (s)		55.9	55.9		26.1	26.1
Actuated g/C Ratio		0.62	0.62		0.29	0.29
Clearance Time (s)		7.0	7.0		6.0	6.0
Vehicle Extension (s)		2.0	2.0		4.0	4.0
Lane Grp Cap (vph)		3158	3158		940	417
v/s Ratio Prot		c0.40	0.23		0.15	
v/s Ratio Perm						c0.18
v/c Ratio		0.64	0.38		0.53	0.64
Uniform Delay, d1		10.7	8.4		26.8	27.8
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		1.0	0.3		0.7	3.6
Delay (s)		11.7	8.8		27.6	31.4
Level of Service		B	A		C	C
Approach Delay (s)		11.7	8.8		28.9	
Approach LOS		B	A		C	

Intersection Summary			
HCM 2000 Control Delay	14.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	58.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

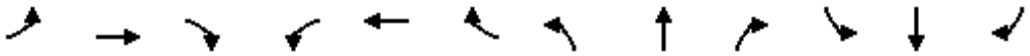
Lane Group	EBT	WBT	NBL	NBR
Lane Group Flow (vph)	1448	1427	239	155
v/c Ratio	0.38	0.38	0.41	0.56
Control Delay	5.3	5.3	32.6	36.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	5.3	5.3	32.6	36.5
Queue Length 50th (m)	31.2	30.7	19.4	25.1
Queue Length 95th (m)	52.6	51.5	28.3	43.9
Internal Link Dist (m)	352.2	106.9	57.5	
Turn Bay Length (m)			35.0	30.0
Base Capacity (vph)	3797	3797	1176	539
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	0.38	0.38	0.20	0.29

Intersection Summary

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1448	0	0	1427	84	310
Future Volume (vph)	1448	0	0	1427	84	310
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	4.0
Lane Util. Factor	0.91			0.91	0.97	0.91
Frt	1.00			1.00	0.90	0.85
Flt Protected	1.00			1.00	0.98	1.00
Satd. Flow (prot)	5085			5085	3206	1441
Flt Permitted	1.00			1.00	0.98	1.00
Satd. Flow (perm)	5085			5085	3206	1441
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1448	0	0	1427	84	310
RTOR Reduction (vph)	0	0	0	0	27	27
Lane Group Flow (vph)	1448	0	0	1427	212	128
Turn Type	NA			NA	Prot	Perm
Protected Phases	2			2	4	
Permitted Phases						4
Actuated Green, G (s)	71.7			71.7	15.3	15.3
Effective Green, g (s)	74.7			74.7	17.3	17.3
Actuated g/C Ratio	0.75			0.75	0.17	0.17
Clearance Time (s)	7.0			7.0	6.0	6.0
Vehicle Extension (s)	4.0			4.0	4.0	4.0
Lane Grp Cap (vph)	3798			3798	554	249
v/s Ratio Prot	c0.28			0.28	0.07	
v/s Ratio Perm						c0.09
v/c Ratio	0.38			0.38	0.38	0.51
Uniform Delay, d1	4.5			4.4	36.6	37.5
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.1			0.1	0.6	2.4
Delay (s)	4.6			4.5	37.2	39.9
Level of Service	A			A	D	D
Approach Delay (s)	4.6			4.5	38.3	
Approach LOS	A			A	D	

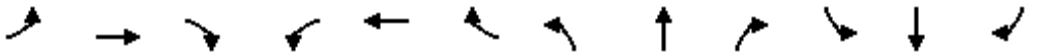
Intersection Summary			
HCM 2000 Control Delay	8.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	58.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	146	1686	194	82	1442	247	200	271	156	338	305	161
v/c Ratio	0.67	0.67	0.23	0.50	0.59	0.30	0.55	0.56	0.44	0.77	0.41	0.35
Control Delay	32.8	30.3	12.9	29.8	29.8	12.6	37.6	60.7	11.6	46.6	48.5	8.0
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	32.8	30.3	12.9	29.8	29.8	12.6	37.6	60.7	11.6	46.6	48.5	8.0
Queue Length 50th (m)	18.7	131.6	15.2	10.1	108.8	17.5	41.7	39.4	0.0	77.3	40.8	0.0
Queue Length 95th (m)	42.1	185.4	38.3	26.7	156.9	45.9	53.8	52.9	20.2	92.8	52.2	18.0
Internal Link Dist (m)		388.6			329.5			288.1			373.4	
Turn Bay Length (m)	220.0		55.0	230.0		65.0	130.0		95.0	115.0		65.0
Base Capacity (vph)	289	2507	828	189	2429	828	572	1081	592	519	1064	588
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	0.51	0.67	0.23	0.43	0.59	0.30	0.35	0.25	0.26	0.65	0.29	0.27

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	146	1686	194	82	1442	247	200	271	156	338	305	161
Future Volume (vph)	146	1686	194	82	1442	247	200	271	156	338	305	161
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.95	1.00	1.00	0.95	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)	1770	5085	1583	1770	5085	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.10	1.00	1.00	0.07	1.00	1.00	0.57	1.00	1.00	0.28	1.00	1.00
Satd. Flow (perm)	183	5085	1583	128	5085	1583	1054	3539	1583	526	3539	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	146	1686	194	82	1442	247	200	271	156	338	305	161
RTOR Reduction (vph)	0	0	48	0	0	72	0	0	135	0	0	127
Lane Group Flow (vph)	146	1686	146	82	1442	175	200	271	21	338	305	34
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		4
Actuated Green, G (s)	76.5	66.2	66.2	72.1	64.0	64.0	33.3	16.1	16.1	47.8	26.6	26.6
Effective Green, g (s)	76.5	69.1	69.1	72.1	66.9	66.9	33.3	19.1	19.1	47.8	29.6	29.6
Actuated g/C Ratio	0.55	0.49	0.49	0.51	0.48	0.48	0.24	0.14	0.14	0.34	0.21	0.21
Clearance Time (s)	4.0	6.9	6.9	4.0	6.9	6.9	4.0	7.0	7.0	4.0	7.0	7.0
Vehicle Extension (s)	2.0	5.5	5.5	2.0	8.0	8.0	2.0	3.0	3.0	2.0	3.0	3.0
Lane Grp Cap (vph)	216	2509	781	160	2429	756	338	482	215	425	748	334
v/s Ratio Prot	c0.05	c0.33		0.03	0.28		0.07	0.08		c0.16	0.09	
v/s Ratio Perm	0.32		0.09	0.23		0.11	0.07		0.01	c0.11		0.02
v/c Ratio	0.68	0.67	0.19	0.51	0.59	0.23	0.59	0.56	0.10	0.80	0.41	0.10
Uniform Delay, d1	21.0	26.9	19.8	22.3	26.6	21.5	45.8	56.5	52.9	38.1	47.6	44.5
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	6.4	1.5	0.5	1.2	1.0	0.7	1.8	1.5	0.2	9.3	0.4	0.1
Delay (s)	27.5	28.3	20.3	23.5	27.6	22.1	47.7	58.0	53.1	47.4	48.0	44.6
Level of Service	C	C	C	C	C	C	D	E	D	D	D	D
Approach Delay (s)		27.5			26.7			53.5			47.1	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	33.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	78.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Junctions 10

ARCADY 10 - Roundabout Module

Filename: Import of Arcady.j10
Path: R:\2021\215810 - Youssef-Coptic Church TIS\08 Design\11 Transportation Planning\ARCADY
Report generation date: 2022-01-10 2:46:51 PM

»2021, PM
»2021, Saturday
»2021, Sunday
»2025, PM
»2025, Saturday
»2025, Sunday
»2030 Future Total, PM
»2030 Future Total, Saturday
»2030 Future Total, Sunday
»2035 Future Total, PM
»2035 Future Total, Saturday
»2035 Future Total, Sunday

Summary of junction performance

	PM									Saturday								Sunday								
	Set ID	Queue (Veh)	95% Queue (Veh)	Delay (s)	RFC	LOS	Junction Delay (s)	Junction LOS	Network Residual Capacity	Set ID	Queue (Veh)	95% Queue (Veh)	Delay (s)	RFC	LOS	Junction Delay (s)	Junction LOS	Network Residual Capacity	Set ID	Queue (Veh)	95% Queue (Veh)	Delay (s)	RFC	LOS	Junction Delay (s)	Junction LOS	Network Residual Capacity
	2021																										
Arm 1	D1	0.0	0.5	1.84	0.04	A	1.79	A	651 % [Arm 4]	D2	0.1	0.5	1.78	0.06	A	1.83	A	462 % [Arm 2]	D3	0.1	0.5	1.78	0.06	A	1.83	A	462 % [Arm 2]
Arm 2		0.1	0.5	1.77	0.08	A					0.2	0.5	1.91	0.14	A					0.2	0.5	1.91	0.14	A			
Arm 3		0.0	0.5	1.75	0.04	A					0.0	0.5	1.72	0.04	A					0.0	0.5	1.72	0.04	A			
Arm 4		0.1	0.5	1.81	0.11	A					0.2	0.5	1.79	0.13	A					0.2	0.5	1.79	0.13	A			
	2025																										
Arm 1	D4	0.1	0.5	1.87	0.05	A	1.82	A	582 % [Arm 4]	D5	0.1	0.5	1.80	0.06	A	1.86	A	412 % [Arm 2]	D6	0.1	0.5	1.80	0.06	A	1.86	A	412 % [Arm 2]
Arm 2		0.1	0.5	1.79	0.09	A					0.2	0.5	1.95	0.16	A					0.2	0.5	1.95	0.16	A			
Arm 3		0.1	0.5	1.77	0.05	A					0.0	0.5	1.74	0.04	A					0.0	0.5	1.74	0.04	A			
Arm 4		0.1	0.5	1.84	0.12	A					0.2	0.5	1.82	0.15	A					0.2	0.5	1.82	0.15	A			
	2030 Future Total																										
Arm 1	D7	0.6	2.6	3.18	0.36	A	2.86	A	96 % [Arm 1]	D8	0.4	1.6	2.65	0.30	A	2.62	A	125 % [Arm 2]	D9	0.4	1.4	2.69	0.29	A	2.69	A	101 % [Arm 2]
Arm 2		0.3	1.3	2.69	0.25	A					0.4	1.7	2.77	0.31	A					0.5	1.9	3.02	0.32	A			
Arm 3		0.3	1.0	2.44	0.21	A					0.3	1.4	2.48	0.26	A					0.3	0.9	2.52	0.21	A			
Arm 4		0.6	2.8	2.93	0.38	A					0.5	1.9	2.56	0.32	A					0.5	2.4	2.52	0.35	A			
	2035 Future Total																										
Arm 1	D10	0.5	2.5	2.91	0.35	A	2.71	A	98 % [Arm 1]	D11	0.5	2.5	2.79	0.35	A	2.75	A	101 % [Arm 2]	D12	0.4	1.2	2.64	0.28	A	2.71	A	98 % [Arm 2]
Arm 2		0.3	1.3	2.53	0.25	A					0.5	2.5	2.87	0.35	A					0.5	2.1	2.92	0.33	A			
Arm 3		0.3	1.1	2.33	0.22	A					0.4	1.2	2.57	0.29	A					0.3	1.2	2.58	0.23	A			
Arm 4		0.7	2.8	2.84	0.40	A					0.6	2.6	2.72	0.36	A					0.6	2.7	2.66	0.37	A			

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Junction LOS and Junction Delay are demand-weighted averages. Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

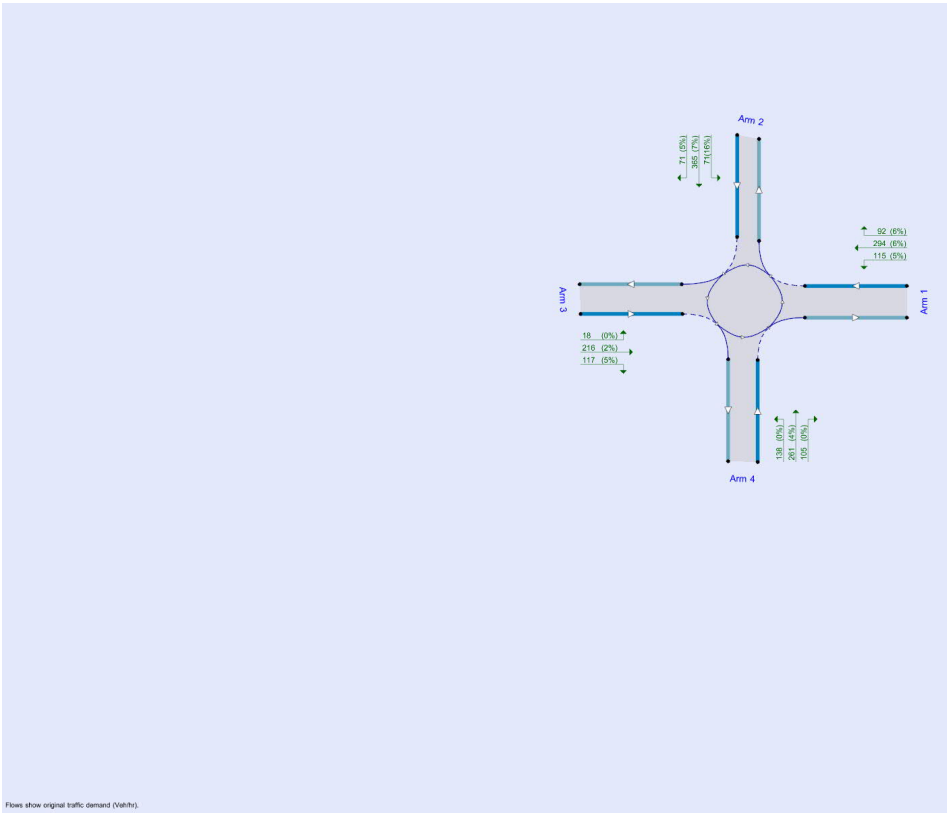
File summary

File Description

Title	
Location	
Site number	
Date	2020-11-20
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	RVAINT\arcady
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	Veh	Veh	perHour	s	-Min	perMin



The junction diagram reflects the last run of Junctions.

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Show lane queues in feet / metres	Show all PICADY stream intercepts	Calculate residual capacity	Residual capacity criteria type	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)	Use iterations with HCM roundabouts	Max number of iterations for roundabouts
5.75	✓				✓	Delay	0.85	36.00	20.00		500

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2021	PM	ONE HOUR	00:00	01:30	15	✓
D2	2021	Saturday	ONE HOUR	00:00	01:30	15	✓
D3	2021	Sunday	ONE HOUR	00:00	01:30	15	✓
D4	2025	PM	ONE HOUR	00:00	01:30	15	✓
D5	2025	Saturday	ONE HOUR	00:00	01:30	15	✓
D6	2025	Sunday	ONE HOUR	00:00	01:30	15	✓
D7	2030 Future Total	PM	ONE HOUR	00:00	01:30	15	✓
D8	2030 Future Total	Saturday	ONE HOUR	00:00	01:30	15	✓
D9	2030 Future Total	Sunday	ONE HOUR	00:00	01:30	15	✓
D10	2035 Future Total	PM	ONE HOUR	00:00	01:30	15	✓
D11	2035 Future Total	Saturday	ONE HOUR	00:00	01:30	15	✓
D12	2035 Future Total	Sunday	ONE HOUR	00:00	01:30	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

2021, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Burnhamthorpe Road at Ninth Line	Standard Roundabout		1, 2, 3, 4	1.79	A

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Right	Normal/unknown	651	Arm 4	1.79	A

Arms

Arms

Arm	Name	Description	No give-way line
1	Burnhamthorpe Road WB		
2	Ninth Line SB		
3	Burnhamthorpe Road EB		
4	Ninth Line NB		

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Entry only	Exit only
1	8.00	8.00	0.0	30.0	60.0	30.0		
2	8.00	8.00	0.0	30.0	60.0	30.0		
3	8.00	8.00	0.0	30.0	60.0	30.0		
4	8.00	8.00	0.0	30.0	60.0	30.0		

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.694	2464
2	0.694	2464
3	0.694	2464
4	0.694	2464

The slope and intercept shown above include any corrections and adjustments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2021	PM	ONE HOUR	00:00	01:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	82	100.000
2		ONE HOUR	✓	165	100.000
3		ONE HOUR	✓	85	100.000
4		ONE HOUR	✓	214	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1	2	3	4
From	1	0	37	25	20
	2	23	0	4	138
	3	42	8	0	35
	4	27	176	11	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	20	8	5
	2	26	0	0	7
	3	10	0	0	6
	4	0	9	9	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.04	1.84	0.0	0.5	A	75	113
2	0.08	1.77	0.1	0.5	A	151	227
3	0.04	1.75	0.0	0.5	A	78	117
4	0.11	1.81	0.1	0.5	A	196	295

Main Results for each time segment

00:00 - 00:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	62	15	147	2088	0.030	62	69	0.0	0.0	1.775	A
2	124	31	42	2222	0.056	124	166	0.0	0.1	1.715	A
3	64	16	136	2198	0.029	64	30	0.0	0.0	1.686	A
4	161	40	55	2244	0.072	161	145	0.0	0.1	1.727	A

00:15 - 00:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	74	18	175	2069	0.036	74	83	0.0	0.0	1.803	A
2	148	37	50	2216	0.067	148	199	0.1	0.1	1.740	A
3	76	19	163	2179	0.035	76	36	0.0	0.0	1.711	A
4	192	48	66	2236	0.086	192	173	0.1	0.1	1.760	A

00:30 - 00:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	90	23	215	2043	0.044	90	101	0.0	0.0	1.842	A
2	182	45	62	2208	0.082	182	243	0.1	0.1	1.775	A
3	94	23	199	2153	0.043	94	44	0.0	0.0	1.747	A
4	236	59	80	2225	0.106	236	212	0.1	0.1	1.808	A

00:45 - 01:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	90	23	215	2043	0.044	90	101	0.0	0.0	1.842	A
2	182	45	62	2208	0.082	182	243	0.1	0.1	1.775	A
3	94	23	199	2153	0.043	94	44	0.0	0.0	1.747	A
4	236	59	80	2225	0.106	236	212	0.1	0.1	1.808	A

01:00 - 01:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	74	18	175	2069	0.036	74	83	0.0	0.0	1.806	A
2	148	37	50	2216	0.067	148	199	0.1	0.1	1.740	A
3	76	19	163	2179	0.035	76	36	0.0	0.0	1.711	A
4	192	48	66	2236	0.086	192	174	0.1	0.1	1.761	A

01:15 - 01:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	62	15	147	2088	0.030	62	69	0.0	0.0	1.775	A
2	124	31	42	2222	0.056	124	166	0.1	0.1	1.715	A
3	64	16	136	2197	0.029	64	30	0.0	0.0	1.689	A
4	161	40	55	2244	0.072	161	145	0.1	0.1	1.730	A

Queue Variation Results for each time segment

00:00 - 00:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.03	0.00	0.00	0.03	0.03			N/A	N/A
2	0.06	0.00	0.00	0.06	0.06			N/A	N/A
3	0.03	0.00	0.00	0.03	0.03			N/A	N/A
4	0.08	0.00	0.00	0.08	0.08			N/A	N/A

00:15 - 00:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.04	0.03	0.25	0.45	0.48			N/A	N/A
2	0.07	0.03	0.25	0.45	0.48			N/A	N/A
3	0.04	0.03	0.25	0.45	0.48			N/A	N/A
4	0.09	0.03	0.26	0.47	0.49			N/A	N/A

00:30 - 00:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.05	0.03	0.25	0.45	0.48			N/A	N/A
2	0.09	0.03	0.26	0.47	0.49			N/A	N/A
3	0.05	0.03	0.25	0.45	0.48			N/A	N/A
4	0.12	0.03	0.26	0.46	0.49			N/A	N/A

00:45 - 01:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.05	0.00	0.00	0.05	0.05			N/A	N/A
2	0.09	0.00	0.00	0.09	0.09			N/A	N/A
3	0.05	0.00	0.00	0.05	0.05			N/A	N/A
4	0.12	0.00	0.00	0.12	0.12			N/A	N/A

01:00 - 01:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.04	0.00	0.00	0.04	0.04			N/A	N/A
2	0.07	0.00	0.00	0.07	0.07			N/A	N/A
3	0.04	0.00	0.00	0.04	0.04			N/A	N/A
4	0.09	0.00	0.00	0.09	0.09			N/A	N/A

01:15 - 01:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.03	0.00	0.00	0.03	0.03			N/A	N/A
2	0.06	0.00	0.00	0.06	0.06			N/A	N/A
3	0.03	0.00	0.00	0.03	0.03			N/A	N/A
4	0.08	0.00	0.00	0.08	0.08			N/A	N/A

2021, Saturday

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Burnhamthorpe Road at Ninth Line	Standard Roundabout		1, 2, 3, 4	1.83	A

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Right	Normal/unknown	462	Arm 2	1.83	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2021	Saturday	ONE HOUR	00:00	01:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	110	100.000
2		ONE HOUR	✓	287	100.000
3		ONE HOUR	✓	69	100.000
4		ONE HOUR	✓	279	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1	2	3	4
From	1	0	36	53	21
	2	43	0	20	224
	3	41	9	0	19
	4	44	205	30	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	6	6	5
	2	16	0	5	7
	3	2	0	0	5
	4	0	4	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.06	1.78	0.1	0.5	A	101	151
2	0.14	1.91	0.2	0.5	A	263	395
3	0.04	1.72	0.0	0.5	A	63	95
4	0.13	1.79	0.2	0.5	A	256	384

Main Results for each time segment

00:00 - 00:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	83	21	183	2204	0.038	83	96	0.0	0.0	1.696	A
2	216	54	78	2224	0.097	216	188	0.0	0.1	1.791	A
3	52	13	216	2244	0.023	52	77	0.0	0.0	1.641	A
4	210	53	70	2342	0.090	210	198	0.0	0.1	1.687	A

00:15 - 00:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	99	25	219	2180	0.045	99	115	0.0	0.0	1.729	A
2	258	65	93	2214	0.117	258	225	0.1	0.1	1.839	A
3	62	16	259	2213	0.028	62	93	0.0	0.0	1.673	A
4	251	63	84	2332	0.108	251	237	0.1	0.1	1.728	A

00:30 - 00:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	121	30	269	2146	0.056	121	141	0.0	0.1	1.776	A
2	316	79	114	2200	0.144	316	275	0.1	0.2	1.909	A
3	76	19	317	2170	0.035	76	113	0.0	0.0	1.718	A
4	307	77	102	2318	0.132	307	291	0.1	0.2	1.788	A

00:45 - 01:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	121	30	269	2146	0.056	121	141	0.1	0.1	1.776	A
2	316	79	115	2200	0.144	316	275	0.2	0.2	1.909	A
3	76	19	317	2170	0.035	76	113	0.0	0.0	1.718	A
4	307	77	102	2318	0.132	307	291	0.2	0.2	1.789	A

01:00 - 01:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	99	25	219	2180	0.045	99	115	0.1	0.0	1.732	A
2	258	65	94	2214	0.117	258	225	0.2	0.1	1.839	A
3	62	16	259	2212	0.028	62	93	0.0	0.0	1.673	A
4	251	63	84	2332	0.108	251	237	0.2	0.1	1.729	A

01:15 - 01:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	83	21	184	2204	0.038	83	96	0.0	0.0	1.696	A
2	216	54	78	2224	0.097	216	188	0.1	0.1	1.794	A
3	52	13	217	2243	0.023	52	78	0.0	0.0	1.642	A
4	210	53	70	2342	0.090	210	199	0.1	0.1	1.690	A

Queue Variation Results for each time segment

00:00 - 00:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.04	0.00	0.00	0.04	0.04			N/A	N/A
2	0.11	0.00	0.00	0.11	0.11			N/A	N/A
3	0.02	0.00	0.00	0.02	0.02			N/A	N/A
4	0.10	0.00	0.00	0.10	0.10			N/A	N/A

00:15 - 00:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.05	0.03	0.25	0.45	0.48			N/A	N/A
2	0.13	0.00	0.00	0.13	0.13			N/A	N/A
3	0.03	0.03	0.25	0.45	0.48			N/A	N/A
4	0.12	0.00	0.00	0.12	0.12			N/A	N/A

00:30 - 00:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.06	0.03	0.26	0.46	0.49			N/A	N/A
2	0.17	0.03	0.25	0.46	0.48			N/A	N/A
3	0.04	0.00	0.00	0.04	0.04			N/A	N/A
4	0.15	0.03	0.25	0.46	0.48			N/A	N/A

00:45 - 01:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.06	0.00	0.00	0.06	0.06			N/A	N/A
2	0.17	0.00	0.00	0.17	0.17			N/A	N/A
3	0.04	0.00	0.00	0.04	0.04			N/A	N/A
4	0.15	0.00	0.00	0.15	0.15			N/A	N/A

01:00 - 01:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.05	0.00	0.00	0.05	0.05			N/A	N/A
2	0.13	0.00	0.00	0.13	0.13			N/A	N/A
3	0.03	0.00	0.00	0.03	0.03			N/A	N/A
4	0.12	0.00	0.00	0.12	0.12			N/A	N/A

01:15 - 01:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.04	0.00	0.00	0.04	0.04			N/A	N/A
2	0.11	0.00	0.00	0.11	0.11			N/A	N/A
3	0.02	0.00	0.00	0.02	0.02			N/A	N/A
4	0.10	0.00	0.00	0.10	0.10			N/A	N/A

2021, Sunday

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Burnhamthorpe Road at Ninth Line	Standard Roundabout		1, 2, 3, 4	1.83	A

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Right	Normal/unknown	462	Arm 2	1.83	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2021	Sunday	ONE HOUR	00:00	01:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	110	100.000
2		ONE HOUR	✓	287	100.000
3		ONE HOUR	✓	69	100.000
4		ONE HOUR	✓	279	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1	2	3	4
From	1	0	36	53	21
	2	43	0	20	224
	3	41	9	0	19
	4	44	205	30	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	6	6	5
	2	16	0	5	7
	3	2	0	0	5
	4	0	4	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.06	1.78	0.1	0.5	A	101	151
2	0.14	1.91	0.2	0.5	A	263	395
3	0.04	1.72	0.0	0.5	A	63	95
4	0.13	1.79	0.2	0.5	A	256	384

Main Results for each time segment

00:00 - 00:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	83	21	183	2204	0.038	83	96	0.0	0.0	1.696	A
2	216	54	78	2224	0.097	216	188	0.0	0.1	1.791	A
3	52	13	216	2244	0.023	52	77	0.0	0.0	1.641	A
4	210	53	70	2342	0.090	210	198	0.0	0.1	1.687	A

00:15 - 00:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	99	25	219	2180	0.045	99	115	0.0	0.0	1.729	A
2	258	65	93	2214	0.117	258	225	0.1	0.1	1.839	A
3	62	16	259	2213	0.028	62	93	0.0	0.0	1.673	A
4	251	63	84	2332	0.108	251	237	0.1	0.1	1.728	A

00:30 - 00:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	121	30	269	2146	0.056	121	141	0.0	0.1	1.776	A
2	316	79	114	2200	0.144	316	275	0.1	0.2	1.909	A
3	76	19	317	2170	0.035	76	113	0.0	0.0	1.718	A
4	307	77	102	2318	0.132	307	291	0.1	0.2	1.788	A

00:45 - 01:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	121	30	269	2146	0.056	121	141	0.1	0.1	1.776	A
2	316	79	115	2200	0.144	316	275	0.2	0.2	1.909	A
3	76	19	317	2170	0.035	76	113	0.0	0.0	1.718	A
4	307	77	102	2318	0.132	307	291	0.2	0.2	1.789	A

01:00 - 01:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	99	25	219	2180	0.045	99	115	0.1	0.0	1.732	A
2	258	65	94	2214	0.117	258	225	0.2	0.1	1.839	A
3	62	16	259	2212	0.028	62	93	0.0	0.0	1.673	A
4	251	63	84	2332	0.108	251	237	0.2	0.1	1.729	A

01:15 - 01:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	83	21	184	2204	0.038	83	96	0.0	0.0	1.696	A
2	216	54	78	2224	0.097	216	188	0.1	0.1	1.794	A
3	52	13	217	2243	0.023	52	78	0.0	0.0	1.642	A
4	210	53	70	2342	0.090	210	199	0.1	0.1	1.690	A

Queue Variation Results for each time segment

00:00 - 00:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.04	0.00	0.00	0.04	0.04			N/A	N/A
2	0.11	0.00	0.00	0.11	0.11			N/A	N/A
3	0.02	0.00	0.00	0.02	0.02			N/A	N/A
4	0.10	0.00	0.00	0.10	0.10			N/A	N/A

00:15 - 00:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.05	0.03	0.25	0.45	0.48			N/A	N/A
2	0.13	0.00	0.00	0.13	0.13			N/A	N/A
3	0.03	0.03	0.25	0.45	0.48			N/A	N/A
4	0.12	0.00	0.00	0.12	0.12			N/A	N/A

00:30 - 00:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.06	0.03	0.26	0.46	0.49			N/A	N/A
2	0.17	0.03	0.25	0.46	0.48			N/A	N/A
3	0.04	0.00	0.00	0.04	0.04			N/A	N/A
4	0.15	0.03	0.25	0.46	0.48			N/A	N/A

00:45 - 01:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.06	0.00	0.00	0.06	0.06			N/A	N/A
2	0.17	0.00	0.00	0.17	0.17			N/A	N/A
3	0.04	0.00	0.00	0.04	0.04			N/A	N/A
4	0.15	0.00	0.00	0.15	0.15			N/A	N/A

01:00 - 01:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.05	0.00	0.00	0.05	0.05			N/A	N/A
2	0.13	0.00	0.00	0.13	0.13			N/A	N/A
3	0.03	0.00	0.00	0.03	0.03			N/A	N/A
4	0.12	0.00	0.00	0.12	0.12			N/A	N/A

01:15 - 01:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.04	0.00	0.00	0.04	0.04			N/A	N/A
2	0.11	0.00	0.00	0.11	0.11			N/A	N/A
3	0.02	0.00	0.00	0.02	0.02			N/A	N/A
4	0.10	0.00	0.00	0.10	0.10			N/A	N/A

2025, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Burnhamthorpe Road at Ninth Line	Standard Roundabout		1, 2, 3, 4	1.82	A

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Right	Normal/unknown	582	Arm 4	1.82	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2025	PM	ONE HOUR	00:00	01:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	91	100.000
2		ONE HOUR	✓	181	100.000
3		ONE HOUR	✓	94	100.000
4		ONE HOUR	✓	236	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1	2	3	4
From	1	0	41	28	22
	2	25	0	4	152
	3	46	9	0	39
	4	30	194	12	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	20	8	5
	2	26	0	0	7
	3	10	0	0	6
	4	0	9	9	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.05	1.87	0.1	0.5	A	84	125
2	0.09	1.79	0.1	0.5	A	166	249
3	0.05	1.77	0.1	0.5	A	86	129
4	0.12	1.84	0.1	0.5	A	217	325

Main Results for each time segment

00:00 - 00:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	69	17	162	2078	0.033	68	76	0.0	0.0	1.790	A
2	136	34	47	2219	0.061	136	183	0.0	0.1	1.727	A
3	71	18	150	2189	0.032	71	33	0.0	0.0	1.698	A
4	178	44	60	2240	0.079	177	160	0.0	0.1	1.744	A

00:15 - 00:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	82	20	193	2057	0.040	82	91	0.0	0.0	1.821	A
2	163	41	56	2213	0.074	163	219	0.1	0.1	1.755	A
3	85	21	179	2168	0.039	84	40	0.0	0.0	1.726	A
4	212	53	72	2231	0.095	212	191	0.1	0.1	1.781	A

00:30 - 00:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	100	25	237	2028	0.049	100	111	0.0	0.1	1.866	A
2	199	50	68	2204	0.090	199	269	0.1	0.1	1.794	A
3	103	26	219	2140	0.048	103	48	0.0	0.1	1.767	A
4	260	65	88	2220	0.117	260	234	0.1	0.1	1.836	A

00:45 - 01:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	100	25	237	2028	0.049	100	111	0.1	0.1	1.866	A
2	199	50	68	2204	0.090	199	269	0.1	0.1	1.794	A
3	103	26	219	2140	0.048	103	48	0.1	0.1	1.767	A
4	260	65	88	2220	0.117	260	235	0.1	0.1	1.836	A

01:00 - 01:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	82	20	193	2057	0.040	82	91	0.1	0.0	1.824	A
2	163	41	56	2213	0.074	163	219	0.1	0.1	1.758	A
3	85	21	179	2168	0.039	85	40	0.1	0.0	1.727	A
4	212	53	72	2231	0.095	212	192	0.1	0.1	1.784	A

01:15 - 01:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	69	17	162	2078	0.033	69	76	0.0	0.0	1.790	A
2	136	34	47	2219	0.061	136	184	0.1	0.1	1.730	A
3	71	18	150	2188	0.032	71	33	0.0	0.0	1.701	A
4	178	44	60	2240	0.079	178	160	0.1	0.1	1.747	A

Queue Variation Results for each time segment

00:00 - 00:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.03	0.00	0.00	0.03	0.03			N/A	N/A
2	0.07	0.00	0.00	0.07	0.07			N/A	N/A
3	0.03	0.00	0.00	0.03	0.03			N/A	N/A
4	0.09	0.00	0.00	0.09	0.09			N/A	N/A

00:15 - 00:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.04	0.03	0.25	0.45	0.48			N/A	N/A
2	0.08	0.03	0.25	0.45	0.48			N/A	N/A
3	0.04	0.03	0.25	0.45	0.48			N/A	N/A
4	0.10	0.03	0.25	0.45	0.48			N/A	N/A

00:30 - 00:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.05	0.03	0.25	0.46	0.48			N/A	N/A
2	0.10	0.03	0.26	0.47	0.49			N/A	N/A
3	0.05	0.03	0.25	0.46	0.48			N/A	N/A
4	0.13	0.03	0.26	0.46	0.49			N/A	N/A

00:45 - 01:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.05	0.00	0.00	0.05	0.05			N/A	N/A
2	0.10	0.00	0.00	0.10	0.10			N/A	N/A
3	0.05	0.00	0.00	0.05	0.05			N/A	N/A
4	0.13	0.00	0.00	0.13	0.13			N/A	N/A

01:00 - 01:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.04	0.00	0.00	0.04	0.04			N/A	N/A
2	0.08	0.00	0.00	0.08	0.08			N/A	N/A
3	0.04	0.00	0.00	0.04	0.04			N/A	N/A
4	0.11	0.00	0.00	0.11	0.11			N/A	N/A

01:15 - 01:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.03	0.00	0.00	0.03	0.03			N/A	N/A
2	0.07	0.00	0.00	0.07	0.07			N/A	N/A
3	0.03	0.00	0.00	0.03	0.03			N/A	N/A
4	0.09	0.00	0.00	0.09	0.09			N/A	N/A

2025, Saturday

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Burnhamthorpe Road at Ninth Line	Standard Roundabout		1, 2, 3, 4	1.86	A

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Right	Normal/unknown	412	Arm 2	1.86	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	2025	Saturday	ONE HOUR	00:00	01:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	121	100.000
2		ONE HOUR	✓	315	100.000
3		ONE HOUR	✓	76	100.000
4		ONE HOUR	✓	307	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1	2	3	4
From	1	0	40	58	23
	2	47	0	22	246
	3	45	10	0	21
	4	48	226	33	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	6	6	5
	2	16	0	5	7
	3	2	0	0	5
	4	0	4	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.06	1.80	0.1	0.5	A	111	167
2	0.16	1.95	0.2	0.5	A	289	434
3	0.04	1.74	0.0	0.5	A	70	105
4	0.15	1.82	0.2	0.5	A	282	423

Main Results for each time segment

00:00 - 00:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	91	23	202	2191	0.042	91	105	0.0	0.0	1.713	A
2	237	59	86	2220	0.107	237	207	0.0	0.1	1.815	A
3	57	14	237	2228	0.026	57	85	0.0	0.0	1.657	A
4	231	58	77	2337	0.099	231	218	0.0	0.1	1.708	A

00:15 - 00:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	109	27	242	2164	0.050	109	126	0.0	0.1	1.750	A
2	283	71	102	2208	0.128	283	248	0.1	0.1	1.868	A
3	68	17	284	2194	0.031	68	102	0.0	0.0	1.692	A
4	276	69	92	2326	0.119	276	261	0.1	0.1	1.755	A

00:30 - 00:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	133	33	296	2128	0.063	133	154	0.1	0.1	1.804	A
2	347	87	125	2193	0.158	347	304	0.1	0.2	1.949	A
3	84	21	348	2147	0.039	84	124	0.0	0.0	1.743	A
4	338	85	112	2311	0.146	338	319	0.1	0.2	1.823	A

00:45 - 01:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	133	33	296	2128	0.063	133	154	0.1	0.1	1.804	A
2	347	87	126	2193	0.158	347	304	0.2	0.2	1.949	A
3	84	21	348	2147	0.039	84	124	0.0	0.0	1.743	A
4	338	85	112	2311	0.146	338	319	0.2	0.2	1.823	A

01:00 - 01:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	109	27	242	2164	0.050	109	126	0.1	0.1	1.753	A
2	283	71	103	2208	0.128	283	248	0.2	0.1	1.869	A
3	68	17	284	2194	0.031	68	102	0.0	0.0	1.695	A
4	276	69	92	2326	0.119	276	261	0.2	0.1	1.755	A

01:15 - 01:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	91	23	203	2191	0.042	91	105	0.1	0.0	1.713	A
2	237	59	86	2219	0.107	237	208	0.1	0.1	1.818	A
3	57	14	238	2228	0.026	57	85	0.0	0.0	1.657	A
4	231	58	77	2337	0.099	231	218	0.1	0.1	1.711	A

Queue Variation Results for each time segment

00:00 - 00:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.04	0.00	0.00	0.04	0.04			N/A	N/A
2	0.12	0.00	0.00	0.12	0.12			N/A	N/A
3	0.03	0.00	0.00	0.03	0.03			N/A	N/A
4	0.11	0.00	0.00	0.11	0.11			N/A	N/A

00:15 - 00:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.05	0.03	0.25	0.45	0.48			N/A	N/A
2	0.15	0.00	0.00	0.15	0.15			N/A	N/A
3	0.03	0.03	0.25	0.45	0.48			N/A	N/A
4	0.13	0.00	0.00	0.13	0.13			N/A	N/A

00:30 - 00:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.07	0.03	0.26	0.47	0.49			N/A	N/A
2	0.19	0.03	0.25	0.46	0.48			N/A	N/A
3	0.04	0.00	0.00	0.04	0.04			N/A	N/A
4	0.17	0.03	0.25	0.46	0.48			N/A	N/A

00:45 - 01:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.07	0.00	0.00	0.07	0.07			N/A	N/A
2	0.19	0.03	0.25	0.45	0.48			N/A	N/A
3	0.04	0.00	0.00	0.04	0.04			N/A	N/A
4	0.17	0.00	0.00	0.17	0.17			N/A	N/A

01:00 - 01:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.05	0.00	0.00	0.05	0.05			N/A	N/A
2	0.15	0.00	0.00	0.15	0.15			N/A	N/A
3	0.03	0.00	0.00	0.03	0.03			N/A	N/A
4	0.13	0.00	0.00	0.13	0.13			N/A	N/A

01:15 - 01:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.04	0.00	0.00	0.04	0.04			N/A	N/A
2	0.12	0.00	0.00	0.12	0.12			N/A	N/A
3	0.03	0.00	0.00	0.03	0.03			N/A	N/A
4	0.11	0.00	0.00	0.11	0.11			N/A	N/A

2025, Sunday

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Burnhamthorpe Road at Ninth Line	Standard Roundabout		1, 2, 3, 4	1.86	A

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Right	Normal/unknown	412	Arm 2	1.86	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	2025	Sunday	ONE HOUR	00:00	01:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	121	100.000
2		ONE HOUR	✓	315	100.000
3		ONE HOUR	✓	76	100.000
4		ONE HOUR	✓	307	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1	2	3	4
From	1	0	40	58	23
	2	47	0	22	246
	3	45	10	0	21
	4	48	226	33	0

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	6	6	5
	2	16	0	5	7
	3	2	0	0	5
	4	0	4	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.06	1.80	0.1	0.5	A	111	167
2	0.16	1.95	0.2	0.5	A	289	434
3	0.04	1.74	0.0	0.5	A	70	105
4	0.15	1.82	0.2	0.5	A	282	423

Main Results for each time segment

00:00 - 00:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	91	23	202	2191	0.042	91	105	0.0	0.0	1.713	A
2	237	59	86	2220	0.107	237	207	0.0	0.1	1.815	A
3	57	14	237	2228	0.026	57	85	0.0	0.0	1.657	A
4	231	58	77	2337	0.099	231	218	0.0	0.1	1.708	A

00:15 - 00:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	109	27	242	2164	0.050	109	126	0.0	0.1	1.750	A
2	283	71	102	2208	0.128	283	248	0.1	0.1	1.868	A
3	68	17	284	2194	0.031	68	102	0.0	0.0	1.692	A
4	276	69	92	2326	0.119	276	261	0.1	0.1	1.755	A

00:30 - 00:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	133	33	296	2128	0.063	133	154	0.1	0.1	1.804	A
2	347	87	125	2193	0.158	347	304	0.1	0.2	1.949	A
3	84	21	348	2147	0.039	84	124	0.0	0.0	1.743	A
4	338	85	112	2311	0.146	338	319	0.1	0.2	1.823	A

00:45 - 01:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	133	33	296	2128	0.063	133	154	0.1	0.1	1.804	A
2	347	87	126	2193	0.158	347	304	0.2	0.2	1.949	A
3	84	21	348	2147	0.039	84	124	0.0	0.0	1.743	A
4	338	85	112	2311	0.146	338	319	0.2	0.2	1.823	A

01:00 - 01:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	109	27	242	2164	0.050	109	126	0.1	0.1	1.753	A
2	283	71	103	2208	0.128	283	248	0.2	0.1	1.869	A
3	68	17	284	2194	0.031	68	102	0.0	0.0	1.695	A
4	276	69	92	2326	0.119	276	261	0.2	0.1	1.755	A

01:15 - 01:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	91	23	203	2191	0.042	91	105	0.1	0.0	1.713	A
2	237	59	86	2219	0.107	237	208	0.1	0.1	1.818	A
3	57	14	238	2228	0.026	57	85	0.0	0.0	1.657	A
4	231	58	77	2337	0.099	231	218	0.1	0.1	1.711	A

Queue Variation Results for each time segment

00:00 - 00:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.04	0.00	0.00	0.04	0.04			N/A	N/A
2	0.12	0.00	0.00	0.12	0.12			N/A	N/A
3	0.03	0.00	0.00	0.03	0.03			N/A	N/A
4	0.11	0.00	0.00	0.11	0.11			N/A	N/A

00:15 - 00:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.05	0.03	0.25	0.45	0.48			N/A	N/A
2	0.15	0.00	0.00	0.15	0.15			N/A	N/A
3	0.03	0.03	0.25	0.45	0.48			N/A	N/A
4	0.13	0.00	0.00	0.13	0.13			N/A	N/A

00:30 - 00:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.07	0.03	0.26	0.47	0.49			N/A	N/A
2	0.19	0.03	0.25	0.46	0.48			N/A	N/A
3	0.04	0.00	0.00	0.04	0.04			N/A	N/A
4	0.17	0.03	0.25	0.46	0.48			N/A	N/A

00:45 - 01:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.07	0.00	0.00	0.07	0.07			N/A	N/A
2	0.19	0.03	0.25	0.45	0.48			N/A	N/A
3	0.04	0.00	0.00	0.04	0.04			N/A	N/A
4	0.17	0.00	0.00	0.17	0.17			N/A	N/A

01:00 - 01:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.05	0.00	0.00	0.05	0.05			N/A	N/A
2	0.15	0.00	0.00	0.15	0.15			N/A	N/A
3	0.03	0.00	0.00	0.03	0.03			N/A	N/A
4	0.13	0.00	0.00	0.13	0.13			N/A	N/A

01:15 - 01:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.04	0.00	0.00	0.04	0.04			N/A	N/A
2	0.12	0.00	0.00	0.12	0.12			N/A	N/A
3	0.03	0.00	0.00	0.03	0.03			N/A	N/A
4	0.11	0.00	0.00	0.11	0.11			N/A	N/A

2030 Future Total, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Burnhamthorpe Road at Ninth Line	Standard Roundabout		1, 2, 3, 4	2.86	A

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Right	Normal/unknown	96	Arm 1	2.86	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D7	2030 Future Total	PM	ONE HOUR	00:00	01:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	573	100.000
2		ONE HOUR	✓	397	100.000
3		ONE HOUR	✓	363	100.000
4		ONE HOUR	✓	694	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1	2	3	4
From	1	0	155	333	85
	2	107	0	18	272
	3	246	25	0	92
	4	100	427	116	51

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	20	8	5
	2	26	0	0	7
	3	10	0	0	6
	4	0	9	9	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.36	3.18	0.6	2.6	A	526	789
2	0.25	2.69	0.3	1.3	A	364	546
3	0.21	2.44	0.3	1.0	A	333	500
4	0.38	2.93	0.6	2.8	A	637	955

Main Results for each time segment

00:00 - 00:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	431	108	465	1909	0.226	430	340	0.0	0.3	2.430	A
2	299	75	439	1912	0.156	298	456	0.0	0.2	2.230	A
3	273	68	387	2002	0.136	273	351	0.0	0.2	2.081	A
4	522	131	284	2092	0.250	521	375	0.0	0.3	2.289	A

00:15 - 00:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	515	129	556	1848	0.279	515	407	0.3	0.4	2.700	A
2	357	89	526	1854	0.192	357	545	0.2	0.2	2.403	A
3	326	82	463	1949	0.167	326	420	0.2	0.2	2.218	A
4	624	156	340	2051	0.304	623	449	0.3	0.4	2.522	A

00:30 - 00:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	631	158	681	1763	0.358	630	498	0.4	0.6	3.175	A
2	437	109	643	1776	0.246	437	668	0.2	0.3	2.688	A
3	400	100	567	1876	0.213	399	514	0.2	0.3	2.438	A
4	764	191	416	1995	0.383	763	550	0.4	0.6	2.922	A

00:45 - 01:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	631	158	682	1763	0.358	631	499	0.6	0.6	3.179	A
2	437	109	644	1776	0.246	437	668	0.3	0.3	2.689	A
3	400	100	567	1876	0.213	400	514	0.3	0.3	2.438	A
4	764	191	416	1994	0.383	764	551	0.6	0.6	2.925	A

01:00 - 01:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	515	129	557	1847	0.279	516	408	0.6	0.4	2.704	A
2	357	89	527	1854	0.193	357	546	0.3	0.2	2.407	A
3	326	82	463	1948	0.167	327	420	0.3	0.2	2.219	A
4	624	156	340	2050	0.304	625	450	0.6	0.4	2.527	A

01:15 - 01:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	431	108	466	1908	0.226	432	341	0.4	0.3	2.440	A
2	299	75	441	1911	0.156	299	457	0.2	0.2	2.233	A
3	273	68	388	2002	0.137	273	352	0.2	0.2	2.084	A
4	522	131	285	2091	0.250	523	377	0.4	0.3	2.297	A

Queue Variation Results for each time segment

00:00 - 00:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.29	0.00	0.00	0.29	0.29			N/A	N/A
2	0.18	0.00	0.00	0.18	0.18			N/A	N/A
3	0.16	0.00	0.00	0.16	0.16			N/A	N/A
4	0.33	0.00	0.00	0.33	0.33			N/A	N/A

00:15 - 00:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.38	0.00	0.00	0.38	0.38			N/A	N/A
2	0.24	0.00	0.00	0.24	0.24			N/A	N/A
3	0.20	0.00	0.00	0.20	0.20			N/A	N/A
4	0.44	0.00	0.00	0.44	0.44			N/A	N/A

00:30 - 00:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.55	0.03	0.25	0.55	0.55			N/A	N/A
2	0.33	0.03	0.25	0.45	0.48			N/A	N/A
3	0.27	0.03	0.25	0.45	0.48			N/A	N/A
4	0.62	0.03	0.25	0.62	0.62			N/A	N/A

00:45 - 01:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.56	0.03	0.30	1.40	2.61			N/A	N/A
2	0.33	0.03	0.32	1.07	1.31			N/A	N/A
3	0.27	0.03	0.28	0.50	0.96			N/A	N/A
4	0.62	0.03	0.29	1.19	2.78			N/A	N/A

01:00 - 01:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.39	0.00	0.00	0.39	0.39			N/A	N/A
2	0.24	0.00	0.00	0.24	0.24			N/A	N/A
3	0.20	0.00	0.00	0.20	0.20			N/A	N/A
4	0.44	0.00	0.00	0.44	0.44			N/A	N/A

01:15 - 01:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.29	0.00	0.00	0.29	0.29			N/A	N/A
2	0.19	0.00	0.00	0.19	0.19			N/A	N/A
3	0.16	0.00	0.00	0.16	0.16			N/A	N/A
4	0.33	0.00	0.00	0.33	0.33			N/A	N/A

2030 Future Total, Saturday

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Burnhamthorpe Road at Ninth Line	Standard Roundabout		1, 2, 3, 4	2.62	A

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Right	Normal/unknown	125	Arm 2	2.62	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D8	2030 Future Total	Saturday	ONE HOUR	00:00	01:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	533	100.000
2		ONE HOUR	✓	524	100.000
3		ONE HOUR	✓	462	100.000
4		ONE HOUR	✓	606	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1	2	3	4
From	1	0	120	347	66
	2	97	0	55	372
	3	305	25	0	132
	4	118	363	117	8

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	6	6	5
	2	16	0	5	7
	3	2	0	0	5
	4	0	4	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.30	2.65	0.4	1.6	A	489	734
2	0.31	2.77	0.4	1.7	A	481	721
3	0.26	2.48	0.3	1.4	A	424	636
4	0.32	2.56	0.5	1.9	A	556	834

Main Results for each time segment

00:00 - 00:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	401	100	385	2067	0.194	400	391	0.0	0.2	2.158	A
2	394	99	404	2001	0.197	394	382	0.0	0.2	2.238	A
3	348	87	408	2100	0.166	347	390	0.0	0.2	2.053	A
4	456	114	321	2178	0.210	455	434	0.0	0.3	2.089	A

00:15 - 00:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	479	120	461	2016	0.238	479	467	0.2	0.3	2.341	A
2	471	118	483	1948	0.242	471	456	0.2	0.3	2.436	A
3	415	104	488	2041	0.203	415	466	0.2	0.3	2.214	A
4	545	136	384	2133	0.255	544	519	0.3	0.3	2.266	A

00:30 - 00:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	587	147	564	1947	0.301	586	572	0.3	0.4	2.647	A
2	577	144	592	1876	0.308	576	559	0.3	0.4	2.770	A
3	509	127	597	1961	0.259	508	571	0.3	0.3	2.478	A
4	667	167	470	2072	0.322	667	636	0.3	0.5	2.563	A

00:45 - 01:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	587	147	565	1946	0.302	587	573	0.4	0.4	2.647	A
2	577	144	592	1876	0.308	577	559	0.4	0.4	2.771	A
3	509	127	598	1961	0.259	509	571	0.3	0.3	2.478	A
4	667	167	470	2071	0.322	667	636	0.5	0.5	2.563	A

01:00 - 01:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	479	120	462	2016	0.238	480	468	0.4	0.3	2.345	A
2	471	118	484	1948	0.242	472	457	0.4	0.3	2.440	A
3	415	104	489	2040	0.204	416	467	0.3	0.3	2.215	A
4	545	136	384	2132	0.255	545	520	0.5	0.3	2.268	A

01:15 - 01:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	401	100	386	2066	0.194	402	392	0.3	0.2	2.162	A
2	394	99	405	2001	0.197	395	383	0.3	0.2	2.243	A
3	348	87	409	2099	0.166	348	391	0.3	0.2	2.056	A
4	456	114	322	2177	0.210	457	435	0.3	0.3	2.092	A

Queue Variation Results for each time segment

00:00 - 00:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.24	0.00	0.00	0.24	0.24			N/A	N/A
2	0.24	0.00	0.00	0.24	0.24			N/A	N/A
3	0.20	0.00	0.00	0.20	0.20			N/A	N/A
4	0.26	0.00	0.00	0.26	0.26			N/A	N/A

00:15 - 00:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.31	0.00	0.00	0.31	0.31			N/A	N/A
2	0.32	0.00	0.00	0.32	0.32			N/A	N/A
3	0.25	0.00	0.00	0.25	0.25			N/A	N/A
4	0.34	0.00	0.00	0.34	0.34			N/A	N/A

00:30 - 00:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.43	0.03	0.25	0.45	0.48			N/A	N/A
2	0.44	0.03	0.25	0.45	0.48			N/A	N/A
3	0.35	0.03	0.25	0.45	0.48			N/A	N/A
4	0.47	0.03	0.25	0.47	0.48			N/A	N/A

00:45 - 01:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.43	0.03	0.33	1.36	1.61			N/A	N/A
2	0.44	0.03	0.32	1.39	1.72			N/A	N/A
3	0.35	0.03	0.33	1.14	1.38			N/A	N/A
4	0.47	0.03	0.32	1.43	1.94			N/A	N/A

01:00 - 01:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.31	0.00	0.00	0.31	0.31			N/A	N/A
2	0.32	0.00	0.00	0.32	0.32			N/A	N/A
3	0.26	0.00	0.00	0.26	0.26			N/A	N/A
4	0.34	0.00	0.00	0.34	0.34			N/A	N/A

01:15 - 01:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.24	0.00	0.00	0.24	0.24			N/A	N/A
2	0.25	0.00	0.00	0.25	0.25			N/A	N/A
3	0.20	0.00	0.00	0.20	0.20			N/A	N/A
4	0.27	0.00	0.00	0.27	0.27			N/A	N/A

2030 Future Total, Sunday

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Burnhamthorpe Road at Ninth Line	Standard Roundabout		1, 2, 3, 4	2.69	A

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Right	Normal/unknown	101	Arm 2	2.69	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D9	2030 Future Total	Sunday	ONE HOUR	00:00	01:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	501	100.000
2		ONE HOUR	✓	507	100.000
3		ONE HOUR	✓	351	100.000
4		ONE HOUR	✓	688	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1	2	3	4
From	1	0	92	294	115
	2	71	0	71	365
	3	216	18	0	117
	4	105	261	138	184

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	0	6	6	5
	2	16	0	5	7
	3	2	0	0	5
	4	0	4	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.29	2.69	0.4	1.4	A	460	690
2	0.32	3.02	0.5	1.9	A	465	698
3	0.21	2.52	0.3	0.9	A	322	483
4	0.35	2.52	0.5	2.4	A	631	947

Main Results for each time segment

00:00 - 00:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	377	94	451	2028	0.186	376	294	0.0	0.2	2.178	A
2	382	95	549	1917	0.199	381	279	0.0	0.2	2.341	A
3	264	66	552	2000	0.132	264	378	0.0	0.2	2.073	A
4	518	129	229	2262	0.229	517	587	0.0	0.3	2.062	A

00:15 - 00:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	450	113	540	1969	0.229	450	352	0.2	0.3	2.370	A
2	456	114	657	1846	0.247	455	333	0.2	0.3	2.588	A
3	316	79	660	1923	0.164	315	452	0.2	0.2	2.238	A
4	619	155	274	2230	0.277	618	702	0.3	0.4	2.233	A

00:30 - 00:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	552	138	661	1888	0.292	551	431	0.3	0.4	2.693	A
2	558	140	804	1748	0.319	558	408	0.3	0.5	3.021	A
3	386	97	809	1818	0.213	386	553	0.2	0.3	2.515	A
4	758	189	336	2186	0.347	757	859	0.4	0.5	2.518	A

00:45 - 01:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	552	138	662	1888	0.292	552	432	0.4	0.4	2.694	A
2	558	140	805	1748	0.319	558	408	0.5	0.5	3.025	A
3	386	97	809	1817	0.213	386	554	0.3	0.3	2.516	A
4	758	189	336	2185	0.347	758	860	0.5	0.5	2.520	A

01:00 - 01:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	450	113	541	1968	0.229	451	353	0.4	0.3	2.372	A
2	456	114	658	1845	0.247	456	334	0.5	0.3	2.594	A
3	316	79	661	1922	0.164	316	453	0.3	0.2	2.242	A
4	619	155	274	2230	0.277	619	703	0.5	0.4	2.235	A

01:15 - 01:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	377	94	453	2027	0.186	377	295	0.3	0.2	2.182	A
2	382	95	551	1916	0.199	382	279	0.3	0.2	2.348	A
3	264	66	554	1999	0.132	264	379	0.2	0.2	2.075	A
4	518	129	230	2262	0.229	518	588	0.4	0.3	2.065	A

Queue Variation Results for each time segment

00:00 - 00:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.23	0.00	0.00	0.23	0.23			N/A	N/A
2	0.25	0.00	0.00	0.25	0.25			N/A	N/A
3	0.15	0.00	0.00	0.15	0.15			N/A	N/A
4	0.30	0.00	0.00	0.30	0.30			N/A	N/A

00:15 - 00:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.30	0.00	0.00	0.30	0.30			N/A	N/A
2	0.33	0.00	0.00	0.33	0.33			N/A	N/A
3	0.20	0.00	0.00	0.20	0.20			N/A	N/A
4	0.38	0.00	0.00	0.38	0.38			N/A	N/A

00:30 - 00:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.41	0.03	0.25	0.45	0.48			N/A	N/A
2	0.47	0.03	0.25	0.47	0.48			N/A	N/A
3	0.27	0.03	0.25	0.45	0.48			N/A	N/A
4	0.53	0.03	0.25	0.53	0.53			N/A	N/A

00:45 - 01:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.41	0.03	0.33	1.32	1.42			N/A	N/A
2	0.47	0.03	0.32	1.42	1.90			N/A	N/A
3	0.27	0.03	0.27	0.49	0.93			N/A	N/A
4	0.53	0.03	0.30	1.42	2.44			N/A	N/A

01:00 - 01:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.30	0.00	0.00	0.30	0.30			N/A	N/A
2	0.33	0.00	0.00	0.33	0.33			N/A	N/A
3	0.20	0.00	0.00	0.20	0.20			N/A	N/A
4	0.39	0.00	0.00	0.39	0.39			N/A	N/A

01:15 - 01:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.23	0.00	0.00	0.23	0.23			N/A	N/A
2	0.25	0.00	0.00	0.25	0.25			N/A	N/A
3	0.15	0.00	0.00	0.15	0.15			N/A	N/A
4	0.30	0.00	0.00	0.30	0.30			N/A	N/A

2035 Future Total, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Burnhamthorpe Road at Ninth Line	Standard Roundabout		1, 2, 3, 4	2.71	A

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Right	Normal/unknown	98	Arm 1	2.71	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D10	2035 Future Total	PM	ONE HOUR	00:00	01:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	604	100.000
2		ONE HOUR	✓	436	100.000
3		ONE HOUR	✓	400	100.000
4		ONE HOUR	✓	755	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1	2	3	4
From	1	0	108	397	99
	2	117	0	20	299
	3	271	28	0	101
	4	108	469	127	51

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	2	2	2	2
	2	2	2	2	2
	3	2	2	2	2
	4	2	2	2	2

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.35	2.91	0.5	2.5	A	554	831
2	0.25	2.53	0.3	1.3	A	400	600
3	0.22	2.33	0.3	1.1	A	367	551
4	0.40	2.84	0.7	2.8	A	693	1039

Main Results for each time segment

00:00 - 00:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	455	114	507	2064	0.220	454	373	0.0	0.3	2.235	A
2	328	82	506	2064	0.159	327	454	0.0	0.2	2.071	A
3	301	75	425	2120	0.142	300	409	0.0	0.2	1.978	A
4	568	142	312	2198	0.259	567	413	0.0	0.3	2.204	A

00:15 - 00:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	543	136	606	1995	0.272	543	446	0.3	0.4	2.479	A
2	392	98	606	1995	0.196	392	544	0.2	0.2	2.245	A
3	360	90	509	2062	0.174	359	489	0.2	0.2	2.113	A
4	679	170	374	2156	0.315	678	494	0.3	0.5	2.436	A

00:30 - 00:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	665	166	742	1900	0.350	664	546	0.4	0.5	2.911	A
2	480	120	741	1901	0.253	480	665	0.2	0.3	2.533	A
3	440	110	623	1983	0.222	440	598	0.2	0.3	2.332	A
4	831	208	458	2098	0.396	830	605	0.5	0.7	2.839	A

00:45 - 01:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	665	166	743	1900	0.350	665	546	0.5	0.5	2.915	A
2	480	120	742	1900	0.253	480	666	0.3	0.3	2.533	A
3	440	110	623	1983	0.222	440	599	0.3	0.3	2.333	A
4	831	208	458	2098	0.396	831	606	0.7	0.7	2.842	A

01:00 - 01:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	543	136	607	1994	0.272	544	446	0.5	0.4	2.484	A
2	392	98	607	1994	0.197	392	544	0.3	0.2	2.248	A
3	360	90	509	2062	0.174	360	490	0.3	0.2	2.116	A
4	679	170	374	2156	0.315	680	495	0.7	0.5	2.439	A

01:15 - 01:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	455	114	509	2062	0.220	455	374	0.4	0.3	2.241	A
2	328	82	508	2063	0.159	328	456	0.2	0.2	2.075	A
3	301	75	426	2119	0.142	301	410	0.2	0.2	1.981	A
4	568	142	313	2198	0.259	569	414	0.5	0.3	2.210	A

Queue Variation Results for each time segment

00:00 - 00:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.28	0.00	0.00	0.28	0.28			N/A	N/A
2	0.19	0.00	0.00	0.19	0.19			N/A	N/A
3	0.17	0.00	0.00	0.17	0.17			N/A	N/A
4	0.35	0.00	0.00	0.35	0.35			N/A	N/A

00:15 - 00:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.37	0.00	0.00	0.37	0.37			N/A	N/A
2	0.24	0.00	0.00	0.24	0.24			N/A	N/A
3	0.21	0.00	0.00	0.21	0.21			N/A	N/A
4	0.46	0.00	0.00	0.46	0.46			N/A	N/A

00:30 - 00:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.54	0.03	0.25	0.54	0.54			N/A	N/A
2	0.34	0.03	0.25	0.45	0.48			N/A	N/A
3	0.28	0.03	0.25	0.45	0.48			N/A	N/A
4	0.65	0.03	0.25	0.65	0.65			N/A	N/A

00:45 - 01:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.54	0.03	0.30	1.44	2.48			N/A	N/A
2	0.34	0.03	0.32	1.10	1.34			N/A	N/A
3	0.29	0.03	0.29	0.72	1.11			N/A	N/A
4	0.65	0.03	0.29	1.04	2.75			N/A	N/A

01:00 - 01:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.38	0.00	0.00	0.38	0.38			N/A	N/A
2	0.25	0.00	0.00	0.25	0.25			N/A	N/A
3	0.21	0.00	0.00	0.21	0.21			N/A	N/A
4	0.46	0.00	0.00	0.46	0.46			N/A	N/A

01:15 - 01:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.28	0.00	0.00	0.28	0.28			N/A	N/A
2	0.19	0.00	0.00	0.19	0.19			N/A	N/A
3	0.17	0.00	0.00	0.17	0.17			N/A	N/A
4	0.35	0.00	0.00	0.35	0.35			N/A	N/A

2035 Future Total, Saturday

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Burnhamthorpe Road at Ninth Line	Standard Roundabout		1, 2, 3, 4	2.75	A

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Right	Normal/unknown	101	Arm 2	2.75	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D11	2035 Future Total	Saturday	ONE HOUR	00:00	01:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	631	100.000
2		ONE HOUR	✓	622	100.000
3		ONE HOUR	✓	507	100.000
4		ONE HOUR	✓	667	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1	2	3	4
From	1	0	143	413	75
	2	107	0	107	408
	3	335	28	0	144
	4	130	400	129	8

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	2	2	2	2
	2	2	2	2	2
	3	2	2	2	2
	4	2	2	2	2

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.35	2.79	0.5	2.5	A	579	869
2	0.35	2.87	0.5	2.5	A	571	856
3	0.29	2.57	0.4	1.2	A	465	698
4	0.36	2.72	0.6	2.6	A	612	918

Main Results for each time segment

00:00 - 00:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	475	119	424	2121	0.224	474	430	0.0	0.3	2.185	A
2	468	117	469	2090	0.224	467	429	0.0	0.3	2.218	A
3	382	95	449	2104	0.181	381	487	0.0	0.2	2.088	A
4	502	126	353	2170	0.231	501	477	0.0	0.3	2.155	A

00:15 - 00:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	567	142	508	2063	0.275	567	514	0.3	0.4	2.406	A
2	559	140	562	2026	0.276	559	513	0.3	0.4	2.454	A
3	456	114	537	2043	0.223	456	583	0.2	0.3	2.268	A
4	600	150	422	2122	0.283	599	570	0.3	0.4	2.363	A

00:30 - 00:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	695	174	622	1984	0.350	694	629	0.4	0.5	2.789	A
2	685	171	688	1938	0.353	684	628	0.4	0.5	2.869	A
3	558	140	658	1959	0.285	558	714	0.3	0.4	2.569	A
4	734	184	517	2057	0.357	734	699	0.4	0.6	2.720	A

00:45 - 01:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	695	174	622	1984	0.350	695	630	0.5	0.5	2.792	A
2	685	171	688	1938	0.353	685	629	0.5	0.5	2.872	A
3	558	140	658	1959	0.285	558	715	0.4	0.4	2.570	A
4	734	184	517	2056	0.357	734	699	0.6	0.6	2.722	A

01:00 - 01:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	567	142	508	2063	0.275	568	515	0.5	0.4	2.409	A
2	559	140	562	2025	0.276	560	514	0.5	0.4	2.457	A
3	456	114	538	2042	0.223	456	584	0.4	0.3	2.272	A
4	600	150	423	2122	0.283	600	571	0.6	0.4	2.368	A

01:15 - 01:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	475	119	426	2120	0.224	475	431	0.4	0.3	2.190	A
2	468	117	471	2089	0.224	469	430	0.4	0.3	2.224	A
3	382	95	451	2103	0.182	382	489	0.3	0.2	2.093	A
4	502	126	354	2170	0.231	503	478	0.4	0.3	2.161	A

Queue Variation Results for each time segment

00:00 - 00:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.29	0.00	0.00	0.29	0.29			N/A	N/A
2	0.29	0.00	0.00	0.29	0.29			N/A	N/A
3	0.22	0.00	0.00	0.22	0.22			N/A	N/A
4	0.30	0.00	0.00	0.30	0.30			N/A	N/A

00:15 - 00:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.38	0.00	0.00	0.38	0.38			N/A	N/A
2	0.38	0.00	0.00	0.38	0.38			N/A	N/A
3	0.29	0.00	0.00	0.29	0.29			N/A	N/A
4	0.39	0.00	0.00	0.39	0.39			N/A	N/A

00:30 - 00:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.54	0.03	0.25	0.54	0.54			N/A	N/A
2	0.54	0.03	0.25	0.54	0.54			N/A	N/A
3	0.40	0.03	0.25	0.45	0.48			N/A	N/A
4	0.55	0.03	0.25	0.55	0.55			N/A	N/A

00:45 - 01:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.54	0.03	0.30	1.43	2.49			N/A	N/A
2	0.55	0.03	0.30	1.42	2.53			N/A	N/A
3	0.40	0.03	0.33	1.21	1.21			N/A	N/A
4	0.55	0.03	0.30	1.40	2.60			N/A	N/A

01:00 - 01:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.38	0.00	0.00	0.38	0.38			N/A	N/A
2	0.38	0.00	0.00	0.38	0.38			N/A	N/A
3	0.29	0.00	0.00	0.29	0.29			N/A	N/A
4	0.40	0.00	0.00	0.40	0.40			N/A	N/A

01:15 - 01:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.29	0.00	0.00	0.29	0.29			N/A	N/A
2	0.29	0.00	0.00	0.29	0.29			N/A	N/A
3	0.22	0.00	0.00	0.22	0.22			N/A	N/A
4	0.30	0.00	0.00	0.30	0.30			N/A	N/A

2035 Future Total, Sunday

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Burnhamthorpe Road at Ninth Line	Standard Roundabout		1, 2, 3, 4	2.71	A

Junction Network

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold	Network delay (s)	Network LOS
Right	Normal/unknown	98	Arm 2	2.71	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D12	2035 Future Total	Sunday	ONE HOUR	00:00	01:30	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		ONE HOUR	✓	488	100.000
2		ONE HOUR	✓	556	100.000
3		ONE HOUR	✓	385	100.000
4		ONE HOUR	✓	731	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		1	2	3	4
From	1	0	90	285	113
	2	78	0	78	400
	3	238	20	0	127
	4	112	285	150	184

Vehicle Mix

Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	2	6	2	5
	2	2	2	5	2
	3	2	2	2	2
	4	2	2	2	2

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	0.28	2.64	0.4	1.2	A	448	672
2	0.33	2.92	0.5	2.1	A	510	765
3	0.23	2.58	0.3	1.2	A	353	530
4	0.37	2.66	0.6	2.7	A	671	1006

Main Results for each time segment

00:00 - 00:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	367	92	480	2053	0.179	367	321	0.0	0.2	2.133	A
2	419	105	550	2024	0.207	418	297	0.0	0.3	2.240	A
3	290	72	582	2010	0.144	289	385	0.0	0.2	2.092	A
4	550	138	252	2240	0.246	549	619	0.0	0.3	2.128	A

00:15 - 00:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	439	110	574	1989	0.221	438	385	0.2	0.3	2.321	A
2	500	125	658	1949	0.256	499	355	0.3	0.3	2.483	A
3	346	87	696	1930	0.179	346	461	0.2	0.2	2.272	A
4	657	164	302	2206	0.298	657	740	0.3	0.4	2.324	A

00:30 - 00:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	537	134	703	1901	0.283	537	471	0.3	0.4	2.639	A
2	612	153	805	1846	0.332	612	435	0.3	0.5	2.913	A
3	424	106	853	1821	0.233	424	564	0.2	0.3	2.575	A
4	805	201	370	2159	0.373	804	906	0.4	0.6	2.656	A

00:45 - 01:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	537	134	704	1901	0.283	537	471	0.4	0.4	2.640	A
2	612	153	806	1846	0.332	612	435	0.5	0.5	2.917	A
3	424	106	853	1821	0.233	424	565	0.3	0.3	2.576	A
4	805	201	370	2159	0.373	805	907	0.6	0.6	2.658	A

01:00 - 01:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	439	110	575	1988	0.221	439	385	0.4	0.3	2.325	A
2	500	125	659	1948	0.257	500	355	0.5	0.3	2.487	A
3	346	87	697	1929	0.179	346	462	0.3	0.2	2.274	A
4	657	164	302	2205	0.298	658	742	0.6	0.4	2.328	A

01:15 - 01:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	367	92	481	2052	0.179	368	322	0.3	0.2	2.136	A
2	419	105	551	2023	0.207	419	298	0.3	0.3	2.244	A
3	290	72	584	2008	0.144	290	386	0.2	0.2	2.096	A
4	550	138	253	2240	0.246	551	621	0.4	0.3	2.131	A

Queue Variation Results for each time segment

00:00 - 00:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.22	0.00	0.00	0.22	0.22			N/A	N/A
2	0.26	0.00	0.00	0.26	0.26			N/A	N/A
3	0.17	0.00	0.00	0.17	0.17			N/A	N/A
4	0.32	0.00	0.00	0.32	0.32			N/A	N/A

00:15 - 00:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.28	0.00	0.00	0.28	0.28			N/A	N/A
2	0.34	0.00	0.00	0.34	0.34			N/A	N/A
3	0.22	0.00	0.00	0.22	0.22			N/A	N/A
4	0.42	0.00	0.00	0.42	0.42			N/A	N/A

00:30 - 00:45

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.39	0.03	0.25	0.45	0.48			N/A	N/A
2	0.49	0.03	0.25	0.49	0.49			N/A	N/A
3	0.30	0.03	0.25	0.45	0.48			N/A	N/A
4	0.59	0.03	0.25	0.59	0.59			N/A	N/A

00:45 - 01:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.39	0.03	0.33	1.15	1.15			N/A	N/A
2	0.49	0.03	0.31	1.44	2.10			N/A	N/A
3	0.30	0.03	0.30	0.93	1.22			N/A	N/A
4	0.59	0.03	0.29	1.29	2.75			N/A	N/A

01:00 - 01:15

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.28	0.00	0.00	0.28	0.28			N/A	N/A
2	0.35	0.00	0.00	0.35	0.35			N/A	N/A
3	0.22	0.00	0.00	0.22	0.22			N/A	N/A
4	0.43	0.00	0.00	0.43	0.43			N/A	N/A

01:15 - 01:30

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)	Percentile message	Marker message	Probability of reaching or exceeding marker	Probability of exactly reaching marker
1	0.22	0.00	0.00	0.22	0.22			N/A	N/A
2	0.26	0.00	0.00	0.26	0.26			N/A	N/A
3	0.17	0.00	0.00	0.17	0.17			N/A	N/A
4	0.33	0.00	0.00	0.33	0.33			N/A	N/A