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TECHNICAL MEMORANDUM

Missouri Flat Master Circulation & Financing Plan Phase II

Technical Memorandum 1-8

Missouri Flat Road Interchange Capacity Threshold Phasing Analysis and Alternative Screening Evaluation

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Date: December 23, 2019 Project #: 18048
To: Ms. Natalie Porter, El Dorado County
From: Mike Aronson, P.E., Aaron Elias, T.E., Felipe Ladrón de Guevara
cc:

This memorandum summarizes the following subtasks for the Missouri Flat Master Circulation and Financing Plan Phase II (MC&FP-II) project:

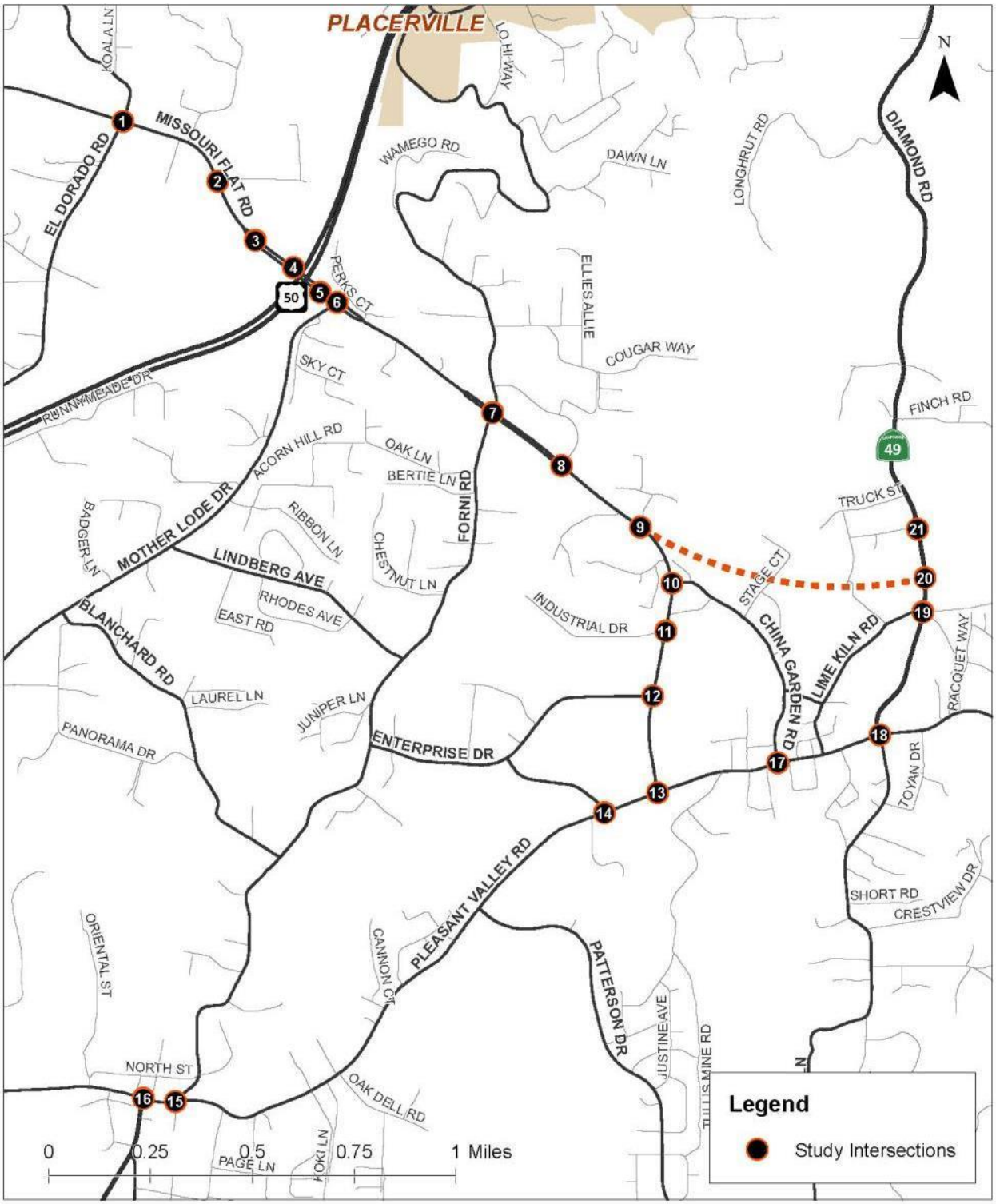
- Subtask 1.4.5: Future Traffic Conditions, Deficiencies and Needed Improvements
- Subtask 1.4.6: Missouri Flat Interchange Focused Analysis

The study area includes 23 study intersections, with a focus on the operations of the US 50 freeway interchange at Missouri Flat Road (Figure 1).

SUMMARY

- With projected 2035 volumes, level of service (LOS) F conditions are projected at seven of the 23 study intersections.
- At the US 50/Missouri Flat Road interchange, signal phasing and timing modifications may provide for LOS D or better operations at all intersections without physical improvements for the year 2035, but not with 2040 volumes.
- Several ultimate interchange configurations could provide LOS D or better operations at all interchange intersections, including a hook ramp concept, a partial cloverleaf concept, a six-lane tight diamond or a single point diamond concept.
- A diverging diamond interchange would provide LOS C or better operations but would be most effective with the relocation of the Mother Lode Drive intersection at Missouri Flat Road. It could operate with right-turn only access at Mother Lode Drive.
- An interchange based on roundabout intersections at the ramps cannot provide the capacity required for the 2040 volumes.

Figure 1: Study Area



Note: The intersections of US 50 EB Ramps/El Dorado Road and US 50 WB Ramps/El Dorado Road are included in the analysis, but not shown on this figure.

FUTURE TRAFFIC CONDITIONS

The future traffic conditions for all study locations were evaluated to identify potential deficiencies and recommended improvements.

Level of Service

Level of Service (LOS) is a grading system that indicates the quality of service motorists experience on roadway facilities such as intersections or along roadway segments. Level of Service is a qualitative measure of the effect of a number of factors, including delay, vehicle speeds and travel time, traffic interruptions, freedom to maneuver, driving comfort and convenience. Levels of service are designated "A" through "F", which cover the entire range of traffic operations that might occur. LOS A reflects little to no delay from the motorists' perspective, while LOS F indicates significant delays and queuing. Level of Service (LOS) "A" through "E" generally represents traffic volumes less than or at roadway capacity, while LOS "F" represents over capacity and/or forced flow conditions.

El Dorado County General Plan Policy TC-Xd provides level of service standards as follows:

> *Level of Service (LOS) for County-maintained roads and state highways within the unincorporated areas of the county shall not be worse than LOS E in the Community Regions or LOS D in the Rural Centers and Rural Regions except as specified in Table TC-2. The volume to capacity [V/C] ratio of the roadway segments listed in Table TC-2 shall not exceed the ratio specified in that table.*

All of the study intersections are located within the El Dorado/Diamond Springs Community Region. As such, the intersections will be evaluated against the LOS E standard. Three segments listed in General Plan Table TC-2 are included in the study area:

1. Missouri Flat Road - US 50 to Mother Lode Drive (Maximum V/C Ratio = 1.12)
2. Missouri Flat Road - Mother Lode Drive to China Garden Road (Maximum V/C Ratio = 1.20)
3. Pleasant Valley Road – El Dorado Road to State Route 49 (Maximum V/C Ratio = 1.28)

Traffic Forecasts

Traffic forecasts for 2035 and 2040 are documented in Technical Memorandum 1-7. As described in Technical Memorandum 1-7, the future year operational analysis assumes the construction of Diamond Springs Parkway as a four-lane roadway. The analysis also assumes the widening of Missouri Flat Road from two to four lanes between China Garden Road and State Route (SR) 49 (Pleasant Valley Road). The analysis results do not assume any improvements to the Missouri Flat Road and El Dorado Road interchanges.

Operational Assessment

The evaluation of future traffic operations focuses on 2040 conditions. Traffic operations were evaluated using *Highway Capacity Manual* (HCM) methodologies and the Synchro software network set up initially for the Diamond Springs Parkway Transportation Analysis Report (TAR) ().

Table 1: Intersection Operations

ID	Intersection	Control	Peak	Existing		2040	
				Delay[1,2]	LOS[2]	Delay[1,2]	LOS[2]
1	Missouri Flat Rd. & El Dorado Rd.	Signal	AM	19.9	B	17.5	B
			PM	14.7	B	17.5	B
2	Missouri Flat Rd. & Headington Rd.	1-2 Way Stop	AM	13.7	B	33.0	C
			PM	12.1	B	43.2	D
3	Missouri Flat Rd. & Plaza Dr.*	Signal	AM	28.6	C	41.4	D
			PM	38.7	D		
4	Missouri Flat Rd. & US 50 WB Ramps*	Signal	AM	31.8	C	25.6	C
			PM	28.0	C		
5	Missouri Flat Rd. & US 50 EB Ramps*	Signal	AM	18.1	B	**248.8**	**F**
			PM	23.3	C		
6	Missouri Flat Rd. & Mother Lode Dr.*	Signal	AM	11.4	B	21.8	C
			PM	13.2	B		
7	Missouri Flat Rd. & Forni Rd.	Signal	AM	26.0	C	23.5	C
			PM	28.3	C	30.8	C
8	Missouri Flat Rd. & Golden Center Dr.	Signal	AM	10.2	B	13.6	B
			PM	16.2	B	28.2	C
9	Missouri Flat Rd. & Diamond Springs Pkwy.	Future Signal	AM	N/A	N/A	44.8	D
			PM	N/A	N/A	61.9	E
10	Missouri Flat Rd. & China Garden Rd.	1-2 Way Stop	AM	**154.9**	**F**	23.4	C
			PM	**116.4**	**F**	30.7	D
11	Missouri Flat Rd. & Industrial Dr.	1-2 Way Stop	AM	15.9	C	18.8	C
			PM	21.8	C	**371.4**	**F**
12	Missouri Flat Rd. & Enterprise Dr.	1-2 Way Stop	AM	23.2	C	26.1	D
			PM	30.8	D	**74.3**	**F**
13	Missouri Flat Rd. & Pleasant Valley Rd. (SR 49)	Signal	AM	14.2	B	14.7	B
			PM	28.6	C	24.9	C
14	Pleasant Valley Rd. (SR 49) & Commerce Way	1-2 Way Stop	AM	14.9	B	14.6	B
			PM	15.9	C	17.8	C
15	Pleasant Valley Rd. (SR 49) & Forni Rd.	1-2 Way Stop	AM	36.2	E	**143.1**	**F**
			PM	14.8	B	22.7	C

Table 1: Intersection Operations

ID	Intersection	Control	Peak	Existing		2040	
				Delay[1,2]	LOS[2]	Delay[1,2]	LOS[2]
16	Pleasant Valley Rd. & SR 49 (West)	All-Way Stop	AM	47.3	E	**126.4**	**F**
			PM	20.7	C	**194.8**	**F**
17	Pleasant Valley Rd. (SR 49) & China Garden Rd.	1-2 Way Stop	AM	20.9	C	17.9	C
			PM	25.6	D	25.4	D
18	Pleasant Valley Rd (SR 49) & Diamond Rd/Fowler Ln.	Signal	AM	28.2	C	27.2	C
			PM	23.1	C	45.2	D
19	Diamond Rd. & Black Rice Ln./Lime Kiln Rd.	1-2 Way Stop	AM	13.1	B	15.9	C
			PM	21.8	C	16.0	C
20	Diamond Rd. & Diamond Springs Pkwy.	Future Signal	AM	N/A	N/A	58.2	E
			PM	N/A	N/A	**99.9**	**F**
21	Diamond Rd. & Bradley Dr.	1-2 Way Stop	AM	11.1	B	17.3	C
			PM	13.1	B	48.4	E
22	El Dorado Rd. & US 50 WB Ramps	1-2 Way Stop	AM	21.5	C	**54.3**	**F**
			PM	17.0	C	**179.4**	**F**
23	El Dorado Rd. & US 50 EB Ramps	1-2 Way Stop	AM	15.6	C	**50.4**	**F**
			PM	15.5	C	**183.4**	**F**

Notes:
Source: Kittelson & Associates, 2016
SSSC = Side Street Stop Control, AWSC = All Way Stop Control, N/A = not applicable for this scenario
Bold and shaded cells indicate that delays and LOS exceed the County or State's operational threshold
* Analyzed using SimTraffic micro-simulation models. PM peak hour LOS and delay are reported from the focused analysis described in the following section.
1 Delay is reported in seconds / vehicles, based on HCM 2010 methods
2 Worse movement delay and LOS reported for SSSC. For AWSC and signal, overall average delay and LOS is reported.

Due to close intersection spacing, the traffic analysis for the four intersections at and adjacent to the U.S. 50 interchange at Missouri Flat Road (intersections 2, 3, 4 and 5) is based on simulation of individual vehicles using SimTraffic software, which considers progression through the intersections and potential queuing between intersections. The simulation analysis was conducted for the P.M. peak hour as it is the critical period for traffic volumes and access to retail development.

The existing LOS F peak hour operations at the intersection of Missouri Flat Road and China Garden Road (#10) would be improved to LOS D or better due to traffic diversion to the new Diamond Springs Parkway.

The traffic analysis indicates that eight of the 23 intersections studied are projected to operate at LOS F by 2040 without proposed project improvements. The future deficiencies include:

- Missouri Flat Road and U.S. 50 eastbound (EB) ramps (#5)
- Missouri Flat Road and Industrial Drive (#11)
- Missouri Flat Road and Enterprise Drive (#12)
- Pleasant Valley Road (SR 49) and Forni Road (#15)
- Pleasant Valley Road and SR 49 (west) (#16)
- Diamond Road and Diamond Springs Parkway (new intersection #20)
- El Dorado Road and U.S. 50 westbound (WB) ramps (#22)
- El Dorado Road and U.S. 50 eastbound (EB) ramps (#23)

Mitigation

Mitigation alternatives for the U.S. 50 interchange area are described in the following sections. Recommended mitigation for other study locations includes the following:

- Traffic operations at the intersection of Missouri Flat Road and Industrial Drive (#11) would be improved to LOS C or better with the installation of a traffic signal.
- Traffic operations at the intersection of Missouri Flat Road and Enterprise Drive (#12) would be improved to LOS B or better with the installation of a traffic signal.
- Traffic operations at the intersection of Pleasant Valley Road and Forni Road (#15) would be improved to LOS B or better with the relocation of Forni Road, construction of an eastbound left-turn lane and installation of a traffic signal.
- Traffic operations at the intersection of Pleasant Valley Road and SR 49 West (#16) would be improved to LOS C or better with the installation of a traffic signal.
- Traffic operations at the new intersection of Diamond Road and Diamond Springs Parkway (#20) would be improved to LOS D or better with revised striping of the eastbound intersection approach.
- Traffic operations at the intersections of El Dorado Road with the U.S. 50 westbound (#22) and eastbound (#23) ramps would be improved to LOS B or better with the interchange improvements currently proposed by El Dorado County including installation of traffic signals.

MISSOURI FLAT ROAD INTERCHANGE FOCUSED ANALYSIS

Traffic operations for the four interchange area intersections (Missouri Flat Road from Plaza Drive to Mother Lode Drive) were further evaluated using traffic simulation and the SimTraffic software. This provides a more complete analysis of the effects of queues and interactions between the closely spaced intersections. The driver behavior assumptions were adjusted consistent with the calibration reported for the Diamond Springs Parkway TAR. Following standard practice, each scenario was simulated for the peak one-hour traffic volumes ten times, and the averages of the results of the ten simulations were reported.

This screening analysis of the interchange alternatives focuses on the PM peak hour, which has higher traffic volumes than the AM peak hour. Further design of a preferred interchange alternative will evaluate both AM and PM peak hour operations.

The interchange was first evaluated using the existing signal timing settings (Table 2). With the updated 2035 forecasts, the simulation results in LOS C operations at three of the four intersections and LOS F at the intersection of US 50 eastbound ramps and Missouri Flat Road. With the 2040 forecasts, the intersection of Plaza Drive and Missouri Flat Road changes from LOS C (2035) to LOS D while the other intersections remain at the same LOS. The 2040 forecasts from the DSP TAR reflect similar deficiencies, but also result in LOS F at Mother Lode Drive. The deficient operations are primarily caused by the close spacing between the eastbound ramp intersection and the Mother Lode Drive intersection.

Modified Signal Phasing

Several adjustments in signal phasing and timing were tested to identify the potential for interim improvements in traffic operations prior to a major capital investment. The most successful was to modify the phasing at the eastbound ramp intersection to allow right turns from the off-ramp to overlap with southbound left-turns to the on-ramp (Figure 2). With this modification, the analysis indicates that LOS D or better operations could be provided at all four study intersections with the updated 2035 traffic forecasts. However, with the 2040 forecasts, the intersections at Plaza Drive and the US 50 eastbound ramps would operate at LOS F and LOS E, respectively.

Mother Lode Drive Relocation

The close spacing between the eastbound off-ramp intersection and the Mother Lode Drive intersection was identified as the primary cause of deficient operations with the 2040 forecast volumes. The traffic operations were evaluated assuming that Mother Lode Drive could be relocated to an intersection further south along Missouri Flat Road. The initial analysis indicates that LOS D or better operations could be provided with a relocated Mother Lode Drive intersection in 2035 and LOS E or better in 2040.

Table 2: US 50/Missouri Flat Road Interchange PM Peak Hour Intersection Operations

2035 MC&FP Traffic Forecast

No.	Intersection	Existing Signal Phasing	Modified Signal Phasing	Modified Signal + Mother Lode Relocation
3	Missouri Flat Rd. & Plaza Dr.	C (33.8)	D (37.0)	C (32.0)
4	Missouri Flat Rd. & US 50 WB Ramps	C (22.8)	C (28.1)	C (23.2)
5	Missouri Flat Rd. & US 50 EB Ramps	**F (236.3)**	C (27.3)	C (34.5)
6	Missouri Flat Rd. & Mother Lode Dr.	C (22.7)	B (11.8)	D (38.4)

2040 MC&FP Traffic Forecast

No.	Intersection	Existing Signal Phasing	Modified Signal Phasing	Modified Signal + Mother Lode Relocation
3	Missouri Flat Rd. & Plaza Dr.	D (41.4)	**F (84.0)**	E (56.3)
4	Missouri Flat Rd. & US 50 WB Ramps	C (25.6)	D (35.6)	C (32.7)
5	Missouri Flat Rd. & US 50 EB Ramps	**F (248.8)**	E (57.4)	D (37.1)
6	Missouri Flat Rd. & Mother Lode Dr.	C (21.8)	B (17.7)	C (33.8)

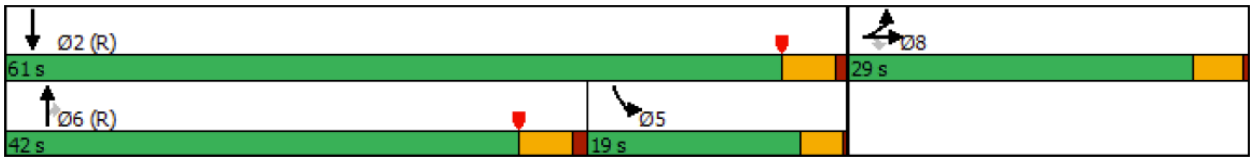
2040 Diamond Springs Parkway TAR Traffic Forecast

No.	Intersection	Existing Signal Phasing	Modified Signal Phasing	Modified Signal + Mother Lode Relocation
3	Missouri Flat Rd. & Plaza Dr.	D (42.7)	E (59.6)	D (39.8)
4	Missouri Flat Rd. & US 50 WB Ramps	C (30.1)	D (37.9)	C (28.8)
5	Missouri Flat Rd. & US 50 EB Ramps	**F (349.4)**	C (32.5)	C (35.0)
6	Missouri Flat Rd. & Mother Lode Dr.	**F (89.1)**	C (25.8)	C (27.2)

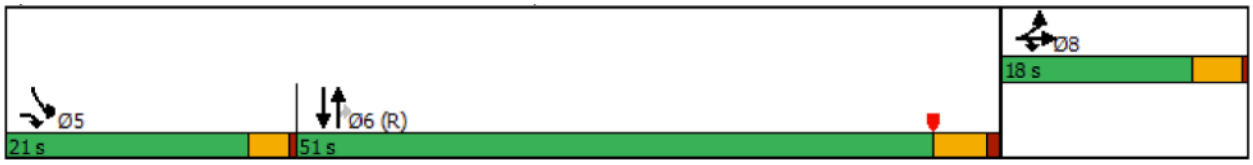
Notes:
C (32.8) = Level of service (average vehicle delay in seconds).
Results based on average of 10 random simulations using SimTraffic software.
Bold and shaded cells indicate that delays and LOS exceed the County or State's operational threshold.

Figure 2: Missouri Flat Road Interchange Recommended Signal Phasing Modification

Existing Phasing at US 50 EB Ramps/Missouri Flat Road



Modified Phasing at US 50 EB Ramps/Missouri Flat Road



ALTERNATIVE SCREENING EVALUATION

Traffic operations were evaluated for several interim and ultimate interchange configurations:

Interim Configurations

- Lane Reconfiguration 1
- Lane Reconfiguration 2

Ultimate Configurations

- Hook Ramps (no Mother Lode Drive relocation)
- Partial Cloverleaf (with Mother Lode Drive relocation)
- Diverging Diamond (no Mother Lode Drive relocation, access restrictions)
- Diverging Diamond (with Mother Lode Drive relocation)
- Roundabouts (no Mother Lode Drive relocation)
- 6-Lane Tight Diamond (no Mother Lode Drive relocation)
- Single Point (no Mother Lode Drive relocation)

Lane Reconfiguration 1

Lane reconfiguration 1 would restripe the existing bridge and approaches without structural modifications to get more capacity from the existing interchange. The reconfiguration primarily adds an additional through lane on Missouri Flat Road starting at the northbound approach to Mother Lode Drive and ending at the northbound left turn lane into Plaza Drive. This configuration would provide additional northbound through capacity for the interchange.

The simulation analysis indicates that the interchange would continue to operate similarly (Table 3) to conditions without modifications. This is due to the additional northbound lane not addressing the close intersection spacing of the eastbound US 50 off-ramp and Mother Lode Drive which is the primary deficiency at the interchange under 2040 conditions.

Figure 3: Lane Reconfiguration 1 Concept Sketch

Table 3: 2040 PM Peak Hour Traffic Operations with Lane Reconfiguration 1

No.	Intersection	LOS(Delay)
3	Missouri Flat Rd. & Plaza Dr.	D (43.9)
4	Missouri Flat Rd. & US 50 WB Ramps	C (25.8)
5	Missouri Flat Rd. & US 50 EB Ramps	**F (233.2)**
6	Missouri Flat Rd. & Mother Lode Dr.	C (22.1)

Lane Reconfiguration 2

Like lane reconfiguration 1, lane configuration 2 modifications would primarily involve restriping to increase capacity of certain movements. The reconfiguration would extend the southbound left turn lanes at the eastbound ramps onto the freeway to be the entire length of the bridge for better queue storage and an additional through lane on the northbound approaches to Mother Lode Drive and US 50 eastbound ramps.

Lane reconfiguration 2 was found to operate slightly better than lane reconfiguration 1 (Table 4) but would still provide similar operations as the unmodified interchange.

Figure 4: Lane Reconfiguration 2 Concept Sketch

Table 4: 2040 PM Peak Hour Traffic Operations with Lane Reconfiguration 2

No.	Intersection	LOS (Delay)
3	Missouri Flat Rd. & Plaza Dr.	D (39.2)
4	Missouri Flat Rd. & US 50 WB Ramps	C (25.2)
5	Missouri Flat Rd. & US 50 EB Ramps	**F (229.1)**
6	Missouri Flat Rd. & Mother Lode Dr.	B (14.1)

Hook Ramps

The hook ramp concept would replace the eastbound US 50 off-ramp to Missouri Flat Road with hook on- and off-ramps connecting to Mother Lode Drive (Figure 5). The intersection of Mother Lode Drive and the new hook ramps would be signalized and operate in coordination with the signal at Mother Lode Drive and Missouri Flat Road.

Figure 5: Hook Ramp Concept Sketch

The existing eastbound US 50 on-ramp from Missouri Flat Road would continue to serve vehicles traveling northbound on Missouri Flat Road. However, vehicles on southbound Missouri Flat Road would turn right on Mother Lode Drive and then turn right to a new hook on-ramp to travel east on US 50. This configuration would eliminate the existing signalized intersection at the eastbound ramps, and would allow Mother Lode Drive to remain in its current alignment.

The simulation analysis indicates that LOS D or better operations could be provided at all intersections, including the new intersection where the hook ramps would intersect Mother Lode Drive (Table 5).

Table 5: 2040 PM Peak Hour Traffic Operations with Hook Ramps

No.	Intersection	LOS (Delay)
3	Missouri Flat Rd. & Plaza Dr.	D (41.8)
4	Missouri Flat Rd. & US 50 WB Ramps	C (30.3)
5	Mother Lode Dr. & US 50 EB Ramps	B (12.4)
6	Missouri Flat Rd. & Mother Lode Dr.	B (18.5)

Operational concerns with the hook ramps concept would include the following:

- Driver disorientation exiting to a frontage road rather than Missouri Flat Road, the primary arterial.

- Safety and visibility with the sharp right-turn on the off-ramp.
- This alternative has shorter ramps than exist today. Because shorter ramps have less storage space for queues, queuing on the off-ramp may affect freeway mainline traffic under very high traffic demand periods.
- Design and operations of the merge area on eastbound US 50 between the hook on-ramp and the existing on-ramp.

An initial queuing analysis for the hook off-ramp indicated that 95th percentile queues could be accommodated within the available storage distance without backing up to the freeway mainline.

Partial Cloverleaf

The partial cloverleaf accomplishes the same operational benefits as the hook ramp concept, but uses a standard Caltrans design (Figure 6). In order to provide the correct ramp geometry, this concept requires Mother Lode Drive to be relocated away from the interchange area.

The simulation analysis indicates that LOS D or better operations could be provided at all intersections (Table 6).

Figure 6: Partial Cloverleaf Concept Sketch

Table 6: 2040 PM Peak Hour Traffic Operations with Partial Cloverleaf

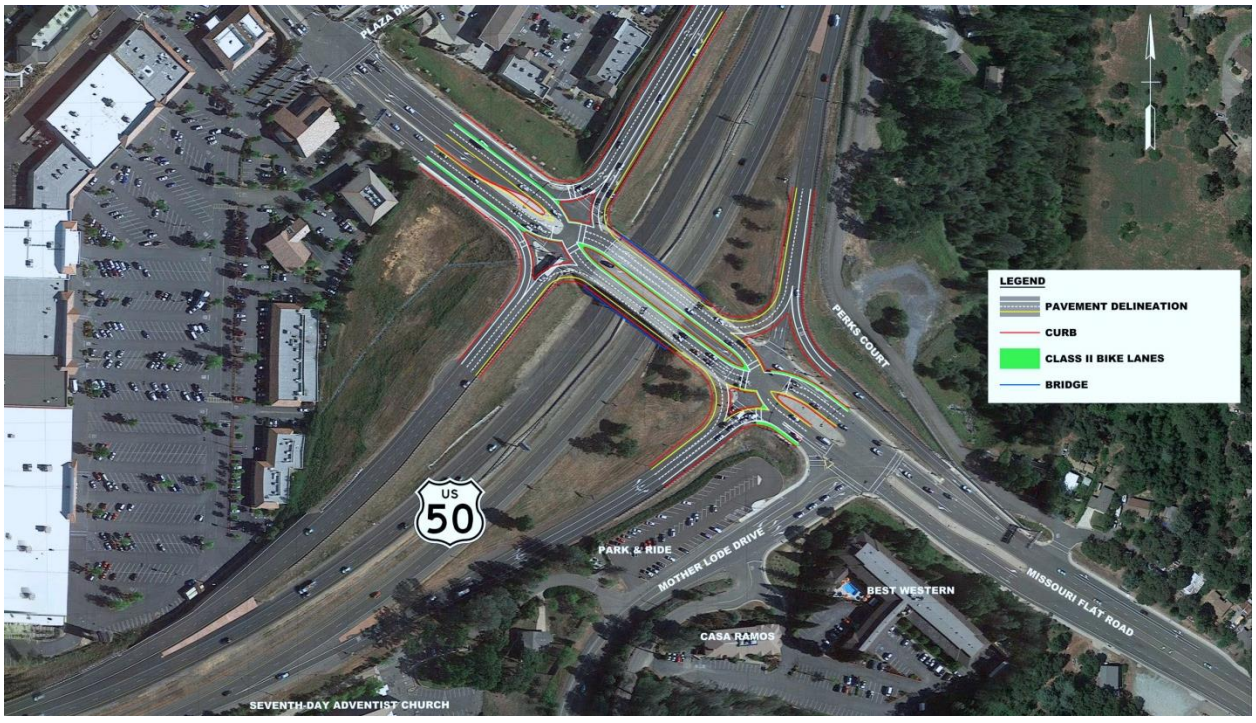
No.	Intersection	LOS (Delay)
3	Missouri Flat Rd. & Plaza Dr.	D (36.1)
4	Missouri Flat Rd. & US 50 WB Ramps	C (25.9)
5	Missouri Flat Rd. & US 50 EB Ramps	C (22.0)
6	Missouri Flat Rd. & Mother Lode Dr.	C (22.2)

The operational concerns involved with the hook ramps concept would not apply to the partial cloverleaf concept. However, there would be additional costs associated with the relocation of Mother Lode Drive.

Diverging Diamond

The diverging diamond concept would construct two crossover intersections, so that traffic would drive on the left side of the road across the overpass (Figure 7). This design simplifies the movements that typically involve left-turns across traffic to access freeway on-ramps.

Figure 7: Diverging Diamond Concept Sketch



A traffic simulation was prepared for the diverging diamond, assuming that Mother Lode Drive remains in its current location. The initial results showed that LOS C or better operations could be provided at all intersections (Table 7). However, these results require three through lanes in each

direction through both crossover intersections rather than the two lanes shown southbound in the initial concept sketch.

Table 7: 2040 PM Peak Hour Traffic Operations with Diverging Diamond

No.	Intersection	(LOS (Delay)
3	Missouri Flat Rd. & Plaza Dr.	C (27.3)
4	Missouri Flat Rd. & US 50 WB Ramps	B (15.6)
5	Missouri Flat Rd. & US 50 EB Ramps	B (11.6)
6	Missouri Flat Rd. & Mother Lode Dr.	A (5.2)

While the diverging diamond appears to be operationally feasible, diverging diamond interchanges often require a larger footprint than the tight diamond interchange that exists today at Missouri Flat Road. This extra space is generally needed to accommodate the roadway curvature required to transition vehicles from driving on the right side of the road to the left side of the road through the interchange. A structure width of 122 feet is recommended to provide all movements and allow for truck clearances through curves.

The initial traffic simulation indicates that full access could be provided at the Mother Lode intersection. However, further evaluation indicates that there would be significant traffic congestion if there are any surges of traffic flow, if the crosswalk across Missouri Flat Road at Mother Lode Drive is regularly activated, or if there is any breakdown of vehicle detector equipment. Because of the unreliability of the traffic operations with the Mother Lode Drive intersection, the diverging diamond can only be recommended if movements at Mother Lode Drive are restricted to right-in/right-out (with no signal or crosswalk) or if Mother Lode Drive is relocated further to the south.

Diverging Diamond with Relocation of Mother Lode Drive

Another variation of the diverging diamond concept would move Mother Lode Drive in addition to constructing a diverging diamond interchange. This would help reduce the potential for queues from the Mother Lode Drive intersection from interfering with operations at the diverging diamond interchange. However, there is still the potential for queues from the Plaza Drive intersection to interfere with the diverging diamond operations.

A traffic simulation was prepared for the diverging diamond with the relocation of Mother Lode Drive. The initial results showed that the operations would be similar to the diverging diamond without the Mother Lode Drive relocation (Table 8).

Table 8: 2040 PM Peak Hour Traffic Operations with Diverging Diamond and Mother Lode Drive Relocation

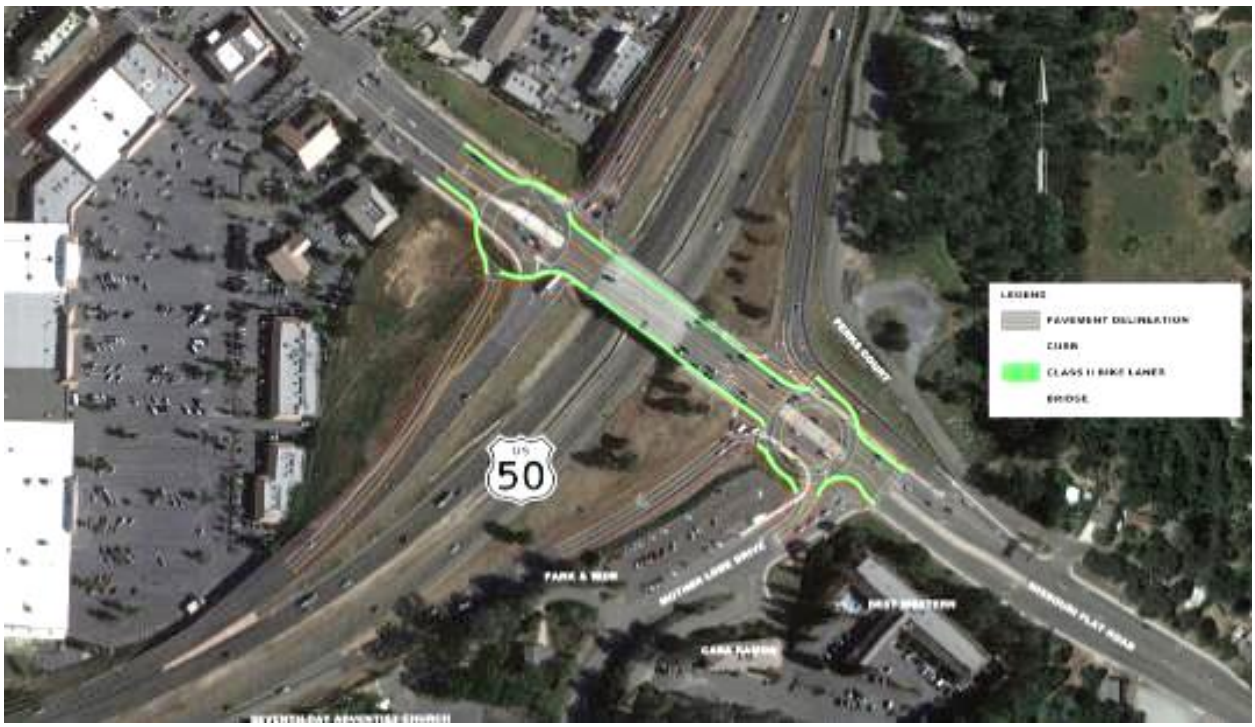
No.	Intersection	LOS (Delay)
3	Missouri Flat Rd. & Plaza Dr.	C (27.3)
4	Missouri Flat Rd. & US 50 WB Ramps	B (15.6)
5	Missouri Flat Rd. & US 50 EB Ramps	B (11.6)
6	Missouri Flat Rd. & Mother Lode Dr.	A (5.2)

Given that the diverging diamond operations would be similar with or without the relocation of Mother Lode Drive, the need for relocation will be driven by the geometric needs of the diverging diamond interchange rather than the operations. Diverging diamond interchanges are often much longer than traditional tight diamond configurations to geometrically accommodate the required roadway horizontal curves.

Roundabout

The roundabout concept would replace the signalized ramp intersections with roundabouts (Figure 8). Mother Lode Drive is assumed to remain in place for this alternative.

Figure 8: Roundabout Concept Sketch



Prior to traffic simulation analysis, a screening evaluation of vehicle volumes and lane requirements was conducted using procedures described in *Roundabouts: An Informational Guide – Second Edition* (2017). Roundabout designs involving up to three lanes were tested. It was determined that the projected 2040 peak hour volumes would exceed the potential capacity of a multi-lane roundabout at this interchange. Therefore, the roundabout concept is not recommended for further evaluation.

Six Lane Tight Diamond

The six-lane tight diamond would use the existing structure but provide three through lanes in each direction across the bridge. A traffic simulation analysis indicates that the six-lane tight diamond interchange could provide LOS D or better operations at the intersections (Table 10).

Table 9: 2040 PM Peak Hour Traffic Operations with Six Lane Tight Diamond

No.	Intersection	LOS (Delay)
3	Missouri Flat Rd. & Plaza Dr.	D (41.5)
4	Missouri Flat Rd. & US 50 WB Ramps	B (19.6)
5	Missouri Flat Rd. & US 50 EB Ramps	D (44.2)
6	Missouri Flat Rd. & Mother Lode Dr.	C (21.5)

Single Point Diamond

The single point diamond concept would replace the two ramp intersections at each end of the overpass with a single ramp intersection in the center of the overpass (Figure 9). This configuration eliminates several conflicting traffic movements, and also increases the spacing between the ramp intersection and the frontage road intersections. The single-point diamond interchange design was the preferred ultimate configuration resulting from the US 50/Missouri Flat Road Project Study Report and Project Report (PSR/PR) process.

A traffic simulation analysis indicates that the single point diamond interchange could provide LOS D or better operations at the intersections (Table 10). The operations of the ramp intersection are affected somewhat by the large size of the intersection, which requires additional time for vehicles to clear the intersection before the signal indication can change.

Figure 9: Single Point Diamond Concept Sketch

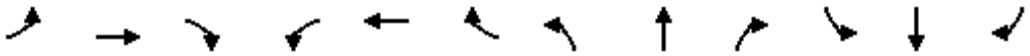
Table 10: 2040 PM Peak Hour Traffic Operations with Single Point Diamond

No.	Intersection	LOS (Delay)
3	Missouri Flat Rd. & Plaza Dr.	D (37.3)
4	Missouri Flat Rd. & US 50 Ramps	D (44.9)
6	Missouri Flat Rd. & Mother Lode Dr.	B (15.8)

CONCLUSIONS

All of the proposed interchange concepts except the roundabout concept could provide LOS D or better operations with projected 2040 peak hour volumes. The hook ramps concept has several operational and design issues that would need to be resolved. The partial cloverleaf concept would require the additional cost of Mother Lode Drive relocation, while the single point diamond concept would require the additional cost of expanding the structure over the freeway to accommodate the large intersection footprint. The diverging diamond concept is promising based on the operations analysis, however, the geometric footprint required to construct it is being finalized which may require relocation of the nearby intersections or widening of the bridge structure to accommodate vehicles transitioning from driving on the right side of the road to the left.

APPENDIX A: EXISTING AND 2040 HIGHWAY CAPACITY MANUAL OUTPUTS



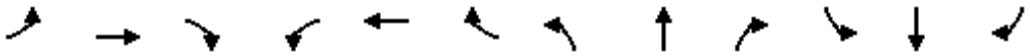
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	257	60	16	445	43	132	19	22	50	27	4
Future Volume (vph)	3	257	60	16	445	43	132	19	22	50	27	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.0	5.0			3.5			3.5	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.97		1.00	0.99			0.98			0.99	
Flt Protected	0.95	1.00		0.95	1.00			0.96			0.97	
Satd. Flow (prot)	1752	1792		1752	1820			1747			1777	
Flt Permitted	0.95	1.00		0.95	1.00			0.73			0.77	
Satd. Flow (perm)	1752	1792		1752	1820			1317			1412	
Peak-hour factor, PHF	0.79	0.79	0.79	0.73	0.73	0.73	0.70	0.70	0.70	0.70	0.70	0.70
Adj. Flow (vph)	4	325	76	22	610	59	189	27	31	71	39	6
RTOR Reduction (vph)	0	9	0	0	3	0	0	5	0	0	2	0
Lane Group Flow (vph)	4	392	0	22	666	0	0	242	0	0	114	0
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases							4			8		
Actuated Green, G (s)	1.0	30.0		1.3	30.3			23.3			23.3	
Effective Green, g (s)	1.0	30.0		1.3	30.3			23.3			23.3	
Actuated g/C Ratio	0.01	0.45		0.02	0.45			0.35			0.35	
Clearance Time (s)	4.0	5.0		4.0	5.0			3.5			3.5	
Vehicle Extension (s)	2.5	2.5		2.5	2.5			2.0			3.0	
Lane Grp Cap (vph)	26	801		33	821			457			490	
v/s Ratio Prot	0.00	0.22		c0.01	c0.37							
v/s Ratio Perm								c0.18			0.08	
v/c Ratio	0.15	0.49		0.67	0.81			0.53			0.23	
Uniform Delay, d1	32.6	13.1		32.7	15.9			17.5			15.6	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	2.0	0.3		37.4	6.0			4.3			1.1	
Delay (s)	34.6	13.5		70.1	21.9			21.8			16.7	
Level of Service	C	B		E	C			C			B	
Approach Delay (s)		13.7			23.4			21.8			16.7	
Approach LOS		B			C			C			B	

Intersection Summary			
HCM 2000 Control Delay	19.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	67.1	Sum of lost time (s)	12.5
Intersection Capacity Utilization	46.0%	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)	15	36	457	21	41	293
Future Volume (Veh/h)	15	36	457	21	41	293
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.85	0.85	0.71	0.71	0.80	0.80
Hourly flow rate (vph)	18	42	644	30	51	366
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			TWLTL
Median storage veh)			2			2
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1127	659			674	
vC1, stage 1 conf vol	659					
vC2, stage 2 conf vol	468					
vCu, unblocked vol	1127	659			674	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3			2.2	
p0 queue free %	96	91			94	
cM capacity (veh/h)	425	462			912	

Direction, Lane #	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	18	42	674	51	366
Volume Left	18	0	0	51	0
Volume Right	0	42	30	0	0
cSH	425	462	1700	912	1700
Volume to Capacity	0.04	0.09	0.40	0.06	0.22
Queue Length 95th (ft)	3	7	0	4	0
Control Delay (s)	13.8	13.6	0.0	9.2	0.0
Lane LOS	B	B		A	
Approach Delay (s)	13.7		0.0	1.1	
Approach LOS	B				

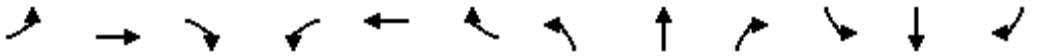
Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	42.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	7	83	228	23	50	101	411	294	34	288	7
Future Volume (vph)	7	7	83	228	23	50	101	411	294	34	288	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.5	3.5	3.5	3.5		3.5	4.4	4.4	3.5	4.4	
Lane Util. Factor		0.95	0.95	0.95	0.95		0.97	0.95	1.00	1.00	0.95	
Frpb, ped/bikes		1.00	1.00	1.00	1.00		1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt		0.89	0.85	1.00	0.95		1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.99	1.00	0.95	0.98		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1570	1504	1665	1613		3433	3471	1563	1770	3427	
Flt Permitted		0.99	1.00	0.95	0.98		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1570	1504	1665	1613		3433	3471	1563	1770	3427	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	8	8	92	253	26	56	112	457	327	38	320	8
RTOR Reduction (vph)	0	36	49	0	22	0	0	0	138	0	1	0
Lane Group Flow (vph)	0	19	4	170	143	0	112	457	189	38	327	0
Confl. Bikes (#/hr)									3			3
Heavy Vehicles (%)	2%	2%	2%	3%	9%	2%	2%	4%	2%	2%	5%	2%
Turn Type	Split	NA	Perm	Split	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	7	7		8	8		1	6		5	2	
Permitted Phases			7						6			
Actuated Green, G (s)		6.6	6.6	14.1	14.1		19.4	54.8	54.8	4.6	40.0	
Effective Green, g (s)		6.6	6.6	14.1	14.1		19.4	54.8	54.8	4.6	40.0	
Actuated g/C Ratio		0.07	0.07	0.15	0.15		0.20	0.58	0.58	0.05	0.42	
Clearance Time (s)		3.5	3.5	3.5	3.5		3.5	4.4	4.4	3.5	4.4	
Vehicle Extension (s)		2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)		109	104	247	239		701	2002	901	85	1442	
v/s Ratio Prot		c0.01		c0.10	0.09		0.03	c0.13		c0.02	c0.10	
v/s Ratio Perm			0.00						0.12			
v/c Ratio		0.17	0.04	0.69	0.60		0.16	0.23	0.21	0.45	0.23	
Uniform Delay, d1		41.6	41.2	38.4	37.8		31.1	9.8	9.7	44.0	17.6	
Progression Factor		1.00	1.00	1.00	1.00		1.18	1.42	3.71	1.00	1.00	
Incremental Delay, d2		0.3	0.1	6.2	2.7		0.0	0.3	0.5	1.4	0.4	
Delay (s)		41.9	41.3	44.6	40.5		36.8	14.1	36.4	45.3	18.0	
Level of Service		D	D	D	D		D	B	D	D	B	
Approach Delay (s)		41.6			42.6			25.1			20.8	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	28.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	14.9
Intersection Capacity Utilization	40.1%	ICU Level of Service	A
Analysis Period (min)	15		

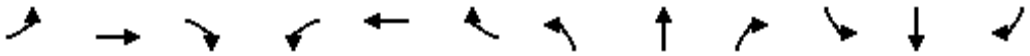
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	487	1	289	368	517	0	0	483	116
Future Volume (vph)	0	0	0	487	1	289	368	517	0	0	483	116
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.1	5.1	5.1	4.0	5.0			5.0	5.0
Lane Util. Factor				0.95	0.95	0.88	0.97	0.95			0.95	1.00
Frpb, ped/bikes				1.00	1.00	1.00	1.00	1.00			1.00	0.99
Flpb, ped/bikes				1.00	1.00	1.00	1.00	1.00			1.00	1.00
Frt				1.00	1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95	0.95	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				1649	1653	2787	3367	3505			3505	1547
Flt Permitted				0.95	0.95	1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)				1649	1653	2787	3367	3505			3505	1547
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	541	1	321	409	574	0	0	537	129
RTOR Reduction (vph)	0	0	0	0	0	254	0	0	0	0	0	67
Lane Group Flow (vph)	0	0	0	270	272	67	409	574	0	0	537	62
Confl. Peds. (#/hr)									2			1
Heavy Vehicles (%)	2%	2%	2%	4%	2%	2%	4%	3%	2%	2%	3%	3%
Turn Type				Split	NA	Perm	Prot	NA			NA	Perm
Protected Phases				4	4		1	6			2	
Permitted Phases						4						2
Actuated Green, G (s)				19.9	19.9	19.9	15.1	65.0			45.9	45.9
Effective Green, g (s)				19.9	19.9	19.9	15.1	65.0			45.9	45.9
Actuated g/C Ratio				0.21	0.21	0.21	0.16	0.68			0.48	0.48
Clearance Time (s)				5.1	5.1	5.1	4.0	5.0			5.0	5.0
Vehicle Extension (s)				1.0	1.0	1.0	1.0	1.0			1.0	1.0
Lane Grp Cap (vph)				345	346	583	535	2398			1693	747
v/s Ratio Prot				0.16	c0.16		c0.12	0.16			c0.15	
v/s Ratio Perm						0.02						0.04
v/c Ratio				0.78	0.79	0.12	0.76	0.24			0.32	0.08
Uniform Delay, d1				35.5	35.5	30.4	38.2	5.7			15.0	13.2
Progression Factor				1.00	1.00	1.00	1.24	0.72			1.73	4.25
Incremental Delay, d2				10.2	10.4	0.0	5.1	0.2			0.5	0.2
Delay (s)				45.7	45.9	30.5	52.4	4.3			26.4	56.4
Level of Service				D	D	C	D	A			C	E
Approach Delay (s)		0.0			40.1			24.3			32.2	
Approach LOS		A			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	31.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	14.1
Intersection Capacity Utilization	49.9%	ICU Level of Service	A
Analysis Period (min)	15		

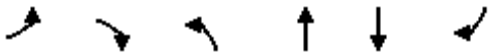
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	119	0	358	0	0	0	0	766	71	161	809	0
Future Volume (vph)	119	0	358	0	0	0	0	766	71	161	809	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.1	4.1	4.1					4.9	4.9	3.5	4.9	
Lane Util. Factor	0.95	0.91	0.95					0.95	1.00	0.97	0.95	
Frpb, ped/bikes	1.00	1.00	1.00					1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00					1.00	1.00	1.00	1.00	
Frt	1.00	0.86	0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1633	1423	1475					3471	1583	3400	3505	
Flt Permitted	0.95	1.00	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1633	1423	1475					3471	1583	3400	3505	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	132	0	398	0	0	0	0	851	79	179	899	0
RTOR Reduction (vph)	0	151	151	0	0	0	0	0	36	0	0	0
Lane Group Flow (vph)	119	57	52	0	0	0	0	851	43	179	899	0
Confl. Peds. (#/hr)												1
Heavy Vehicles (%)	5%	2%	4%	2%	2%	2%	2%	4%	2%	3%	3%	2%
Turn Type	Split	NA	Perm					NA	Perm	Prot	NA	
Protected Phases	8	8						6		5	2	
Permitted Phases			8						6			
Actuated Green, G (s)	12.0	12.0	12.0					45.5	45.5	25.0	74.0	
Effective Green, g (s)	12.0	12.0	12.0					45.5	45.5	25.0	74.0	
Actuated g/C Ratio	0.13	0.13	0.13					0.48	0.48	0.26	0.78	
Clearance Time (s)	4.1	4.1	4.1					4.9	4.9	3.5	4.9	
Vehicle Extension (s)	2.2	2.2	2.2					3.0	3.0	2.0	3.0	
Lane Grp Cap (vph)	206	179	186					1662	758	894	2730	
v/s Ratio Prot	c0.07	0.04						c0.25		0.05	c0.26	
v/s Ratio Perm			0.04						0.03			
v/c Ratio	0.58	0.32	0.28					0.51	0.06	0.20	0.33	
Uniform Delay, d1	39.1	37.8	37.6					17.1	13.3	27.2	3.1	
Progression Factor	1.00	1.00	1.00					0.99	0.74	1.65	0.35	
Incremental Delay, d2	2.7	0.5	0.4					1.1	0.1	0.0	0.3	
Delay (s)	41.8	38.3	38.0					17.9	9.9	45.0	1.4	
Level of Service	D	D	D					B	A	D	A	
Approach Delay (s)		39.0			0.0			17.3			8.6	
Approach LOS		D			A			B			A	

Intersection Summary			
HCM 2000 Control Delay	18.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	49.9%	ICU Level of Service	A
Analysis Period (min)	15		

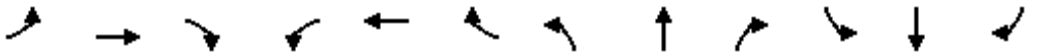
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	119	40	44	718	1092	75
Future Volume (vph)	119	40	44	718	1092	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.9	4.9	4.9
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3433	1583	1719	3505	3505	1398
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3433	1583	1719	3505	3505	1398
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	132	44	49	798	1213	83
RTOR Reduction (vph)	0	38	0	0	0	26
Lane Group Flow (vph)	132	6	49	798	1213	57
Confl. Peds. (#/hr)						1
Heavy Vehicles (%)	2%	2%	5%	3%	3%	13%
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	8		1	6	2	
Permitted Phases		8				2
Actuated Green, G (s)	12.0	12.0	5.1	74.1	65.0	65.0
Effective Green, g (s)	12.0	12.0	5.1	74.1	65.0	65.0
Actuated g/C Ratio	0.13	0.13	0.05	0.78	0.68	0.68
Clearance Time (s)	4.0	4.0	4.0	4.9	4.9	4.9
Vehicle Extension (s)	2.0	2.0	2.0	3.0	3.0	3.0
Lane Grp Cap (vph)	433	199	92	2733	2398	956
v/s Ratio Prot	c0.04		c0.03	0.23	c0.35	
v/s Ratio Perm		0.00				0.04
v/c Ratio	0.30	0.03	0.53	0.29	0.51	0.06
Uniform Delay, d1	37.7	36.4	43.8	3.0	7.2	4.9
Progression Factor	1.00	1.00	1.00	1.00	1.49	2.22
Incremental Delay, d2	0.1	0.0	2.9	0.3	0.7	0.1
Delay (s)	37.9	36.4	46.7	3.2	11.5	11.1
Level of Service	D	D	D	A	B	B
Approach Delay (s)	37.5			5.8	11.5	
Approach LOS	D			A	B	

Intersection Summary			
HCM 2000 Control Delay	11.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	12.9
Intersection Capacity Utilization	47.4%	ICU Level of Service	A
Analysis Period (min)	15		

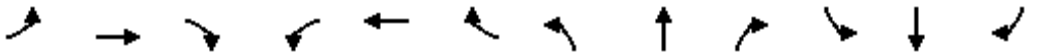
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	205	75	14	53	41	162	21	841	58	224	692	216
Future Volume (vph)	205	75	14	53	41	162	21	841	58	224	692	216
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	1827	1417	1770	1863	1568	1719	3505	1547	1770	3471	1546
Flt Permitted	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 (perm)	3433	1827	1417	1770	1863	1568	1719	3505	1547	1770	3471	1546
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	228	83	16	59	46	180	23	934	64	249	769	240
RTOR Reduction (vph)	0	0	13	0	0	160	0	0	40	0	0	74
Lane Group Flow (vph)	228	83	3	59	46	20	23	934	24	249	769	166
Confl. Peds. (#/hr)									2			2
Heavy Vehicles (%)	2%	4%	14%	2%	2%	3%	5%	3%	2%	2%	4%	2%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Actuated Green, G (s)	11.8	15.8	15.8	6.9	10.9	10.9	2.5	37.3	37.3	20.6	55.4	55.4
Effective Green, g (s)	11.8	15.8	15.8	6.9	10.9	10.9	2.5	37.3	37.3	20.6	55.4	55.4
Actuated g/C Ratio	0.12	0.16	0.16	0.07	0.11	0.11	0.03	0.38	0.38	0.21	0.56	0.56
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0	2.0	3.0	3.0
Lane Grp Cap (vph)	410	292	227	123	205	173	43	1325	585	369	1950	868
v/s Ratio Prot	c0.07	c0.05		0.03	0.02		0.01	c0.27		c0.14	0.22	
v/s Ratio Perm			0.00			0.01			0.02			0.11
v/c Ratio	0.56	0.28	0.01	0.48	0.22	0.12	0.53	0.70	0.04	0.67	0.39	0.19
Uniform Delay, d1	40.9	36.4	34.8	44.1	40.0	39.5	47.5	26.0	19.4	35.9	12.2	10.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	0.2	0.0	1.1	0.2	0.1	6.3	1.7	0.0	3.8	0.1	0.1
Delay (s)	41.9	36.6	34.8	45.2	40.2	39.6	53.7	27.7	19.4	39.7	12.3	10.7
Level of Service	D	D	C	D	D	D	D	C	B	D	B	B
Approach Delay (s)		40.2			40.9			27.8			17.4	
Approach LOS		D			D			C			B	

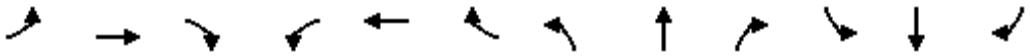
Intersection Summary					
HCM 2000 Control Delay	26.0	HCM 2000 Level of Service	C		
HCM 2000 Volume to Capacity ratio	0.63				
Actuated Cycle Length (s)	98.6	Sum of lost time (s)	18.0		
Intersection Capacity Utilization	60.1%	ICU Level of Service	B		
Analysis Period (min)	15				

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	5	10	35	5	8	39	867	93	114	624	3
Future Volume (vph)	4	5	10	35	5	8	39	867	93	114	624	3
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	5.0		4.0	5.0	5.0
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Frt		0.93			0.98		1.00	0.99		1.00	1.00	0.85
Flt Protected		0.99			0.96		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1630			1741		1770	3446		1770	3438	1182
Flt Permitted		0.92			0.76		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1514			1378		1770	3446		1770	3438	1182
Peak-hour factor, PHF	0.59	0.59	0.59	0.71	0.71	0.71	0.94	0.94	0.94	0.83	0.83	0.83
Adj. Flow (vph)	7	8	17	49	7	11	41	922	99	137	752	4
RTOR Reduction (vph)	0	15	0	0	8	0	0	7	0	0	0	2
Lane Group Flow (vph)	0	17	0	0	59	0	41	1014	0	137	752	2
Confl. Peds. (#/hr)						1			2			5
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	25%	2%	2%	3%	2%	2%	2%	3%	3%	2%	5%	33%
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								6
Actuated Green, G (s)		6.0			6.0		2.5	30.0		8.1	35.6	35.6
Effective Green, g (s)		6.0			6.0		2.5	30.0		8.1	35.6	35.6
Actuated g/C Ratio		0.11			0.11		0.04	0.53		0.14	0.62	0.62
Clearance Time (s)		4.0			4.0		4.0	5.0		4.0	5.0	5.0
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		159			144		77	1810		251	2143	736
v/s Ratio Prot							0.02	c0.29		c0.08	0.22	
v/s Ratio Perm		0.01			c0.04							0.00
v/c Ratio		0.11			0.41		0.53	0.56		0.55	0.35	0.00
Uniform Delay, d1		23.1			23.9		26.7	9.1		22.8	5.2	4.1
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.3			1.9		6.9	0.4		2.4	0.1	0.0
Delay (s)		23.4			25.8		33.6	9.5		25.2	5.3	4.1
Level of Service		C			C		C	A		C	A	A
Approach Delay (s)		23.4			25.8			10.4			8.3	
Approach LOS		C			C			B			A	

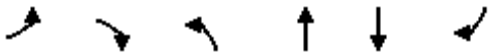
Intersection Summary			
HCM 2000 Control Delay	10.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	57.1	Sum of lost time (s)	13.0
Intersection Capacity Utilization	52.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	0	0	6	0	107	0	904	10	105	540	0
Future Volume (Veh/h)	1	0	0	6	0	107	0	904	10	105	540	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.25	0.25	0.25	0.78	0.78	0.78	0.95	0.95	0.95	0.90	0.90	0.90
Hourly flow rate (vph)	4	0	0	8	0	137	0	952	11	117	600	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1928	1797	600	1792	1792	958	600			963		
vC1, stage 1 conf vol	834	834		958	958							
vC2, stage 2 conf vol	1094	963		834	834							
vCu, unblocked vol	1928	1797	600	1792	1792	958	600			963		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	86	100	100	96	100	56	100			84		
cM capacity (veh/h)	28	185	501	217	235	312	977			715		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	4	145	963	117	600
Volume Left	4	8	0	117	0
Volume Right	0	137	11	0	0
cSH	28	305	977	715	1700
Volume to Capacity	0.14	0.48	0.00	0.16	0.35
Queue Length 95th (ft)	11	61	0	15	0
Control Delay (s)	154.9	27.1	0.0	11.0	0.0
Lane LOS	F	D		B	
Approach Delay (s)	154.9	27.1	0.0	1.8	
Approach LOS	F	D			

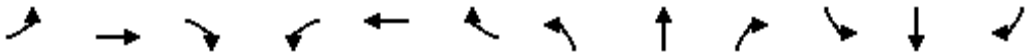
Intersection Summary				
Average Delay	3.2			
Intersection Capacity Utilization	93.4%	ICU Level of Service		F
Analysis Period (min)	15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	13	12	11	896	541	22
Future Volume (Veh/h)	13	12	11	896	541	22
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	15	14	13	1018	615	25
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				TWLTL	TWLTL	
Median storage veh)				2	2	
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1672	628	640			
vC1, stage 1 conf vol	628					
vC2, stage 2 conf vol	1044					
vCu, unblocked vol	1672	628	640			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3	2.2			
p0 queue free %	95	97	99			
cM capacity (veh/h)	290	481	939			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	29	13	1018	640
Volume Left	15	13	0	0
Volume Right	14	0	0	25
cSH	359	939	1700	1700
Volume to Capacity	0.08	0.01	0.60	0.38
Queue Length 95th (ft)	7	1	0	0
Control Delay (s)	15.9	8.9	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	15.9	0.1		0.0
Approach LOS	C			

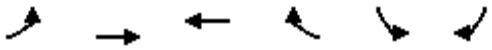
Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	57.2%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	51	0	13	1	0	4	17	844	6	4	419	94
Future Volume (Veh/h)	51	0	13	1	0	4	17	844	6	4	419	94
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	59	0	15	1	0	5	20	981	7	5	487	109
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1578	1580	542	1536	1630	984	596			988		
vC1, stage 1 conf vol	552	552		1024	1024							
vC2, stage 2 conf vol	1026	1028		512	606							
vCu, unblocked vol	1578	1580	542	1536	1630	984	596			988		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	75	100	97	100	100	98	98			99		
cM capacity (veh/h)	240	266	539	248	263	300	976			696		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	74	6	20	988	5	596
Volume Left	59	1	20	0	5	0
Volume Right	15	5	0	7	0	109
cSH	271	290	976	1700	696	1700
Volume to Capacity	0.27	0.02	0.02	0.58	0.01	0.35
Queue Length 95th (ft)	27	2	2	0	1	0
Control Delay (s)	23.2	17.7	8.8	0.0	10.2	0.0
Lane LOS	C	C	A		B	
Approach Delay (s)	23.2	17.7	0.2		0.1	
Approach LOS	C	C				

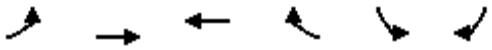
Intersection Summary				
Average Delay	1.2			
Intersection Capacity Utilization	61.7%	ICU Level of Service		B
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	304	178	392	533	185	205
Future Volume (vph)	304	178	392	533	185	205
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.1	4.1	4.6	4.6	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3400	1776	1845	1583	1671	1512
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3400	1776	1845	1583	1671	1512
Peak-hour factor, PHF	0.80	0.80	0.91	0.92	0.81	0.81
Adj. Flow (vph)	380	222	431	579	228	253
RTOR Reduction (vph)	0	0	0	56	0	123
Lane Group Flow (vph)	380	223	431	523	228	130
Confl. Peds. (#/hr)						2
Heavy Vehicles (%)	3%	7%	3%	2%	8%	6%
Turn Type	Prot	NA	NA	pm+ov	Prot	pm+ov
Protected Phases	5	2	6	7	7	5
Permitted Phases				6		4
Actuated Green, G (s)	12.3	36.3	20.0	34.0	14.0	26.3
Effective Green, g (s)	12.3	36.3	20.0	34.0	14.0	26.3
Actuated g/C Ratio	0.21	0.62	0.34	0.58	0.24	0.45
Clearance Time (s)	4.0	4.1	4.1	4.6	4.6	4.0
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	708	1092	625	912	396	673
v/s Ratio Prot	c0.11	0.13	c0.23	0.14	c0.14	0.04
v/s Ratio Perm				0.19		0.05
v/c Ratio	0.54	0.20	0.69	0.57	0.58	0.19
Uniform Delay, d1	20.8	5.0	16.8	7.9	19.9	9.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.0	2.5	0.5	1.3	0.1
Delay (s)	21.2	5.0	19.4	8.5	21.1	10.0
Level of Service	C	A	B	A	C	A
Approach Delay (s)		15.2	13.1		15.3	
Approach LOS		B	B		B	

Intersection Summary			
HCM 2000 Control Delay	14.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	59.0	Sum of lost time (s)	12.7
Intersection Capacity Utilization	50.1%	ICU Level of Service	A
Analysis Period (min)	15		

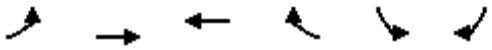
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	31	464	518	79	18	19
Future Volume (Veh/h)	31	464	518	79	18	19
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.78	0.78	0.79	0.79	0.66	0.66
Hourly flow rate (vph)	40	595	656	100	27	29
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	TWLTL			
Median storage veh)			2			
Upstream signal (ft)			750			
pX, platoon unblocked	0.84				0.84	0.84
vC, conflicting volume	756				1331	656
vC1, stage 1 conf vol					656	
vC2, stage 2 conf vol					675	
vCu, unblocked vol	614				1299	495
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	95				93	94
cM capacity (veh/h)	807				368	481

Direction, Lane #	EB 1	WB 1	WB 2	SB 1
Volume Total	635	656	100	56
Volume Left	40	0	0	27
Volume Right	0	0	100	29
cSH	807	1700	1700	419
Volume to Capacity	0.05	0.39	0.06	0.13
Queue Length 95th (ft)	4	0	0	11
Control Delay (s)	1.3	0.0	0.0	14.9
Lane LOS	A			B
Approach Delay (s)	1.3	0.0		14.9
Approach LOS				B

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	59.9%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	135	337	323	33	50	101
Future Volume (Veh/h)	135	337	323	33	50	101
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	180	449	431	44	67	135
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	475				1262	453
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	475				1262	453
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	83				57	78
cM capacity (veh/h)	1082				156	605

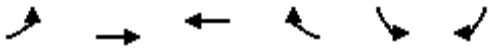
Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	629	475	202
Volume Left	180	0	67
Volume Right	0	44	135
cSH	1082	1700	309
Volume to Capacity	0.17	0.28	0.65
Queue Length 95th (ft)	15	0	107
Control Delay (s)	4.0	0.0	36.2
Lane LOS	A		E
Approach Delay (s)	4.0	0.0	36.2
Approach LOS			E

Intersection Summary			
Average Delay	7.5		
Intersection Capacity Utilization	63.2%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	243	85	141	287	224	238
Future Volume (vph)	243	85	141	287	224	238
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	312	109	181	368	287	305

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total (vph)	421	181	368	592
Volume Left (vph)	0	181	0	287
Volume Right (vph)	109	0	0	305
Hadj (s)	-0.10	0.55	0.05	-0.16
Departure Headway (s)	6.8	7.9	7.4	6.5
Degree Utilization, x	0.79	0.40	0.76	1.06
Capacity (veh/h)	523	450	479	566
Control Delay (s)	31.0	14.8	28.6	80.5
Approach Delay (s)	31.0	24.1		80.5
Approach LOS	D	C		F

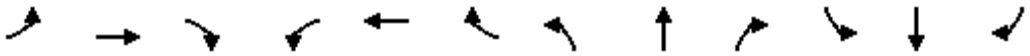
Intersection Summary			
Delay	47.3		
Level of Service	E		
Intersection Capacity Utilization	62.8%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	11	359	883	50	3	9
Future Volume (Veh/h)	11	359	883	50	3	9
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	12	395	970	55	3	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1025				1416	998
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1025				1416	998
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				98	97
cM capacity (veh/h)	673				148	295

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	407	1025	13
Volume Left	12	0	3
Volume Right	0	55	10
cSH	673	1700	240
Volume to Capacity	0.02	0.60	0.05
Queue Length 95th (ft)	1	0	4
Control Delay (s)	0.5	0.0	20.9
Lane LOS	A		C
Approach Delay (s)	0.5	0.0	20.9
Approach LOS			C

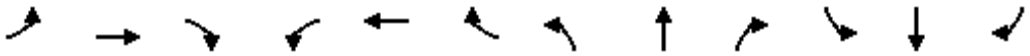
Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	59.5%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	97	258	25	19	780	154	88	23	10	60	5	105
Future Volume (vph)	97	258	25	19	780	154	88	23	10	60	5	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.6		3.0	4.6	4.6		4.1	4.1	3.0	3.0	
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Frt	1.00	0.99		1.00	1.00	0.85		1.00	0.85	1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.96	1.00	0.95	1.00	
Satd. Flow (prot)	1671	3338		1770	1863	1583		1792	1563	1719	1499	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.96	1.00	0.95	1.00	
Satd. Flow (perm)	1671	3338		1770	1863	1583		1792	1563	1719	1499	
Peak-hour factor, PHF	0.88	0.88	0.88	0.89	0.89	0.89	0.77	0.77	0.77	0.89	0.89	0.89
Adj. Flow (vph)	110	293	28	21	876	173	114	30	13	67	6	118
RTOR Reduction (vph)	0	3	0	0	0	29	0	0	11	0	108	0
Lane Group Flow (vph)	110	318	0	21	876	144	0	144	2	67	16	0
Confl. Peds. (#/hr)									1			
Heavy Vehicles (%)	8%	7%	4%	2%	2%	2%	2%	2%	2%	5%	2%	9%
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	
Protected Phases	1	6		5	2		4	4		8	8	
Permitted Phases						2			4			
Actuated Green, G (s)	10.9	60.8		2.5	52.4	52.4		12.5	12.5	8.3	8.3	
Effective Green, g (s)	10.9	60.8		2.5	52.4	52.4		12.5	12.5	8.3	8.3	
Actuated g/C Ratio	0.11	0.62		0.03	0.53	0.53		0.13	0.13	0.08	0.08	
Clearance Time (s)	3.0	4.6		3.0	4.6	4.6		4.1	4.1	3.0	3.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0		2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	184	2054		44	988	839		226	197	144	125	
v/s Ratio Prot	c0.07	0.10		0.01	c0.47			c0.08		c0.04	0.01	
v/s Ratio Perm						0.09			0.00			
v/c Ratio	0.60	0.15		0.48	0.89	0.17		0.64	0.01	0.47	0.13	
Uniform Delay, d1	41.9	8.1		47.5	20.6	12.0		41.0	37.7	43.1	41.9	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2	3.5	0.0		3.0	9.4	0.0		4.3	0.0	0.9	0.2	
Delay (s)	45.3	8.1		50.5	30.0	12.0		45.3	37.7	44.0	42.1	
Level of Service	D	A		D	C	B		D	D	D	D	
Approach Delay (s)		17.6			27.5			44.7			42.7	
Approach LOS		B			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	28.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	98.8	Sum of lost time (s)	14.7
Intersection Capacity Utilization	70.2%	ICU Level of Service	C
Analysis Period (min)	15		

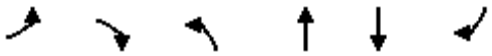
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	3	10	7	4	2	31	188	15	12	193	29
Future Volume (Veh/h)	23	3	10	7	4	2	31	188	15	12	193	29
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	25	3	11	8	4	2	34	204	16	13	210	32
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	536	540	226	544	548	212	242			220		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	536	540	226	544	548	212	242			220		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	94	99	99	98	99	100	97			99		
cM capacity (veh/h)	437	431	811	428	427	826	1319			1343		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	39	14	254	255
Volume Left	25	8	34	13
Volume Right	11	2	16	32
cSH	502	459	1319	1343
Volume to Capacity	0.08	0.03	0.03	0.01
Queue Length 95th (ft)	6	2	2	1
Control Delay (s)	12.8	13.1	1.2	0.5
Lane LOS	B	B	A	A
Approach Delay (s)	12.8	13.1	1.2	0.5
Approach LOS	B	B		

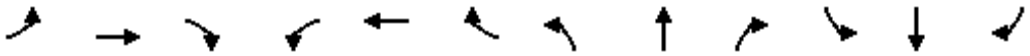
Intersection Summary				
Average Delay	2.0			
Intersection Capacity Utilization	32.0%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	17	35	198	217	13
Future Volume (Veh/h)	5	17	35	198	217	13
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.88	0.83	0.83	0.68	0.68
Hourly flow rate (vph)	6	19	42	239	319	19
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		2				
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	652	328	338			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	652	328	338			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	97	97			
cM capacity (veh/h)	416	711	1216			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	25	42	239	338
Volume Left	6	42	0	0
Volume Right	19	0	0	19
cSH	935	1216	1700	1700
Volume to Capacity	0.03	0.03	0.14	0.20
Queue Length 95th (ft)	2	3	0	0
Control Delay (s)	11.1	8.1	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	11.1	1.2		0.0
Approach LOS	B			

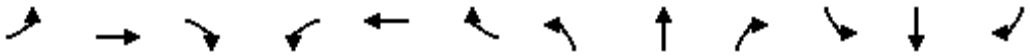
Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	28.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	124	0	22	105	178	0	0	56	62
Future Volume (Veh/h)	0	0	0	124	0	22	105	178	0	0	56	62
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.75	0.75	0.75	0.77	0.77	0.77	0.82	0.82	0.82
Hourly flow rate (vph)	0	0	0	165	0	29	136	231	0	0	68	76
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	638	609	106	609	647	231	144			231		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	638	609	106	609	647	231	144			231		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	56	100	96	91			100		
cM capacity (veh/h)	347	370	946	376	352	806	1432			1331		

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	194	367	144
Volume Left	165	136	0
Volume Right	29	0	76
cSH	409	1432	1700
Volume to Capacity	0.47	0.09	0.08
Queue Length 95th (ft)	62	8	0
Control Delay (s)	21.5	3.4	0.0
Lane LOS	C	A	
Approach Delay (s)	21.5	3.4	0.0
Approach LOS	C		

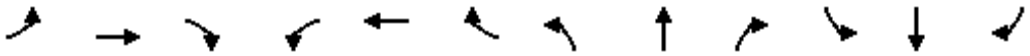
Intersection Summary				
Average Delay	7.7			
Intersection Capacity Utilization	36.7%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	2	98	0	0	0	0	193	87	24	156	0
Future Volume (Veh/h)	90	2	98	0	0	0	0	193	87	24	156	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.92	0.92	0.92	0.83	0.83	0.83	0.69	0.69	0.69
Hourly flow rate (vph)	102	2	111	0	0	0	0	233	105	35	226	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	582	634	226	694	582	286	226			338		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	582	634	226	694	582	286	226			338		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	75	99	86	100	100	100	100			97		
cM capacity (veh/h)	414	384	811	299	411	751	1337			1216		

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	215	338	261
Volume Left	102	0	35
Volume Right	111	105	0
cSH	553	1700	1216
Volume to Capacity	0.39	0.20	0.03
Queue Length 95th (ft)	46	0	2
Control Delay (s)	15.6	0.0	1.3
Lane LOS	C		A
Approach Delay (s)	15.6	0.0	1.3
Approach LOS	C		

Intersection Summary				
Average Delay	4.5			
Intersection Capacity Utilization	46.1%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	222	36	27	299	139	43	49	38	83	31	8
Future Volume (vph)	9	222	36	27	299	139	43	49	38	83	31	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.0	5.0			3.5			3.5	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.98		1.00	0.95			0.96			0.99	
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.97	
Satd. Flow (prot)	1770	1824		1770	1774			1760			1786	
Flt Permitted	0.95	1.00		0.95	1.00			0.88			0.64	
Satd. Flow (perm)	1770	1824		1770	1774			1571			1186	
Peak-hour factor, PHF	0.90	0.90	0.90	0.89	0.89	0.89	0.74	0.74	0.74	0.78	0.78	0.78
Adj. Flow (vph)	10	247	40	30	336	156	58	66	51	106	40	10
RTOR Reduction (vph)	0	5	0	0	12	0	0	18	0	0	3	0
Lane Group Flow (vph)	10	282	0	30	480	0	0	157	0	0	153	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases							4			8		
Actuated Green, G (s)	1.0	38.0		2.5	39.5			13.4			13.4	
Effective Green, g (s)	1.0	38.0		2.5	39.5			13.4			13.4	
Actuated g/C Ratio	0.02	0.57		0.04	0.59			0.20			0.20	
Clearance Time (s)	4.0	5.0		4.0	5.0			3.5			3.5	
Vehicle Extension (s)	2.5	2.5		2.5	2.5			2.0			3.0	
Lane Grp Cap (vph)	26	1043		66	1055			317			239	
v/s Ratio Prot	0.01	0.15		c0.02	c0.27							
v/s Ratio Perm								0.10			c0.13	
v/c Ratio	0.38	0.27		0.45	0.45			0.50			0.64	
Uniform Delay, d1	32.4	7.2		31.3	7.5			23.5			24.3	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	6.8	0.6		3.6	1.4			0.4			5.5	
Delay (s)	39.2	7.8		34.9	8.9			24.0			29.8	
Level of Service	D	A		C	A			C			C	
Approach Delay (s)		8.9			10.4			24.0			29.8	
Approach LOS		A			B			C			C	

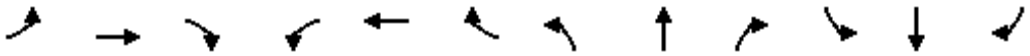
Intersection Summary			
HCM 2000 Control Delay	14.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	66.4	Sum of lost time (s)	12.5
Intersection Capacity Utilization	44.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	26	59	408	12	29	317
Future Volume (Veh/h)	26	59	408	12	29	317
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.71	0.71	0.90	0.90	0.93	0.93
Hourly flow rate (vph)	37	83	453	13	31	341
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			TWLTL
Median storage veh)			2			2
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	862	460			466	
vC1, stage 1 conf vol	460					
vC2, stage 2 conf vol	403					
vCu, unblocked vol	862	460			466	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3			2.2	
p0 queue free %	93	86			97	
cM capacity (veh/h)	523	602			1095	

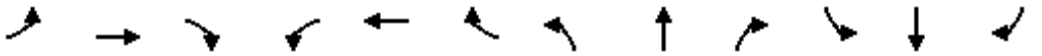
Direction, Lane #	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	37	83	466	31	341
Volume Left	37	0	0	31	0
Volume Right	0	83	13	0	0
cSH	523	602	1700	1095	1700
Volume to Capacity	0.07	0.14	0.27	0.03	0.20
Queue Length 95th (ft)	6	12	0	2	0
Control Delay (s)	12.4	11.9	0.0	8.4	0.0
Lane LOS	B	B		A	
Approach Delay (s)	12.1		0.0	0.7	
Approach LOS	B				

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	34.1%	ICU Level of Service	A
Analysis Period (min)	15		



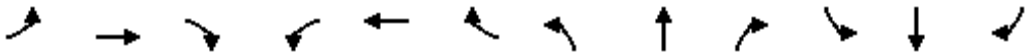
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	51	331	432	43	50	336	292	419	47	338	19
Future Volume (vph)	28	51	331	432	43	50	336	292	419	47	338	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.5	3.5	3.5	3.5		3.5	4.4	4.4	3.5	4.4	
Lane Util. Factor		0.95	0.95	0.95	0.95		0.97	0.95	1.00	1.00	0.95	
Frpb, ped/bikes		0.99	0.99	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt		0.91	0.85	1.00	0.97		1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.99	1.00	0.95	0.97		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1579	1483	1681	1665		3433	3539	1583	1770	3508	
Flt Permitted		0.99	1.00	0.95	0.97		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1579	1483	1681	1665		3433	3539	1583	1770	3508	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	29	54	348	455	45	53	354	307	441	49	356	20
RTOR Reduction (vph)	0	74	180	0	9	0	0	0	248	0	3	0
Lane Group Flow (vph)	0	148	29	278	266	0	354	307	193	49	373	0
Confl. Peds. (#/hr)	2		1				1					2
Turn Type	Split	NA	Perm	Split	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	7	7		8	8		1	6		5	2	
Permitted Phases			7						6			
Actuated Green, G (s)		13.2	13.2	20.3	20.3		13.4	41.6	41.6	5.0	33.2	
Effective Green, g (s)		13.2	13.2	20.3	20.3		13.4	41.6	41.6	5.0	33.2	
Actuated g/C Ratio		0.14	0.14	0.21	0.21		0.14	0.44	0.44	0.05	0.35	
Clearance Time (s)		3.5	3.5	3.5	3.5		3.5	4.4	4.4	3.5	4.4	
Vehicle Extension (s)		2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)		219	206	359	355		484	1549	693	93	1225	
v/s Ratio Prot		c0.09		c0.17	0.16		c0.10	0.09		c0.03	c0.11	
v/s Ratio Perm			0.02						0.12			
v/c Ratio		0.68	0.14	0.77	0.75		0.73	0.20	0.28	0.53	0.30	
Uniform Delay, d1		38.9	35.9	35.2	35.0		39.1	16.4	17.1	43.8	22.5	
Progression Factor		1.00	1.00	1.00	1.00		1.13	1.22	2.76	1.00	1.00	
Incremental Delay, d2		6.3	0.1	9.2	7.4		4.7	0.3	1.0	2.5	0.6	
Delay (s)		45.2	36.0	44.3	42.3		48.8	20.4	48.1	46.3	23.1	
Level of Service		D	D	D	D		D	C	D	D	C	
Approach Delay (s)		40.8			43.3			40.6			25.8	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	38.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	14.9
Intersection Capacity Utilization	63.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	636	0	394	366	653	0	0	914	187
Future Volume (vph)	0	0	0	636	0	394	366	653	0	0	914	187
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.1	5.1	5.1	4.0	5.0			5.0	5.0
Lane Util. Factor				0.95	0.95	0.88	0.97	0.95			0.95	1.00
Frpb, ped/bikes				1.00	1.00	1.00	1.00	1.00			1.00	0.99
Flpb, ped/bikes				1.00	1.00	1.00	1.00	1.00			1.00	1.00
Frt				1.00	1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95	0.95	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				1665	1665	2787	3433	3539			3539	1560
Flt Permitted				0.95	0.95	1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)				1665	1665	2787	3433	3539			3539	1560
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	669	0	415	385	687	0	0	962	197
RTOR Reduction (vph)	0	0	0	0	0	287	0	0	0	0	0	108
Lane Group Flow (vph)	0	0	0	334	335	128	385	687	0	0	962	89
Confl. Peds. (#/hr)												1
Confl. Bikes (#/hr)									3			2
Heavy Vehicles (%)	2%	2%	2%	3%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type				Split	NA	Perm	Prot	NA			NA	Perm
Protected Phases				4	4		1	6			2	
Permitted Phases						4						2
Actuated Green, G (s)				23.8	23.8	23.8	14.2	61.1			42.9	42.9
Effective Green, g (s)				23.8	23.8	23.8	14.2	61.1			42.9	42.9
Actuated g/C Ratio				0.25	0.25	0.25	0.15	0.64			0.45	0.45
Clearance Time (s)				5.1	5.1	5.1	4.0	5.0			5.0	5.0
Vehicle Extension (s)				1.0	1.0	1.0	1.0	1.0			1.0	1.0
Lane Grp Cap (vph)				417	417	698	513	2276			1598	704
v/s Ratio Prot				0.20	c0.20		c0.11	0.19			c0.27	
v/s Ratio Perm						0.05						0.06
v/c Ratio				0.80	0.80	0.18	0.75	0.30			0.60	0.13
Uniform Delay, d1				33.4	33.4	28.0	38.7	7.5			19.6	15.2
Progression Factor				1.00	1.00	1.00	1.13	1.13			1.05	2.12
Incremental Delay, d2				10.0	10.1	0.0	4.2	0.3			1.5	0.3
Delay (s)				43.4	43.5	28.0	47.9	8.8			22.1	32.5
Level of Service				D	D	C	D	A			C	C
Approach Delay (s)		0.0			37.5			22.8			23.9	
Approach LOS		A			D			C			C	

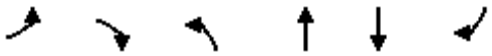
Intersection Summary			
HCM 2000 Control Delay	28.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	14.1
Intersection Capacity Utilization	65.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	191	4	587	0	0	0	0	828	106	376	1174	0
Future Volume (vph)	191	4	587	0	0	0	0	828	106	376	1174	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.1	4.1	4.1					4.9	4.9	3.5	4.9	
Lane Util. Factor	0.95	0.91	0.95					0.95	1.00	0.97	0.95	
Frpb, ped/bikes	1.00	1.00	1.00					1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00					1.00	1.00	1.00	1.00	
Frt	1.00	0.86	0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1681	1455	1504					3539	1562	3433	3539	
Flt Permitted	0.95	1.00	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1681	1455	1504					3539	1562	3433	3539	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	201	4	618	0	0	0	0	872	112	396	1236	0
RTOR Reduction (vph)	0	66	66	0	0	0	0	0	42	0	0	0
Lane Group Flow (vph)	181	255	255	0	0	0	0	872	70	396	1236	0
Confl. Peds. (#/hr)												1
Confl. Bikes (#/hr)									3			2
Turn Type	Split	NA	Perm					NA	Perm	Prot	NA	
Protected Phases	8	8						6		5	2	
Permitted Phases			8						6			
Actuated Green, G (s)	20.5	20.5	20.5					37.0	37.0	25.0	65.5	
Effective Green, g (s)	20.5	20.5	20.5					37.0	37.0	25.0	65.5	
Actuated g/C Ratio	0.22	0.22	0.22					0.39	0.39	0.26	0.69	
Clearance Time (s)	4.1	4.1	4.1					4.9	4.9	3.5	4.9	
Vehicle Extension (s)	2.2	2.2	2.2					3.0	3.0	2.0	3.0	
Lane Grp Cap (vph)	362	313	324					1378	608	903	2440	
v/s Ratio Prot	0.11	c0.18						c0.25		0.12	c0.35	
v/s Ratio Perm			0.17						0.04			
v/c Ratio	0.50	0.82	0.79					0.63	0.11	0.44	0.51	
Uniform Delay, d1	32.7	35.4	35.2					23.5	18.5	29.2	7.0	
Progression Factor	1.00	1.00	1.00					1.04	0.98	1.29	0.27	
Incremental Delay, d2	0.6	14.4	11.3					2.2	0.4	0.1	0.6	
Delay (s)	33.3	49.8	46.4					26.6	18.5	37.7	2.5	
Level of Service	C	D	D					C	B	D	A	
Approach Delay (s)		44.9			0.0			25.6			11.1	
Approach LOS		D			A			C			B	

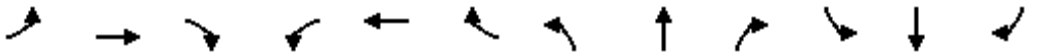
Intersection Summary			
HCM 2000 Control Delay	23.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	65.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	168	64	52	766	1545	216
Future Volume (vph)	168	64	52	766	1545	216
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.9	4.9	4.9
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3433	1568	1770	3539	3539	1547
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3433	1568	1770	3539	3539	1547
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	177	67	55	806	1626	227
RTOR Reduction (vph)	0	58	0	0	0	65
Lane Group Flow (vph)	177	9	55	806	1626	162
Confl. Peds. (#/hr)						1
Confl. Bikes (#/hr)						2
Heavy Vehicles (%)	2%	3%	2%	2%	2%	2%
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	8		1	6	2	
Permitted Phases		8				2
Actuated Green, G (s)	12.9	12.9	6.5	73.2	62.7	62.7
Effective Green, g (s)	12.9	12.9	6.5	73.2	62.7	62.7
Actuated g/C Ratio	0.14	0.14	0.07	0.77	0.66	0.66
Clearance Time (s)	4.0	4.0	4.0	4.9	4.9	4.9
Vehicle Extension (s)	2.0	2.0	2.0	3.0	3.0	3.0
Lane Grp Cap (vph)	466	212	121	2726	2335	1021
v/s Ratio Prot	c0.05		c0.03	0.23	c0.46	
v/s Ratio Perm		0.01				0.10
v/c Ratio	0.38	0.04	0.45	0.30	0.70	0.16
Uniform Delay, d1	37.4	35.7	42.5	3.2	10.2	6.1
Progression Factor	1.00	1.00	1.00	1.00	1.23	1.53
Incremental Delay, d2	0.2	0.0	1.0	0.3	1.4	0.3
Delay (s)	37.6	35.7	43.5	3.5	13.9	9.7
Level of Service	D	D	D	A	B	A
Approach Delay (s)	37.1			6.1	13.4	
Approach LOS	D			A	B	

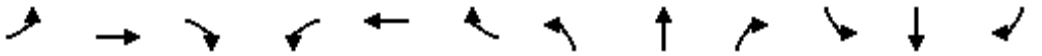
Intersection Summary			
HCM 2000 Control Delay	13.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	12.9
Intersection Capacity Utilization	55.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	461	34	42	31	48	179	47	758	22	146	1136	327
Future Volume (vph)	461	34	42	31	48	179	47	758	22	146	1136	327
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
Lane Util. Factor	*1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3539	1863	1583	1770	1863	1557	1770	3539	1451	1770	3539	1549
Flt Permitted	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 (perm)	3539	1863	1583	1770	1863	1557	1770	3539	1451	1770	3539	1549
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	485	36	44	33	51	188	49	798	23	154	1196	344
RTOR Reduction (vph)	0	0	32	0	0	169	0	0	15	0	0	87
Lane Group Flow (vph)	485	36	12	33	51	19	49	798	8	154	1196	257
Confl. Bikes (#/hr)						2			1			2
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	9%	2%	2%	2%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Actuated Green, G (s)	19.6	25.1	25.1	4.1	9.6	9.6	6.1	35.4	35.4	13.3	42.6	42.6
Effective Green, g (s)	19.6	25.1	25.1	4.1	9.6	9.6	6.1	35.4	35.4	13.3	42.6	42.6
Actuated g/C Ratio	0.20	0.26	0.26	0.04	0.10	0.10	0.06	0.37	0.37	0.14	0.44	0.44
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0	2.0	3.0	3.0
Lane Grp Cap (vph)	723	487	414	75	186	155	112	1306	535	245	1572	688
v/s Ratio Prot	c0.14	0.02		0.02	c0.03		0.03	0.23		c0.09	c0.34	
v/s Ratio Perm			0.01			0.01			0.01			0.17
v/c Ratio	0.67	0.07	0.03	0.44	0.27	0.12	0.44	0.61	0.02	0.63	0.76	0.37
Uniform Delay, d1	35.2	26.7	26.3	44.8	39.9	39.3	43.2	24.6	19.2	39.0	22.4	17.8
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	1.9	0.0	0.0	1.5	0.3	0.1	1.0	0.9	0.0	3.6	2.2	0.3
Delay (s)	37.1	26.7	26.3	46.3	40.2	39.4	44.2	25.5	19.2	42.6	24.6	18.1
Level of Service	D	C	C	D	D	D	D	C	B	D	C	B
Approach Delay (s)		35.6			40.4			26.4			24.9	
Approach LOS		D			D			C			C	

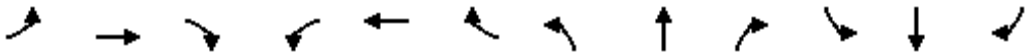
Intersection Summary			
HCM 2000 Control Delay	28.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	95.9	Sum of lost time (s)	18.0
Intersection Capacity Utilization	66.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	9	81	105	14	57	70	698	51	96	1028	7
Future Volume (vph)	14	9	81	105	14	57	70	698	51	96	1028	7
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	5.0		4.0	5.0	5.0
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes		0.98			1.00		1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Frt		0.89			0.96		1.00	0.99		1.00	1.00	0.85
Flt Protected		0.99			0.97		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1627			1720		1770	3498		1770	3539	1534
Flt Permitted		0.95			0.76		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1558			1344		1770	3498		1770	3539	1534
Peak-hour factor, PHF	0.81	0.81	0.81	0.96	0.96	0.96	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	17	11	100	109	15	59	75	751	55	103	1105	8
RTOR Reduction (vph)	0	76	0	0	17	0	0	6	0	0	0	4
Lane Group Flow (vph)	0	52	0	0	166	0	75	800	0	103	1105	4
Confl. Peds. (#/hr)												7
Confl. Bikes (#/hr)			1						2			
Heavy Vehicles (%)	2%	2%	2%	3%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								6
Actuated Green, G (s)		15.1			15.1		6.8	28.3		7.7	29.2	29.2
Effective Green, g (s)		15.1			15.1		6.8	28.3		7.7	29.2	29.2
Actuated g/C Ratio		0.24			0.24		0.11	0.44		0.12	0.46	0.46
Clearance Time (s)		4.0			4.0		4.0	5.0		4.0	5.0	5.0
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		367			316		187	1544		212	1612	698
v/s Ratio Prot							0.04	0.23		c0.06	c0.31	
v/s Ratio Perm		0.03			c0.12							0.00
v/c Ratio		0.14			0.53		0.40	0.52		0.49	0.69	0.01
Uniform Delay, d1		19.4			21.4		26.7	13.0		26.4	13.8	9.5
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.2			1.6		1.4	0.3		1.8	1.2	0.0
Delay (s)		19.5			23.0		28.2	13.3		28.1	15.0	9.5
Level of Service		B			C		C	B		C	B	A
Approach Delay (s)		19.5			23.0			14.5			16.1	
Approach LOS		B			C			B			B	

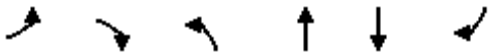
Intersection Summary			
HCM 2000 Control Delay	16.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	64.1	Sum of lost time (s)	13.0
Intersection Capacity Utilization	59.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	0	0	12	1	140	2	682	29	142	1026	1
Future Volume (Veh/h)	2	0	0	12	1	140	2	682	29	142	1026	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.25	0.25	0.25	0.85	0.85	0.85	0.92	0.92	0.92	0.96	0.96	0.96
Hourly flow rate (vph)	8	0	0	14	1	165	2	741	32	148	1069	1
Pedestrians											1	
Lane Width (ft)											12.0	
Walking Speed (ft/s)											4.0	
Percent Blockage											0	
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2293	2142	1070	2126	2127	758	1070			773		
vC1, stage 1 conf vol	1366	1366		761	761							
vC2, stage 2 conf vol	928	777		1365	1366							
vCu, unblocked vol	2293	2142	1070	2126	2127	758	1070			773		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	80	100	100	90	99	59	100			82		
cM capacity (veh/h)	40	147	269	136	159	407	651			833		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	8	180	775	148	1070
Volume Left	8	14	2	148	0
Volume Right	0	165	32	0	1
cSH	40	350	651	833	1700
Volume to Capacity	0.20	0.51	0.00	0.18	0.63
Queue Length 95th (ft)	16	70	0	16	0
Control Delay (s)	116.4	25.7	0.1	10.3	0.0
Lane LOS	F	D	A	B	
Approach Delay (s)	116.4	25.7	0.1	1.2	
Approach LOS	F	D			

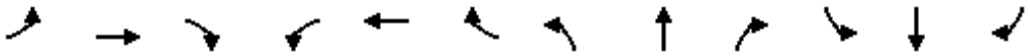
Intersection Summary				
Average Delay	3.3			
Intersection Capacity Utilization	111.1%	ICU Level of Service	H	
Analysis Period (min)	15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	18	18	7	663	1021	11
Future Volume (Veh/h)	18	18	7	663	1021	11
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	20	20	8	729	1122	12
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				TWLTL	TWLTL	
Median storage veh)				2	2	
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1873	1128	1134			
vC1, stage 1 conf vol	1128					
vC2, stage 2 conf vol	745					
vCu, unblocked vol	1873	1128	1134			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3	2.2			
p0 queue free %	92	92	99			
cM capacity (veh/h)	260	249	616			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	40	8	729	1134
Volume Left	20	8	0	0
Volume Right	20	0	0	12
cSH	254	616	1700	1700
Volume to Capacity	0.16	0.01	0.43	0.67
Queue Length 95th (ft)	14	1	0	0
Control Delay (s)	21.8	10.9	0.0	0.0
Lane LOS	C	B		
Approach Delay (s)	21.8	0.1		0.0
Approach LOS	C			

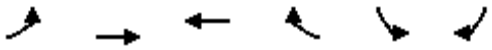
Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	64.4%	ICU Level of Service	C
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	78	1	30	1	1	1	7	573	2	4	934	62
Future Volume (Veh/h)	78	1	30	1	1	1	7	573	2	4	934	62
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	83	1	32	1	1	1	7	610	2	4	994	66
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1660	1661	1027	1660	1693	611	1060			612		
vC1, stage 1 conf vol	1035	1035		625	625							
vC2, stage 2 conf vol	626	626		1034	1068							
vCu, unblocked vol	1660	1661	1027	1660	1693	611	1060			612		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	66	100	89	100	100	100	99			100		
cM capacity (veh/h)	242	265	285	215	254	494	657			962		

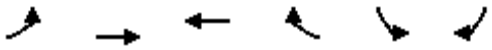
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	116	3	7	612	4	1060
Volume Left	83	1	7	0	4	0
Volume Right	32	1	0	2	0	66
cSH	252	282	657	1700	962	1700
Volume to Capacity	0.46	0.01	0.01	0.36	0.00	0.62
Queue Length 95th (ft)	56	1	1	0	0	0
Control Delay (s)	30.8	17.9	10.5	0.0	8.8	0.0
Lane LOS	D	C	B		A	
Approach Delay (s)	30.8	17.9	0.1		0.0	
Approach LOS	D	C				

Intersection Summary				
Average Delay	2.1			
Intersection Capacity Utilization	71.8%	ICU Level of Service		C
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	232	259	253	327	717	304
Future Volume (vph)	232	259	253	327	717	304
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.1	4.1	4.6	4.6	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1863	1863	1583	1770	1553
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1863	1863	1583	1770	1553
Peak-hour factor, PHF	0.94	0.94	0.90	0.90	0.88	0.88
Adj. Flow (vph)	247	276	281	363	815	345
RTOR Reduction (vph)	0	0	0	93	0	141
Lane Group Flow (vph)	247	276	281	270	815	204
Heavy Vehicles (%)	2%	2%	2%	2%	2%	4%
Turn Type	Prot	NA	NA	pm+ov	Prot	pm+ov
Protected Phases	5	2	6	7	7	5
Permitted Phases				6		4
Actuated Green, G (s)	9.3	27.9	14.6	44.9	30.3	39.6
Effective Green, g (s)	9.3	27.9	14.6	44.9	30.3	39.6
Actuated g/C Ratio	0.14	0.42	0.22	0.67	0.45	0.59
Clearance Time (s)	4.0	4.1	4.1	4.6	4.6	4.0
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	477	776	406	1062	801	919
v/s Ratio Prot	c0.07	0.15	c0.15	0.11	c0.46	0.03
v/s Ratio Perm				0.06		0.10
v/c Ratio	0.52	0.36	0.69	0.25	1.02	0.22
Uniform Delay, d1	26.7	13.3	24.1	4.4	18.3	6.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.4	0.1	4.1	0.0	36.2	0.0
Delay (s)	27.1	13.4	28.2	4.4	54.5	6.5
Level of Service	C	B	C	A	D	A
Approach Delay (s)		19.9	14.8		40.2	
Approach LOS		B	B		D	

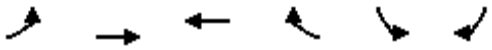
Intersection Summary			
HCM 2000 Control Delay	28.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	66.9	Sum of lost time (s)	12.7
Intersection Capacity Utilization	70.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	14	508	517	40	52	48
Future Volume (Veh/h)	14	508	517	40	52	48
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.91	0.91	0.85	0.85	0.79	0.79
Hourly flow rate (vph)	15	558	608	47	66	61
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	TWLTL			
Median storage veh)			2			
Upstream signal (ft)			750			
pX, platoon unblocked	0.89				0.89	0.89
vC, conflicting volume	655				1196	608
vC1, stage 1 conf vol					608	
vC2, stage 2 conf vol					588	
vCu, unblocked vol	555				1160	502
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	98				84	88
cM capacity (veh/h)	908				416	509

Direction, Lane #	EB 1	WB 1	WB 2	SB 1
Volume Total	573	608	47	127
Volume Left	15	0	0	66
Volume Right	0	0	47	61
cSH	908	1700	1700	456
Volume to Capacity	0.02	0.36	0.03	0.28
Queue Length 95th (ft)	1	0	0	28
Control Delay (s)	0.5	0.0	0.0	15.9
Lane LOS	A			C
Approach Delay (s)	0.5	0.0		15.9
Approach LOS				C

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	50.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	88	402	331	36	22	147
Future Volume (Veh/h)	88	402	331	36	22	147
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	95	432	356	39	24	158
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	395				998	376
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	395				998	376
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	92				90	76
cM capacity (veh/h)	1164				248	671

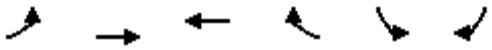
Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	527	395	182
Volume Left	95	0	24
Volume Right	0	39	158
cSH	1164	1700	548
Volume to Capacity	0.08	0.23	0.33
Queue Length 95th (ft)	7	0	36
Control Delay (s)	2.3	0.0	14.8
Lane LOS	A		B
Approach Delay (s)	2.3	0.0	14.8
Approach LOS			B

Intersection Summary			
Average Delay	3.5		
Intersection Capacity Utilization	65.9%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	324	205	211	265	99	148
Future Volume (vph)	324	205	211	265	99	148
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	345	218	224	282	105	157

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total (vph)	563	224	282	262
Volume Left (vph)	0	224	0	105
Volume Right (vph)	218	0	0	157
Hadj (s)	-0.20	0.53	0.03	-0.25
Departure Headway (s)	5.4	6.6	6.1	6.2
Degree Utilization, x	0.84	0.41	0.48	0.45
Capacity (veh/h)	657	526	569	543
Control Delay (s)	30.4	13.1	13.5	14.2
Approach Delay (s)	30.4	13.3		14.2
Approach LOS	D	B		B

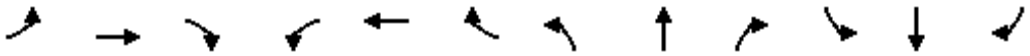
Intersection Summary			
Delay	20.7		
Level of Service	C		
Intersection Capacity Utilization	65.8%	ICU Level of Service	C
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	9	890	583	45	9	15
Future Volume (Veh/h)	9	890	583	45	9	15
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	10	978	641	49	10	16
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	690				1664	666
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	690				1664	666
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				91	97
cM capacity (veh/h)	905				105	460

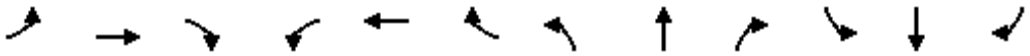
Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	988	690	26
Volume Left	10	0	10
Volume Right	0	49	16
cSH	905	1700	201
Volume to Capacity	0.01	0.41	0.13
Queue Length 95th (ft)	1	0	11
Control Delay (s)	0.3	0.0	25.6
Lane LOS	A		D
Approach Delay (s)	0.3	0.0	25.6
Approach LOS			D

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	64.0%	ICU Level of Service	C
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	93	775	76	19	415	114	65	25	27	213	32	113
Future Volume (vph)	93	775	76	19	415	114	65	25	27	213	32	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.6		3.0	4.6	4.6		4.1	4.1	3.0	3.0	
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Frt	1.00	0.99		1.00	1.00	0.85		1.00	0.85	1.00	0.88	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.97	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3492		1770	1863	1583		1798	1583	1770	1617	
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.97	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3492		1770	1863	1583		1798	1583	1770	1617	
Peak-hour factor, PHF	0.98	0.98	0.98	0.87	0.87	0.87	0.92	0.92	0.92	0.82	0.82	0.82
Adj. Flow (vph)	95	791	78	22	477	131	71	27	29	260	39	138
RTOR Reduction (vph)	0	5	0	0	0	56	0	0	26	0	81	0
Lane Group Flow (vph)	95	864	0	22	477	75	0	98	3	260	96	0
Confl. Peds. (#/hr)												1
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	Perm	Split	NA	
Protected Phases	1	6		5	2		4	4		8	8	
Permitted Phases						2			4			
Actuated Green, G (s)	7.4	32.3		2.3	27.2	27.2		7.6	7.6	21.2	21.2	
Effective Green, g (s)	7.4	32.3		2.3	27.2	27.2		7.6	7.6	21.2	21.2	
Actuated g/C Ratio	0.09	0.41		0.03	0.35	0.35		0.10	0.10	0.27	0.27	
Clearance Time (s)	3.0	4.6		3.0	4.6	4.6		4.1	4.1	3.0	3.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0		2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	167	1444		52	648	551		174	154	480	438	
v/s Ratio Prot	c0.05	0.25		0.01	c0.26			c0.05		c0.15	0.06	
v/s Ratio Perm						0.05			0.00			
v/c Ratio	0.57	0.60		0.42	0.74	0.14		0.56	0.02	0.54	0.22	
Uniform Delay, d1	33.8	17.8		37.2	22.3	17.4		33.7	31.9	24.3	22.0	
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.6	0.4		2.0	3.8	0.0		2.5	0.0	0.7	0.1	
Delay (s)	36.5	18.3		39.3	26.1	17.5		36.1	31.9	25.0	22.1	
Level of Service	D	B		D	C	B		D	C	C	C	
Approach Delay (s)		20.1			24.7			35.2			23.8	
Approach LOS		C			C			D			C	

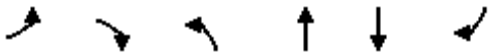
Intersection Summary			
HCM 2000 Control Delay	23.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	78.1	Sum of lost time (s)	14.7
Intersection Capacity Utilization	59.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	79	9	35	6	3	2	40	212	20	20	357	50
Future Volume (Veh/h)	79	9	35	6	3	2	40	212	20	20	357	50
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	86	10	38	7	3	2	43	230	22	22	388	54
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	790	797	415	829	813	241	442			252		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	790	797	415	829	813	241	442			252		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	71	97	94	97	99	100	96			98		
cM capacity (veh/h)	292	302	637	255	296	798	1118			1313		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	134	12	295	464
Volume Left	86	7	43	22
Volume Right	38	2	22	54
cSH	346	299	1118	1313
Volume to Capacity	0.39	0.04	0.04	0.02
Queue Length 95th (ft)	44	3	3	1
Control Delay (s)	21.8	17.5	1.5	0.5
Lane LOS	C	C	A	A
Approach Delay (s)	21.8	17.5	1.5	0.5
Approach LOS	C	C		

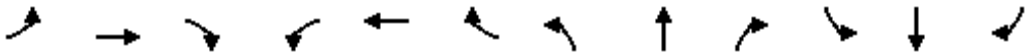
Intersection Summary				
Average Delay	4.2			
Intersection Capacity Utilization	43.7%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	17	32	29	264	395	8
Future Volume (Veh/h)	17	32	29	264	395	8
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.67	0.67	0.78	0.78	0.96	0.96
Hourly flow rate (vph)	25	48	37	338	411	8
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		2				
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	827	415	419			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	827	415	419			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	92	92	97			
cM capacity (veh/h)	330	637	1140			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	73	37	338	419
Volume Left	25	37	0	0
Volume Right	48	0	0	8
cSH	964	1140	1700	1700
Volume to Capacity	0.08	0.03	0.20	0.25
Queue Length 95th (ft)	6	3	0	0
Control Delay (s)	13.1	8.3	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	13.1	0.8		0.0
Approach LOS	B			

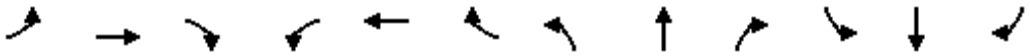
Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	34.1%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	82	0	38	98	160	0	0	88	53
Future Volume (Veh/h)	0	0	0	82	0	38	98	160	0	0	88	53
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.81	0.81	0.81	0.73	0.73	0.73	0.84	0.84	0.84
Hourly flow rate (vph)	0	0	0	101	0	47	134	219	0	0	105	63
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	670	624	136	624	655	219	168			219		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	670	624	136	624	655	219	168			219		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	73	100	94	90			100		
cM capacity (veh/h)	324	364	912	369	349	821	1410			1350		

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	148	353	168
Volume Left	101	134	0
Volume Right	47	0	63
cSH	447	1410	1700
Volume to Capacity	0.33	0.10	0.10
Queue Length 95th (ft)	36	8	0
Control Delay (s)	17.0	3.5	0.0
Lane LOS	C	A	
Approach Delay (s)	17.0	3.5	0.0
Approach LOS	C		

Intersection Summary				
Average Delay	5.6			
Intersection Capacity Utilization	38.6%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	106	0	113	0	0	0	0	152	95	43	127	0
Future Volume (Veh/h)	106	0	113	0	0	0	0	152	95	43	127	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.92	0.92	0.92	0.65	0.65	0.65	0.90	0.90	0.90
Hourly flow rate (vph)	123	0	131	0	0	0	0	234	146	48	141	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	544	617	141	675	544	307	141			380		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	544	617	141	675	544	307	141			380		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	72	100	86	100	100	100	100			96		
cM capacity (veh/h)	436	389	907	305	428	733	1442			1178		

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	254	380	189
Volume Left	123	0	48
Volume Right	131	146	0
cSH	595	1700	1178
Volume to Capacity	0.43	0.22	0.04
Queue Length 95th (ft)	53	0	3
Control Delay (s)	15.5	0.0	2.3
Lane LOS	C		A
Approach Delay (s)	15.5	0.0	2.3
Approach LOS	C		

Intersection Summary				
Average Delay	5.3			
Intersection Capacity Utilization	45.7%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	326	68	50	463	34	141	41	47	76	32	7
Future Volume (vph)	6	326	68	50	463	34	141	41	47	76	32	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.0	5.0			3.5			3.5	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.97		1.00	0.99			0.97			0.99	
Flt Protected	0.95	1.00		0.95	1.00			0.97			0.97	
Satd. Flow (prot)	1770	1814		1770	1844			1757			1788	
Flt Permitted	0.95	1.00		0.95	1.00			0.76			0.72	
Satd. Flow (perm)	1770	1814		1770	1844			1379			1330	
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)	7	354	74	54	503	37	153	45	51	83	35	8
RTOR Reduction (vph)	0	7	0	0	2	0	0	11	0	0	3	0
Lane Group Flow (vph)	7	421	0	54	538	0	0	238	0	0	123	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases							4			8		
Actuated Green, G (s)	1.0	38.0		4.5	41.5			16.0			16.0	
Effective Green, g (s)	1.0	38.0		4.5	41.5			16.0			16.0	
Actuated g/C Ratio	0.01	0.54		0.06	0.58			0.23			0.23	
Clearance Time (s)	4.0	5.0		4.0	5.0			3.5			3.5	
Vehicle Extension (s)	2.5	2.5		2.5	2.5			2.0			3.0	
Lane Grp Cap (vph)	24	970		112	1077			310			299	
v/s Ratio Prot	0.00	0.23		c0.03	c0.29							
v/s Ratio Perm								c0.17			0.09	
v/c Ratio	0.29	0.43		0.48	0.50			0.77			0.41	
Uniform Delay, d1	34.6	10.0		32.1	8.7			25.8			23.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	4.9	1.4		2.4	1.7			9.8			0.9	
Delay (s)	39.5	11.4		34.5	10.3			35.6			24.4	
Level of Service	D	B		C	B			D			C	
Approach Delay (s)		11.9			12.5			35.6			24.4	
Approach LOS		B			B			D			C	

Intersection Summary			
HCM 2000 Control Delay	17.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	71.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	55.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	0	227	15	0	36	368	496	21	41	378	59
Future Volume (vph)	30	0	227	15	0	36	368	496	21	41	378	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00		0.85	1.00	0.85		1.00	0.99		1.00	0.98	
Flt Protected	0.95		1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770		1583	1770	1583		1770	1851		1770	1825	
Flt Permitted	0.95		1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770		1583	1770	1583		1770	1851		1770	1825	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.93	0.93	0.93
Adj. Flow (vph)	33	0	247	16	0	39	400	539	23	44	406	63
RTOR Reduction (vph)	0	0	224	0	37	0	0	1	0	0	4	0
Lane Group Flow (vph)	33	0	23	16	2	0	400	561	0	44	465	0
Turn Type	Prot		Perm	Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4									
Actuated Green, G (s)	4.8		9.8	1.5	6.5		27.1	71.1		3.4	47.4	
Effective Green, g (s)	4.8		9.8	1.5	6.5		27.1	71.1		3.4	47.4	
Actuated g/C Ratio	0.05		0.09	0.01	0.06		0.26	0.67		0.03	0.45	
Clearance Time (s)	5.0		5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	80		146	25	97		453	1243		56	817	
v/s Ratio Prot	c0.02			0.01	0.00		c0.23	0.30		0.02	c0.25	
v/s Ratio Perm			c0.01									
v/c Ratio	0.41		0.16	0.64	0.02		0.88	0.45		0.79	0.57	
Uniform Delay, d1	49.1		44.2	51.9	46.7		37.8	8.2		50.8	21.6	
Progression Factor	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.4		0.5	44.6	0.1		18.0	1.2		50.4	2.9	
Delay (s)	52.6		44.7	96.5	46.8		55.9	9.4		101.3	24.5	
Level of Service	D		D	F	D		E	A		F	C	
Approach Delay (s)		45.6			61.2			28.7			31.1	
Approach LOS		D			E			C			C	

Intersection Summary			
HCM 2000 Control Delay	33.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	105.8	Sum of lost time (s)	20.0
Intersection Capacity Utilization	64.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	3	88	227	19	63	117	787	303	50	550	29
Future Volume (vph)	25	3	88	227	19	63	117	787	303	50	550	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.5	3.5	3.5	3.5		3.5	4.4	4.4	3.5	4.4	
Lane Util. Factor		0.95	0.95	0.95	0.95		0.97	0.95	1.00	1.00	0.95	
Frpb, ped/bikes		0.99	0.98	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt		0.92	0.85	1.00	0.94		1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.98	1.00	0.95	0.98		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1581	1479	1681	1623		3433	3539	1583	1770	3510	
Flt Permitted		0.98	1.00	0.95	0.98		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1581	1479	1681	1623		3433	3539	1583	1770	3510	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	26	3	93	239	20	66	123	828	319	53	579	31
RTOR Reduction (vph)	0	31	56	0	30	0	0	0	142	0	3	0
Lane Group Flow (vph)	0	31	4	165	130	0	123	828	177	53	607	0
Confl. Peds. (#/hr)	2		1				1					2
Turn Type	Split	NA	Perm	Split	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	7	7		8	8		1	6		5	2	
Permitted Phases			7						6			
Actuated Green, G (s)		5.7	5.7	15.4	15.4		12.7	52.6	52.6	6.4	46.3	
Effective Green, g (s)		5.7	5.7	15.4	15.4		12.7	52.6	52.6	6.4	46.3	
Actuated g/C Ratio		0.06	0.06	0.16	0.16		0.13	0.55	0.55	0.07	0.49	
Clearance Time (s)		3.5	3.5	3.5	3.5		3.5	4.4	4.4	3.5	4.4	
Vehicle Extension (s)		2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)		94	88	272	263		458	1959	876	119	1710	
v/s Ratio Prot		c0.02		c0.10	0.08		0.04	c0.23		c0.03	0.17	
v/s Ratio Perm			0.00						0.11			
v/c Ratio		0.33	0.04	0.61	0.49		0.27	0.42	0.20	0.45	0.36	
Uniform Delay, d1		42.8	42.1	37.0	36.2		37.0	12.4	10.7	42.6	15.1	
Progression Factor		1.00	1.00	1.00	1.00		0.90	0.79	0.93	1.00	1.00	
Incremental Delay, d2		0.8	0.1	2.6	0.5		0.1	0.6	0.5	1.0	0.6	
Delay (s)		43.6	42.1	39.6	36.8		33.4	10.3	10.4	43.6	15.7	
Level of Service		D	D	D	D		C	B	B	D	B	
Approach Delay (s)		42.9			38.2			12.6			17.9	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	19.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	14.9
Intersection Capacity Utilization	50.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	398	1	434	519	773	0	0	746	119
Future Volume (vph)	0	0	0	398	1	434	519	773	0	0	746	119
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.1	5.1	5.1	4.0	5.0			5.0	5.0
Lane Util. Factor				0.95	0.95	0.88	0.97	0.95			0.95	1.00
Frpb, ped/bikes				1.00	1.00	1.00	1.00	1.00			1.00	0.99
Flpb, ped/bikes				1.00	1.00	1.00	1.00	1.00			1.00	1.00
Frt				1.00	1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95	0.95	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				1665	1669	2787	3433	3539			3539	1560
Flt Permitted				0.95	0.95	1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)				1665	1669	2787	3433	3539			3539	1560
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	419	1	457	546	814	0	0	785	125
RTOR Reduction (vph)	0	0	0	0	0	233	0	0	0	0	0	64
Lane Group Flow (vph)	0	0	0	209	211	224	546	814	0	0	785	61
Confl. Peds. (#/hr)												1
Confl. Bikes (#/hr)									3			2
Heavy Vehicles (%)	2%	2%	2%	3%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type				Split	NA	Perm	Prot	NA			NA	Perm
Protected Phases				4	4		1	6			2	
Permitted Phases						4						2
Actuated Green, G (s)				16.3	16.3	16.3	18.6	68.6			46.0	46.0
Effective Green, g (s)				16.3	16.3	16.3	18.6	68.6			46.0	46.0
Actuated g/C Ratio				0.17	0.17	0.17	0.20	0.72			0.48	0.48
Clearance Time (s)				5.1	5.1	5.1	4.0	5.0			5.0	5.0
Vehicle Extension (s)				1.0	1.0	1.0	1.0	1.0			1.0	1.0
Lane Grp Cap (vph)				285	286	478	672	2555			1713	755
v/s Ratio Prot				0.13	c0.13		c0.16	0.23			c0.22	
v/s Ratio Perm						0.08						0.04
v/c Ratio				0.73	0.74	0.47	0.81	0.32			0.46	0.08
Uniform Delay, d1				37.3	37.3	35.5	36.5	4.8			16.2	13.1
Progression Factor				1.00	1.00	1.00	1.02	1.65			1.21	2.76
Incremental Delay, d2				8.1	8.3	0.3	4.1	0.2			0.9	0.2
Delay (s)				45.4	45.6	35.7	41.4	8.1			20.6	36.5
Level of Service				D	D	D	D	A			C	D
Approach Delay (s)		0.0			40.4			21.4			22.8	
Approach LOS		A			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	27.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	14.1
Intersection Capacity Utilization	60.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	158	0	616	0	0	0	0	1134	102	254	890	0
Future Volume (vph)	158	0	616	0	0	0	0	1134	102	254	890	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.1	4.1	4.1					4.9	4.9	3.5	4.9	
Lane Util. Factor	0.95	0.91	0.95					0.95	1.00	0.97	0.95	
Frpb, ped/bikes	1.00	1.00	1.00					1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00					1.00	1.00	1.00	1.00	
Frt	1.00	0.86	0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1681	1450	1504					3539	1562	3433	3539	
Flt Permitted	0.95	1.00	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1681	1450	1504					3539	1562	3433	3539	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	166	0	648	0	0	0	0	1194	107	267	937	0
RTOR Reduction (vph)	0	129	129	0	0	0	0	0	40	0	0	0
Lane Group Flow (vph)	149	206	201	0	0	0	0	1194	67	267	937	0
Confl. Peds. (#/hr)												1
Confl. Bikes (#/hr)									3			2
Turn Type	Split	NA	Perm					NA	Perm	Prot	NA	
Protected Phases	8	8						6		5	2	
Permitted Phases			8						6			
Actuated Green, G (s)	18.0	18.0	18.0					39.5	39.5	25.0	68.0	
Effective Green, g (s)	18.0	18.0	18.0					39.5	39.5	25.0	68.0	
Actuated g/C Ratio	0.19	0.19	0.19					0.42	0.42	0.26	0.72	
Clearance Time (s)	4.1	4.1	4.1					4.9	4.9	3.5	4.9	
Vehicle Extension (s)	2.2	2.2	2.2					3.0	3.0	2.0	3.0	
Lane Grp Cap (vph)	318	274	284					1471	649	903	2533	
v/s Ratio Prot	0.09	c0.14						c0.34		0.08	c0.26	
v/s Ratio Perm			0.13						0.04			
v/c Ratio	0.47	0.75	0.71					0.81	0.10	0.30	0.37	
Uniform Delay, d1	34.2	36.4	36.0					24.5	16.9	28.0	5.2	
Progression Factor	1.00	1.00	1.00					0.96	0.73	1.40	0.46	
Incremental Delay, d2	0.6	10.2	6.8					4.7	0.3	0.1	0.4	
Delay (s)	34.8	46.6	42.8					28.2	12.6	39.3	2.8	
Level of Service	C	D	D					C	B	D	A	
Approach Delay (s)		42.9			0.0			27.0			10.9	
Approach LOS		D			A			C			B	

Intersection Summary			
HCM 2000 Control Delay	25.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	60.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	145	60	51	1091	1414	92
Future Volume (vph)	145	60	51	1091	1414	92
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.9	4.9	4.9
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3433	1568	1770	3539	3539	1547
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3433	1568	1770	3539	3539	1547
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	153	63	54	1148	1488	97
RTOR Reduction (vph)	0	55	0	0	0	30
Lane Group Flow (vph)	153	8	54	1148	1488	67
Confl. Peds. (#/hr)						1
Confl. Bikes (#/hr)						2
Heavy Vehicles (%)	2%	3%	2%	2%	2%	2%
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	8		1	6	2	
Permitted Phases		8				2
Actuated Green, G (s)	12.4	12.4	6.4	73.7	63.3	63.3
Effective Green, g (s)	12.4	12.4	6.4	73.7	63.3	63.3
Actuated g/C Ratio	0.13	0.13	0.07	0.78	0.67	0.67
Clearance Time (s)	4.0	4.0	4.0	4.9	4.9	4.9
Vehicle Extension (s)	2.0	2.0	2.0	3.0	3.0	3.0
Lane Grp Cap (vph)	448	204	119	2745	2358	1030
v/s Ratio Prot	c0.04		0.03	c0.32	c0.42	
v/s Ratio Perm		0.01				0.04
v/c Ratio	0.34	0.04	0.45	0.42	0.63	0.07
Uniform Delay, d1	37.6	36.1	42.6	3.5	9.1	5.5
Progression Factor	1.00	1.00	1.00	1.00	1.03	1.06
Incremental Delay, d2	0.2	0.0	1.0	0.5	1.1	0.1
Delay (s)	37.8	36.1	43.6	4.0	10.5	6.0
Level of Service	D	D	D	A	B	A
Approach Delay (s)	37.3			5.8	10.3	
Approach LOS	D			A	B	

Intersection Summary			
HCM 2000 Control Delay	10.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	12.9
Intersection Capacity Utilization	53.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	223	67	6	65	36	146	15	1177	75	179	1034	228
Future Volume (vph)	223	67	6	65	36	146	15	1177	75	179	1034	228
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
Lane Util. Factor	*1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3539	1863	1583	1770	1863	1555	1770	3539	1451	1770	3539	1550
Flt Permitted	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 (perm)	3539	1863	1583	1770	1863	1555	1770	3539	1451	1770	3539	1550
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	235	71	6	68	38	154	16	1239	79	188	1088	240
RTOR Reduction (vph)	0	0	5	0	0	142	0	0	41	0	0	47
Lane Group Flow (vph)	235	71	1	68	38	12	16	1239	38	188	1088	193
Confl. Bikes (#/hr)						2			1			2
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	9%	2%	2%	2%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Actuated Green, G (s)	11.9	12.9	12.9	7.3	8.3	8.3	2.3	50.1	50.1	16.2	64.0	64.0
Effective Green, g (s)	11.9	12.9	12.9	7.3	8.3	8.3	2.3	50.1	50.1	16.2	64.0	64.0
Actuated g/C Ratio	0.11	0.12	0.12	0.07	0.08	0.08	0.02	0.48	0.48	0.16	0.61	0.61
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0	2.0	3.0	3.0
Lane Grp Cap (vph)	403	229	195	123	147	123	38	1696	695	274	2167	949
v/s Ratio Prot	c0.07	c0.04		0.04	0.02		0.01	c0.35		c0.11	0.31	
v/s Ratio Perm			0.00			0.01			0.03			0.12
v/c Ratio	0.58	0.31	0.00	0.55	0.26	0.10	0.42	0.73	0.05	0.69	0.50	0.20
Uniform Delay, d1	43.9	41.7	40.2	47.0	45.2	44.6	50.4	21.8	14.5	41.7	11.3	9.0
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	1.4	0.3	0.0	3.0	0.3	0.1	2.7	1.7	0.0	5.6	0.2	0.1
Delay (s)	45.3	42.0	40.2	50.1	45.5	44.8	53.2	23.4	14.6	47.3	11.5	9.1
Level of Service	D	D	D	D	D	D	D	C	B	D	B	A
Approach Delay (s)		44.5			46.3			23.3			15.6	
Approach LOS		D			D			C			B	

Intersection Summary			
HCM 2000 Control Delay	23.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	104.5	Sum of lost time (s)	18.0
Intersection Capacity Utilization	67.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	5	73	35	5	8	140	1178	93	114	962	3
Future Volume (vph)	4	5	73	35	5	8	140	1178	93	114	962	3
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	5.0		4.0	5.0	5.0
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes		0.99			1.00		1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Frt		0.88			0.98		1.00	0.99		1.00	1.00	0.85
Flt Protected		1.00			0.96		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1613			1745		1770	3495		1770	3539	1534
Flt Permitted		0.99			0.79		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1595			1425		1770	3495		1770	3539	1534
Peak-hour factor, PHF	0.92	0.92	0.92	0.96	0.96	0.96	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	4	5	79	36	5	8	151	1267	100	123	1034	3
RTOR Reduction (vph)	0	70	0	0	7	0	0	5	0	0	0	1
Lane Group Flow (vph)	0	18	0	0	42	0	151	1362	0	123	1034	2
Confl. Peds. (#/hr)												7
Confl. Bikes (#/hr)			1						2			
Heavy Vehicles (%)	2%	2%	2%	3%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								6
Actuated Green, G (s)		7.8			7.8		8.9	36.7		8.2	36.0	36.0
Effective Green, g (s)		7.8			7.8		8.9	36.7		8.2	36.0	36.0
Actuated g/C Ratio		0.12			0.12		0.14	0.56		0.12	0.55	0.55
Clearance Time (s)		4.0			4.0		4.0	5.0		4.0	5.0	5.0
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		189			169		239	1952		220	1939	840
v/s Ratio Prot							c0.09	c0.39		0.07	0.29	
v/s Ratio Perm		0.01			c0.03							0.00
v/c Ratio		0.10			0.25		0.63	0.70		0.56	0.53	0.00
Uniform Delay, d1		25.8			26.3		26.9	10.5		27.0	9.5	6.7
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.2			0.8		5.4	1.1		3.1	0.3	0.0
Delay (s)		26.0			27.1		32.2	11.6		30.1	9.8	6.7
Level of Service		C			C		C	B		C	A	A
Approach Delay (s)		26.0			27.1			13.6			11.9	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	13.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	65.7	Sum of lost time (s)	13.0
Intersection Capacity Utilization	62.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	623	490	189	1094	10	525	10	119	10	10	10
Future Volume (vph)	10	623	490	189	1094	10	525	10	119	10	10	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0			5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.86			0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00			0.98	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	1605			1750	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00			0.98	
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	3433	1605			1750	
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)	11	677	533	205	1189	11	571	11	129	11	11	11
RTOR Reduction (vph)	0	0	220	0	0	7	0	95	0	0	10	0
Lane Group Flow (vph)	11	677	313	205	1189	4	571	45	0	0	23	0
Turn Type	Prot	NA	pt+ov	Prot	NA	Perm	Split	NA		Split	NA	
Protected Phases	5	2	2 8	1	6		8	8		4	4	
Permitted Phases						6						
Actuated Green, G (s)	0.6	24.9	45.4	5.4	29.7	29.7	20.5	20.5			6.4	
Effective Green, g (s)	0.6	24.9	45.4	5.4	29.7	29.7	20.5	20.5			6.4	
Actuated g/C Ratio	0.01	0.32	0.59	0.07	0.38	0.38	0.27	0.27			0.08	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0			5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)	13	1141	930	123	1361	609	911	426			145	
v/s Ratio Prot	0.01	0.19	0.20	c0.12	c0.34		c0.17	0.03			c0.01	
v/s Ratio Perm						0.00						
v/c Ratio	0.85	0.59	0.34	1.67	0.87	0.01	0.63	0.11			0.16	
Uniform Delay, d1	38.3	21.9	8.2	35.9	22.0	14.7	25.0	21.4			32.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	
Incremental Delay, d2	166.4	0.8	0.2	333.0	6.5	0.0	1.4	0.1			0.5	
Delay (s)	204.7	22.7	8.4	368.9	28.5	14.7	26.3	21.5			33.4	
Level of Service	F	C	A	F	C	B	C	C			C	
Approach Delay (s)		18.1			78.1			25.4			33.4	
Approach LOS		B			E			C			C	

Intersection Summary			
HCM 2000 Control Delay	44.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	77.2	Sum of lost time (s)	20.0
Intersection Capacity Utilization	67.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	0	0	4	0	14	0	921	11	24	793	0
Future Volume (Veh/h)	1	0	0	4	0	14	0	921	11	24	793	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.96	0.96	0.96
Hourly flow rate (vph)	1	0	0	4	0	15	0	1001	12	25	826	0
Pedestrians											1	
Lane Width (ft)											12.0	
Walking Speed (ft/s)											4.0	
Percent Blockage											0	
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (ft)											663	
pX, platoon unblocked												
vC, conflicting volume	1899	1889	826	1883	1883	1008	826			1013		
vC1, stage 1 conf vol	876	876		1007	1007							
vC2, stage 2 conf vol	1023	1013		876	876							
vCu, unblocked vol	1899	1889	826	1883	1883	1008	826			1013		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	100	98	100	95	100			96		
cM capacity (veh/h)	196	229	372	218	240	292	805			677		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	1	19	1013	25	826
Volume Left	1	4	0	25	0
Volume Right	0	15	12	0	0
cSH	196	272	805	677	1700
Volume to Capacity	0.01	0.07	0.00	0.04	0.49
Queue Length 95th (ft)	0	6	0	3	0
Control Delay (s)	23.4	19.2	0.0	10.5	0.0
Lane LOS	C	C		B	
Approach Delay (s)	23.4	19.2	0.0	0.3	
Approach LOS	C	C			

Intersection Summary				
Average Delay	0.3			
Intersection Capacity Utilization	59.5%	ICU Level of Service	B	
Analysis Period (min)	15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	34	107	911	731	232
Future Volume (Veh/h)	5	34	107	911	731	232
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)	5	37	116	990	795	252
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				TWLTL	TWLTL	
Median storage veh)				2	2	
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2143	921	1047			
vC1, stage 1 conf vol	921					
vC2, stage 2 conf vol	1222					
vCu, unblocked vol	2143	921	1047			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3	2.2			
p0 queue free %	97	89	83			
cM capacity (veh/h)	196	328	665			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	42	116	990	1047
Volume Left	5	116	0	0
Volume Right	37	0	0	252
cSH	303	665	1700	1700
Volume to Capacity	0.14	0.17	0.58	0.62
Queue Length 95th (ft)	12	16	0	0
Control Delay (s)	18.8	11.6	0.0	0.0
Lane LOS	C	B		
Approach Delay (s)	18.8	1.2		0.0
Approach LOS	C			

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	71.8%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	86	0	13	1	0	4	17	837	6	4	544	152
Future Volume (Veh/h)	86	0	13	1	0	4	17	837	6	4	544	152
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	91	0	14	1	0	4	18	890	6	4	579	162
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1598	1600	660	1530	1678	893	741			896		
vC1, stage 1 conf vol	668	668		929	929							
vC2, stage 2 conf vol	930	932		601	749							
vCu, unblocked vol	1598	1600	660	1530	1678	893	741			896		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	65	100	97	100	100	99	98			99		
cM capacity (veh/h)	257	279	463	265	268	340	866			753		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	105	5	18	896	4	741
Volume Left	91	1	18	0	4	0
Volume Right	14	4	0	6	0	162
cSH	274	322	866	1700	753	1700
Volume to Capacity	0.38	0.02	0.02	0.53	0.01	0.44
Queue Length 95th (ft)	43	1	2	0	0	0
Control Delay (s)	26.1	16.4	9.2	0.0	9.8	0.0
Lane LOS	D	C	A		A	
Approach Delay (s)	26.1	16.4	0.2		0.1	
Approach LOS	D	C				

Intersection Summary				
Average Delay	1.7			
Intersection Capacity Utilization	63.3%	ICU Level of Service	B	
Analysis Period (min)	15			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	437	230	381	419	215	300
Future Volume (vph)	437	230	381	419	215	300
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.1	4.1	4.6	4.6	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1863	1863	1583	1770	1553
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1863	1863	1583	1770	1553
Peak-hour factor, PHF	0.94	0.94	0.92	0.92	0.92	0.92
Adj. Flow (vph)	465	245	414	455	234	326
RTOR Reduction (vph)	0	0	0	36	0	127
Lane Group Flow (vph)	465	245	414	419	234	199
Heavy Vehicles (%)	2%	2%	2%	2%	2%	4%
Turn Type	Prot	NA	NA	pm+ov	Prot	pm+ov
Protected Phases	5	2	6	7	7	5
Permitted Phases				6		4
Actuated Green, G (s)	13.9	37.4	19.5	33.2	13.7	27.6
Effective Green, g (s)	13.9	37.4	19.5	33.2	13.7	27.6
Actuated g/C Ratio	0.23	0.63	0.33	0.56	0.23	0.46
Clearance Time (s)	4.0	4.1	4.1	4.6	4.6	4.0
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	797	1165	607	878	405	716
v/s Ratio Prot	c0.14	0.13	c0.22	0.11	c0.13	0.06
v/s Ratio Perm				0.16		0.06
v/c Ratio	0.58	0.21	0.68	0.48	0.58	0.28
Uniform Delay, d1	20.4	4.8	17.5	8.0	20.5	9.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	0.0	2.5	0.1	1.2	0.1
Delay (s)	21.1	4.9	20.0	8.2	21.7	10.0
Level of Service	C	A	B	A	C	B
Approach Delay (s)		15.5	13.8		14.9	
Approach LOS		B	B		B	

Intersection Summary			
HCM 2000 Control Delay	14.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	59.8	Sum of lost time (s)	12.7
Intersection Capacity Utilization	55.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	34	677	630	54	10	22
Future Volume (Veh/h)	34	677	630	54	10	22
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	37	736	685	59	11	24
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	TWLTL			
Median storage veh)			2			
Upstream signal (ft)			750			
pX, platoon unblocked	0.83				0.83	0.83
vC, conflicting volume	744				1495	685
vC1, stage 1 conf vol					685	
vC2, stage 2 conf vol					810	
vCu, unblocked vol	591				1494	520
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	95				97	95
cM capacity (veh/h)	819				329	463

Direction, Lane #	EB 1	WB 1	WB 2	SB 1
Volume Total	773	685	59	35
Volume Left	37	0	0	11
Volume Right	0	0	59	24
cSH	819	1700	1700	410
Volume to Capacity	0.05	0.40	0.03	0.09
Queue Length 95th (ft)	4	0	0	7
Control Delay (s)	1.2	0.0	0.0	14.6
Lane LOS	A			B
Approach Delay (s)	1.2	0.0		14.6
Approach LOS				B

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	73.3%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	148	460	460	39	52	103
Future Volume (Veh/h)	148	460	460	39	52	103
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	197	613	613	52	69	137
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	665				1646	639
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	665				1646	639
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	79				20	71
cM capacity (veh/h)	924				86	476

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	810	665	206
Volume Left	197	0	69
Volume Right	0	52	137
cSH	924	1700	189
Volume to Capacity	0.21	0.39	1.09
Queue Length 95th (ft)	20	0	248
Control Delay (s)	4.9	0.0	143.1
Lane LOS	A		F
Approach Delay (s)	4.9	0.0	143.1
Approach LOS			F

Intersection Summary			
Average Delay	19.9		
Intersection Capacity Utilization	78.2%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	337	114	184	386	308	291
Future Volume (vph)	337	114	184	386	308	291
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	359	121	196	411	328	310

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total (vph)	480	196	411	638
Volume Left (vph)	0	196	0	328
Volume Right (vph)	121	0	0	310
Hadj (s)	-0.12	0.53	0.03	-0.15
Departure Headway (s)	6.8	8.0	7.5	6.7
Degree Utilization, x	0.91	0.44	0.86	1.19
Capacity (veh/h)	514	444	474	542
Control Delay (s)	46.9	15.9	40.1	126.4
Approach Delay (s)	46.9	32.3		126.4
Approach LOS	E	D		F

Intersection Summary			
Delay	71.1		
Level of Service	F		
Intersection Capacity Utilization	79.8%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	12	458	723	50	3	9
Future Volume (Veh/h)	12	458	723	50	3	9
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	13	498	786	54	3	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	840				1337	813
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	840				1337	813
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				98	97
cM capacity (veh/h)	795				166	378

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	511	840	13
Volume Left	13	0	3
Volume Right	0	54	10
cSH	795	1700	292
Volume to Capacity	0.02	0.49	0.04
Queue Length 95th (ft)	1	0	3
Control Delay (s)	0.5	0.0	17.9
Lane LOS	A		C
Approach Delay (s)	0.5	0.0	17.9
Approach LOS			C

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	51.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	125	139	17	34	372	721	14	138	15	328	64	94
Future Volume (vph)	125	139	17	34	372	721	14	138	15	328	64	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.6		3.0	4.6	4.6	3.0	4.6		3.5	4.6	
Lane Util. Factor	1.00	0.95		1.00	1.00	0.88	1.00	1.00		0.97	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.99		1.00	0.91	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3482		1770	1863	2787	1770	1836		3433	1675	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3482		1770	1863	2787	1770	1836		3433	1675	
Peak-hour factor, PHF	0.98	0.98	0.98	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	128	142	17	37	404	784	15	150	16	357	70	102
RTOR Reduction (vph)	0	8	0	0	0	0	0	5	0	0	63	0
Lane Group Flow (vph)	128	151	0	37	404	784	15	161	0	357	109	0
Confl. Peds. (#/hr)												1
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						6						
Actuated Green, G (s)	8.5	33.5		2.3	27.3	27.3	1.2	13.6		12.4	25.3	
Effective Green, g (s)	8.5	33.5		2.3	27.3	27.3	1.2	13.6		12.4	25.3	
Actuated g/C Ratio	0.11	0.43		0.03	0.35	0.35	0.02	0.18		0.16	0.33	
Clearance Time (s)	3.0	4.6		3.0	4.6	4.6	3.0	4.6		3.5	4.6	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		3.0	2.0	
Lane Grp Cap (vph)	194	1505		52	656	981	27	322		549	546	
v/s Ratio Prot	c0.07	0.04		0.02	0.22		0.01	c0.09		c0.10	0.07	
v/s Ratio Perm						c0.28						
v/c Ratio	0.66	0.10		0.71	0.62	0.80	0.56	0.50		0.65	0.20	
Uniform Delay, d1	33.1	13.1		37.3	20.8	22.6	37.9	28.9		30.5	18.8	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	6.1	0.0		31.6	1.2	4.3	13.3	0.4		2.8	0.1	
Delay (s)	39.2	13.1		68.9	22.0	26.9	51.2	29.3		33.3	18.9	
Level of Service	D	B		E	C	C	D	C		C	B	
Approach Delay (s)		24.7			26.6			31.1			28.6	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	27.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	77.5	Sum of lost time (s)	15.7
Intersection Capacity Utilization	58.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	30	0	0	236	31	690	78	149	551	14
Future Volume (Veh/h)	0	0	30	0	0	236	31	690	78	149	551	14
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	33	0	0	257	34	750	85	162	599	15
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											571	
pX, platoon unblocked												
vC, conflicting volume	1630	1834	307	1517	1798	418	614			835		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1630	1834	307	1517	1798	418	614			835		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	95	100	100	56	96			80		
cM capacity (veh/h)	31	58	689	64	61	584	961			794		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	33	257	34	500	335	162	399	215
Volume Left	0	0	34	0	0	162	0	0
Volume Right	33	257	0	0	85	0	0	15
cSH	689	584	961	1700	1700	794	1700	1700
Volume to Capacity	0.05	0.44	0.04	0.29	0.20	0.20	0.23	0.13
Queue Length 95th (ft)	4	56	3	0	0	19	0	0
Control Delay (s)	10.5	15.9	8.9	0.0	0.0	10.7	0.0	0.0
Lane LOS	B	C	A			B		
Approach Delay (s)	10.5	15.9	0.3			2.2		
Approach LOS	B	C						

Intersection Summary				
Average Delay	3.3			
Intersection Capacity Utilization	42.8%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	32	459	22	44	19	979	164	29	23	213	214
Future Volume (vph)	75	32	459	22	44	19	979	164	29	23	213	214
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0		5.0	5.0	5.0	5.0		5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00	0.97	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		0.98	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583		1832	1583	3433	1820		1770	1863	1583
Flt Permitted	0.95	1.00	1.00		0.98	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583		1832	1583	3433	1820		1770	1863	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)	82	35	499	24	48	21	1064	178	32	25	232	233
RTOR Reduction (vph)	0	0	275	0	0	19	0	5	0	0	0	177
Lane Group Flow (vph)	82	35	224	0	72	2	1064	205	0	25	232	56
Turn Type	Split	NA	pt+ov	Split	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	4	4	4 5	8	8		5	2		1	6	
Permitted Phases						8						6
Actuated Green, G (s)	9.6	9.6	29.3		6.2	6.2	19.7	35.7		1.7	17.7	17.7
Effective Green, g (s)	9.6	9.6	29.3		6.2	6.2	19.7	35.7		1.7	17.7	17.7
Actuated g/C Ratio	0.13	0.13	0.40		0.08	0.08	0.27	0.49		0.02	0.24	0.24
Clearance Time (s)	5.0	5.0			5.0	5.0	5.0	5.0		5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	232	244	633		155	134	923	887		41	450	382
v/s Ratio Prot	c0.05	0.02	0.14		c0.04		c0.31	0.11		0.01	c0.12	
v/s Ratio Perm						0.00						0.04
v/c Ratio	0.35	0.14	0.35		0.46	0.01	1.15	0.23		0.61	0.52	0.15
Uniform Delay, d1	29.0	28.2	15.3		31.9	30.7	26.8	10.8		35.4	24.0	21.8
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.9	0.3	0.3		2.2	0.0	81.2	0.1		23.0	1.0	0.2
Delay (s)	29.9	28.4	15.7		34.1	30.7	108.0	11.0		58.5	25.0	22.0
Level of Service	C	C	B		C	C	F	B		E	C	C
Approach Delay (s)		18.3			33.4			92.0			25.3	
Approach LOS		B			C			F			C	

Intersection Summary			
HCM 2000 Control Delay	58.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	73.2	Sum of lost time (s)	20.0
Intersection Capacity Utilization	62.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	57	0	1	239	448	116
Future Volume (Veh/h)	57	0	1	239	448	116
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.96	0.96
Hourly flow rate (vph)	62	0	1	260	467	121
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		2				
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				389		
pX, platoon unblocked	0.98					
vC, conflicting volume	790	528	588			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	772	528	588			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	83	100	100			
cM capacity (veh/h)	359	551	987			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	62	1	260	588
Volume Left	62	1	0	0
Volume Right	0	0	0	121
cSH	354	987	1700	1700
Volume to Capacity	0.17	0.00	0.15	0.35
Queue Length 95th (ft)	16	0	0	0
Control Delay (s)	17.3	8.7	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	17.3	0.0		0.0
Approach LOS	C			

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	40.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	157	0	34	129	395	0	0	90	178
Future Volume (Veh/h)	0	0	0	157	0	34	129	395	0	0	90	178
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	171	0	37	140	429	0	0	98	193
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	940	904	194	904	1000	429	291			429		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	940	904	194	904	1000	429	291			429		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	28	100	94	89			100		
cM capacity (veh/h)	210	246	847	236	216	626	1271			1130		

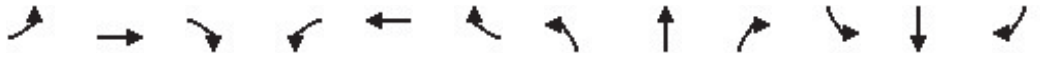
Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	208	569	291
Volume Left	171	140	0
Volume Right	37	0	193
cSH	266	1271	1700
Volume to Capacity	0.78	0.11	0.17
Queue Length 95th (ft)	148	9	0
Control Delay (s)	54.3	2.9	0.0
Lane LOS	F	A	
Approach Delay (s)	54.3	2.9	0.0
Approach LOS	F		

Intersection Summary				
Average Delay	12.1			
Intersection Capacity Utilization	64.4%	ICU Level of Service	C	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	222	2	125	0	0	0	0	302	144	30	217	0
Future Volume (Veh/h)	222	2	125	0	0	0	0	302	144	30	217	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	241	2	136	0	0	0	0	328	157	33	236	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	708	787	236	846	708	406	236			485		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	708	787	236	846	708	406	236			485		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	29	99	83	100	100	100	100			97		
cM capacity (veh/h)	341	314	803	228	348	644	1331			1078		

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	379	485	269
Volume Left	241	0	33
Volume Right	136	157	0
cSH	430	1700	1078
Volume to Capacity	0.88	0.29	0.03
Queue Length 95th (ft)	229	0	2
Control Delay (s)	50.4	0.0	1.3
Lane LOS	F		A
Approach Delay (s)	50.4	0.0	1.3
Approach LOS	F		

Intersection Summary				
Average Delay	17.2			
Intersection Capacity Utilization	63.4%	ICU Level of Service	B	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	265	45	72	382	189	53	62	86	87	37	10
Future Volume (vph)	11	265	45	72	382	189	53	62	86	87	37	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.0	5.0			3.5			3.5	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.98		1.00	0.95			0.94			0.99	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.97	
Satd. Flow (prot)	1770	1822		1770	1770			1732			1786	
Flt Permitted	0.95	1.00		0.95	1.00			0.90			0.56	
Satd. Flow (perm)	1770	1822		1770	1770			1575			1040	
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)	12	288	49	78	415	205	58	67	93	95	40	11
RTOR Reduction (vph)	0	6	0	0	12	0	0	31	0	0	3	0
Lane Group Flow (vph)	12	331	0	78	608	0	0	187	0	0	143	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases							4			8		
Actuated Green, G (s)	1.1	38.9		6.7	44.5			13.9			13.9	
Effective Green, g (s)	1.1	38.9		6.7	44.5			13.9			13.9	
Actuated g/C Ratio	0.02	0.54		0.09	0.62			0.19			0.19	
Clearance Time (s)	4.0	5.0		4.0	5.0			3.5			3.5	
Vehicle Extension (s)	2.5	2.5		2.5	2.5			2.0			3.0	
Lane Grp Cap (vph)	27	984		164	1093			304			200	
v/s Ratio Prot	0.01	0.18		c0.04	c0.34							
v/s Ratio Perm								0.12			c0.14	
v/c Ratio	0.44	0.34		0.48	0.56			0.61			0.71	
Uniform Delay, d1	35.1	9.3		31.0	8.0			26.6			27.2	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	8.3	0.9		1.6	2.0			2.6			11.4	
Delay (s)	43.4	10.2		32.6	10.0			29.2			38.6	
Level of Service	D	B		C	B			C			D	
Approach Delay (s)		11.4			12.6			29.2			38.6	
Approach LOS		B			B			C			D	

Intersection Summary			
HCM 2000 Control Delay	17.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	72.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	61.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	97	0	489	26	0	59	396	507	12	29	376	56
Future Volume (vph)	97	0	489	26	0	59	396	507	12	29	376	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00		0.85	1.00	0.85		1.00	1.00		1.00	0.98	
Flt Protected	0.95		1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770		1583	1770	1583		1770	1856		1770	1827	
Flt Permitted	0.95		1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770		1583	1770	1583		1770	1856		1770	1827	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.93	0.93	0.93
Adj. Flow (vph)	105	0	532	28	0	64	430	551	13	31	404	60
RTOR Reduction (vph)	0	0	458	0	60	0	0	1	0	0	4	0
Lane Group Flow (vph)	105	0	74	28	4	0	430	563	0	31	460	0
Turn Type	Prot		Perm	Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4									
Actuated Green, G (s)	10.1		15.1	2.3	7.3		27.2	71.1		3.5	47.4	
Effective Green, g (s)	10.1		15.1	2.3	7.3		27.2	71.1		3.5	47.4	
Actuated g/C Ratio	0.09		0.13	0.02	0.07		0.24	0.63		0.03	0.42	
Clearance Time (s)	5.0		5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	159		213	36	103		429	1178		55	773	
v/s Ratio Prot	c0.06			0.02	0.00		c0.24	0.30		0.02	c0.25	
v/s Ratio Perm			c0.05									
v/c Ratio	0.66		0.35	0.78	0.04		1.00	0.48		0.56	0.60	
Uniform Delay, d1	49.3		44.0	54.6	49.1		42.4	10.7		53.5	24.9	
Progression Factor	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	9.8		1.0	66.9	0.2		44.0	1.4		12.6	3.4	
Delay (s)	59.1		45.0	121.5	49.2		86.4	12.1		66.1	28.3	
Level of Service	E		D	F	D		F	B		E	C	
Approach Delay (s)		47.3			71.2			44.3			30.6	
Approach LOS		D			E			D			C	

Intersection Summary			
HCM 2000 Control Delay	43.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	112.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	69.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	84	44	363	438	36	76	350	705	417	73	808	71
Future Volume (vph)	84	44	363	438	36	76	350	705	417	73	808	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.5	3.5	3.5	3.5		3.5	4.4	4.4	3.5	4.4	
Lane Util. Factor		0.95	0.95	0.95	0.95		0.97	0.95	1.00	1.00	0.95	
Frpb, ped/bikes		0.99	0.99	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt		0.93	0.85	1.00	0.96		1.00	1.00	0.85	1.00	0.99	
Flt Protected		0.98	1.00	0.95	0.97		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1600	1484	1681	1647		3433	3539	1583	1770	3492	
Flt Permitted		0.98	1.00	0.95	0.97		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1600	1484	1681	1647		3433	3539	1583	1770	3492	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	88	46	382	461	38	80	368	742	439	77	851	75
RTOR Reduction (vph)	0	41	202	0	16	0	0	0	279	0	6	0
Lane Group Flow (vph)	0	227	46	295	268	0	368	742	160	77	920	0
Confl. Peds. (#/hr)	2		1				1					2
Turn Type	Split	NA	Perm	Split	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	7	7		8	8		1	6		5	2	
Permitted Phases			7						6			
Actuated Green, G (s)		17.7	17.7	20.6	20.6		12.7	34.7	34.7	7.1	29.1	
Effective Green, g (s)		17.7	17.7	20.6	20.6		12.7	34.7	34.7	7.1	29.1	
Actuated g/C Ratio		0.19	0.19	0.22	0.22		0.13	0.37	0.37	0.07	0.31	
Clearance Time (s)		3.5	3.5	3.5	3.5		3.5	4.4	4.4	3.5	4.4	
Vehicle Extension (s)		2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)		298	276	364	357		458	1292	578	132	1069	
v/s Ratio Prot		c0.14		c0.18	0.16		c0.11	0.21		0.04	c0.26	
v/s Ratio Perm			0.03						0.10			
v/c Ratio		0.76	0.17	0.81	0.75		0.80	0.57	0.28	0.58	0.86	
Uniform Delay, d1		36.6	32.5	35.3	34.8		39.9	24.2	21.3	42.5	31.0	
Progression Factor		1.00	1.00	1.00	1.00		0.96	1.00	2.10	1.00	1.00	
Incremental Delay, d2		9.8	0.1	12.2	7.7		8.4	1.7	1.1	4.2	9.1	
Delay (s)		46.5	32.6	47.5	42.5		47.0	25.8	45.7	46.7	40.1	
Level of Service		D	C	D	D		D	C	D	D	D	
Approach Delay (s)		39.8			45.1			36.5			40.6	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	39.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	14.9
Intersection Capacity Utilization	78.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	594	0	543	623	927	0	0	1377	232
Future Volume (vph)	0	0	0	594	0	543	623	927	0	0	1377	232
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.1	5.1	5.1	4.0	5.0			5.0	5.0
Lane Util. Factor				0.95	0.95	0.88	0.97	0.95			0.95	1.00
Frpb, ped/bikes				1.00	1.00	1.00	1.00	1.00			1.00	0.99
Flpb, ped/bikes				1.00	1.00	1.00	1.00	1.00			1.00	1.00
Frt				1.00	1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95	0.95	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				1665	1665	2787	3433	3539			3539	1560
Flt Permitted				0.95	0.95	1.00	0.95	1.00			1.00	1.00
Satd. Flow (perm)				1665	1665	2787	3433	3539			3539	1560
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	625	0	572	656	976	0	0	1449	244
RTOR Reduction (vph)	0	0	0	0	0	143	0	0	0	0	0	150
Lane Group Flow (vph)	0	0	0	312	313	429	656	976	0	0	1449	94
Confl. Peds. (#/hr)												1
Confl. Bikes (#/hr)									3			2
Heavy Vehicles (%)	2%	2%	2%	3%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type				Split	NA	Perm	Prot	NA			NA	Perm
Protected Phases				4	4		1	6			2	
Permitted Phases						4						2
Actuated Green, G (s)				23.0	23.0	23.0	21.4	61.9			36.5	36.5
Effective Green, g (s)				23.0	23.0	23.0	21.4	61.9			36.5	36.5
Actuated g/C Ratio				0.24	0.24	0.24	0.23	0.65			0.38	0.38
Clearance Time (s)				5.1	5.1	5.1	4.0	5.0			5.0	5.0
Vehicle Extension (s)				1.0	1.0	1.0	1.0	1.0			1.0	1.0
Lane Grp Cap (vph)				403	403	674	773	2305			1359	599
v/s Ratio Prot				0.19	c0.19		c0.19	0.28			c0.41	
v/s Ratio Perm						0.15						0.06
v/c Ratio				0.77	0.78	0.64	0.85	0.42			1.07	0.16
Uniform Delay, d1				33.6	33.6	32.3	35.2	8.0			29.2	19.2
Progression Factor				1.00	1.00	1.00	1.14	1.67			1.24	2.83
Incremental Delay, d2				8.2	8.3	1.5	0.8	0.1			40.6	0.4
Delay (s)				41.8	41.9	33.7	41.1	13.3			77.0	54.6
Level of Service				D	D	C	D	B			E	D
Approach Delay (s)		0.0			38.0			24.5			73.8	
Approach LOS		A			D			C			E	

Intersection Summary			
HCM 2000 Control Delay	46.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	14.1
Intersection Capacity Utilization	84.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	201	4	800	0	0	0	0	1350	160	533	1427	0
Future Volume (vph)	201	4	800	0	0	0	0	1350	160	533	1427	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.1	4.1	4.1					4.9	4.9	3.5	4.9	
Lane Util. Factor	0.95	0.91	0.95					0.95	1.00	0.97	0.95	
Frpb, ped/bikes	1.00	1.00	1.00					1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00					1.00	1.00	1.00	1.00	
Frt	1.00	0.86	0.85					1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1681	1452	1504					3539	1561	3433	3539	
Flt Permitted	0.95	1.00	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1681	1452	1504					3539	1561	3433	3539	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	212	4	842	0	0	0	0	1421	168	561	1502	0
RTOR Reduction (vph)	0	35	57	0	0	0	0	0	45	0	0	0
Lane Group Flow (vph)	191	403	372	0	0	0	0	1421	123	561	1502	0
Confl. Peds. (#/hr)												1
Confl. Bikes (#/hr)									3			2
Turn Type	Split	NA	Perm					NA	Perm	Prot	NA	
Protected Phases	8	8						6		5	2	
Permitted Phases			8						6			
Actuated Green, G (s)	25.0	25.0	25.0					32.5	32.5	25.0	61.0	
Effective Green, g (s)	25.0	25.0	25.0					32.5	32.5	25.0	61.0	
Actuated g/C Ratio	0.26	0.26	0.26					0.34	0.34	0.26	0.64	
Clearance Time (s)	4.1	4.1	4.1					4.9	4.9	3.5	4.9	
Vehicle Extension (s)	2.2	2.2	2.2					3.0	3.0	2.0	3.0	
Lane Grp Cap (vph)	442	382	395					1210	534	903	2272	
v/s Ratio Prot	0.11	c0.28						c0.40		0.16	c0.42	
v/s Ratio Perm			0.25						0.08			
v/c Ratio	0.43	1.06	0.94					1.17	0.23	0.62	0.66	
Uniform Delay, d1	29.1	35.0	34.3					31.2	22.3	30.8	10.6	
Progression Factor	1.00	1.00	1.00					0.99	0.87	1.18	0.30	
Incremental Delay, d2	0.3	61.5	30.3					87.0	0.9	0.1	0.7	
Delay (s)	29.4	96.5	64.6					117.9	20.4	36.4	3.9	
Level of Service	C	F	E					F	C	D	A	
Approach Delay (s)		71.5			0.0			107.6			12.7	
Approach LOS		E			A			F			B	

Intersection Summary			
HCM 2000 Control Delay	57.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	84.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	192	76	78	1174	1978	248
Future Volume (vph)	192	76	78	1174	1978	248
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.9	4.9	4.9
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3433	1568	1770	3539	3539	1547
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3433	1568	1770	3539	3539	1547
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	202	80	82	1236	2082	261
RTOR Reduction (vph)	0	69	0	0	0	62
Lane Group Flow (vph)	202	11	82	1236	2082	199
Confl. Peds. (#/hr)						1
Confl. Bikes (#/hr)						2
Heavy Vehicles (%)	2%	3%	2%	2%	2%	2%
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	8		1	6	2	
Permitted Phases		8				2
Actuated Green, G (s)	13.4	13.4	7.7	72.7	61.0	61.0
Effective Green, g (s)	13.4	13.4	7.7	72.7	61.0	61.0
Actuated g/C Ratio	0.14	0.14	0.08	0.77	0.64	0.64
Clearance Time (s)	4.0	4.0	4.0	4.9	4.9	4.9
Vehicle Extension (s)	2.0	2.0	2.0	3.0	3.0	3.0
Lane Grp Cap (vph)	484	221	143	2708	2272	993
v/s Ratio Prot	c0.06		c0.05	0.35	c0.59	
v/s Ratio Perm		0.01				0.13
v/c Ratio	0.42	0.05	0.57	0.46	0.92	0.20
Uniform Delay, d1	37.2	35.3	42.1	4.0	14.8	7.0
Progression Factor	1.00	1.00	1.00	1.00	0.88	0.83
Incremental Delay, d2	0.2	0.0	3.4	0.6	4.6	0.3
Delay (s)	37.5	35.3	45.5	4.6	17.6	6.1
Level of Service	D	D	D	A	B	A
Approach Delay (s)	36.8			7.1	16.3	
Approach LOS	D			A	B	

Intersection Summary			
HCM 2000 Control Delay	14.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	12.9
Intersection Capacity Utilization	75.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	490	25	14	53	37	146	23	1175	37	135	1560	351
Future Volume (vph)	490	25	14	53	37	146	23	1175	37	135	1560	351
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
Lane Util. Factor	*1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3539	1863	1583	1770	1863	1556	1770	3539	1451	1770	3539	1550
Flt Permitted	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 (perm)	3539	1863	1583	1770	1863	1556	1770	3539	1451	1770	3539	1550
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	516	26	15	56	39	154	24	1237	39	142	1642	369
RTOR Reduction (vph)	0	0	13	0	0	141	0	0	21	0	0	56
Lane Group Flow (vph)	516	26	2	56	39	13	24	1237	18	142	1642	313
Confl. Bikes (#/hr)						2			1			2
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	9%	2%	2%	2%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Actuated Green, G (s)	19.2	16.5	16.5	12.0	9.3	9.3	3.9	50.8	50.8	13.4	60.3	60.3
Effective Green, g (s)	19.2	16.5	16.5	12.0	9.3	9.3	3.9	50.8	50.8	13.4	60.3	60.3
Actuated g/C Ratio	0.17	0.15	0.15	0.11	0.08	0.08	0.04	0.46	0.46	0.12	0.54	0.54
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0	2.0	3.0	3.0
Lane Grp Cap (vph)	613	277	235	191	156	130	62	1624	665	214	1927	844
v/s Ratio Prot	c0.15	0.01		0.03	c0.02		0.01	0.35		c0.08	c0.46	
v/s Ratio Perm			0.00			0.01			0.01			0.20
v/c Ratio	0.84	0.09	0.01	0.29	0.25	0.10	0.39	0.76	0.03	0.66	0.85	0.37
Uniform Delay, d1	44.3	40.6	40.1	45.4	47.4	46.8	52.2	24.9	16.4	46.5	21.4	14.4
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	9.8	0.1	0.0	0.3	0.3	0.1	1.5	2.2	0.0	5.9	3.9	0.3
Delay (s)	54.1	40.7	40.1	45.8	47.7	47.0	53.7	27.1	16.4	52.4	25.3	14.7
Level of Service	D	D	D	D	D	D	D	C	B	D	C	B
Approach Delay (s)		53.1			46.8			27.3			25.2	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	30.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	110.7	Sum of lost time (s)	18.0
Intersection Capacity Utilization	78.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	9	214	105	14	57	183	1101	51	96	1422	7
Future Volume (vph)	14	9	214	105	14	57	183	1101	51	96	1422	7
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	5.0		4.0	5.0	5.0
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes		0.99			1.00		1.00	1.00		1.00	1.00	0.96
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Frt		0.88			0.96		1.00	0.99		1.00	1.00	0.85
Flt Protected		1.00			0.97		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1612			1720		1770	3512		1770	3539	1526
Flt Permitted		0.98			0.46		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1582			806		1770	3512		1770	3539	1526
Peak-hour factor, PHF	0.92	0.92	0.92	0.96	0.96	0.96	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	15	10	233	109	15	59	197	1184	55	103	1529	8
RTOR Reduction (vph)	0	180	0	0	17	0	0	3	0	0	0	4
Lane Group Flow (vph)	0	78	0	0	166	0	197	1236	0	103	1529	4
Confl. Peds. (#/hr)												7
Confl. Bikes (#/hr)			1						2			
Heavy Vehicles (%)	2%	2%	2%	3%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								6
Actuated Green, G (s)		21.9			21.9		13.9	52.2		9.1	47.4	47.4
Effective Green, g (s)		21.9			21.9		13.9	52.2		9.1	47.4	47.4
Actuated g/C Ratio		0.23			0.23		0.14	0.54		0.09	0.49	0.49
Clearance Time (s)		4.0			4.0		4.0	5.0		4.0	5.0	5.0
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		360			183		255	1905		167	1743	751
v/s Ratio Prot							c0.11	0.35		0.06	c0.43	
v/s Ratio Perm		0.05			c0.21							0.00
v/c Ratio		0.22			0.91		0.77	0.65		0.62	0.88	0.01
Uniform Delay, d1		30.2			36.2		39.6	15.5		41.9	21.8	12.4
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.3			40.8		13.5	0.8		6.6	5.3	0.0
Delay (s)		30.5			77.0		53.1	16.3		48.5	27.1	12.4
Level of Service		C			E		D	B		D	C	B
Approach Delay (s)		30.5			77.0			21.4			28.4	
Approach LOS		C			E			C			C	

Intersection Summary			
HCM 2000 Control Delay	28.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	96.2	Sum of lost time (s)	13.0
Intersection Capacity Utilization	88.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	1166	714	169	816	10	598	10	204	10	10	10
Future Volume (vph)	10	1166	714	169	816	10	598	10	204	10	10	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0			5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.86			0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00			0.98	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	1597			1750	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00			0.98	
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	3433	1597			1750	
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)	11	1267	776	184	887	11	650	11	222	11	11	11
RTOR Reduction (vph)	0	0	292	0	0	7	0	158	0	0	10	0
Lane Group Flow (vph)	11	1267	484	184	887	4	650	75	0	0	23	0
Turn Type	Prot	NA	pt+ov	Prot	NA	Perm	Split	NA		Split	NA	
Protected Phases	5	2	2 8	1	6		8	8		4	4	
Permitted Phases						6						
Actuated Green, G (s)	0.6	27.3	51.1	4.2	30.9	30.9	23.8	23.8			6.7	
Effective Green, g (s)	0.6	27.3	51.1	4.2	30.9	30.9	23.8	23.8			6.7	
Actuated g/C Ratio	0.01	0.33	0.62	0.05	0.38	0.38	0.29	0.29			0.08	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0			5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)	12	1178	986	90	1333	596	996	463			142	
v/s Ratio Prot	0.01	c0.36	0.31	c0.10	c0.25		c0.19	0.05			c0.01	
v/s Ratio Perm						0.00						
v/c Ratio	0.92	1.08	0.49	2.04	0.67	0.01	0.65	0.16			0.16	
Uniform Delay, d1	40.7	27.4	8.4	38.9	21.3	16.0	25.5	21.7			35.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	
Incremental Delay, d2	212.2	49.1	0.4	506.3	1.3	0.0	1.5	0.2			0.5	
Delay (s)	252.8	76.4	8.8	545.2	22.5	16.0	27.0	21.8			35.6	
Level of Service	F	E	A	F	C	B	C	C			D	
Approach Delay (s)		51.8			111.3			25.7			35.6	
Approach LOS		D			F			C			D	

Intersection Summary			
HCM 2000 Control Delay	61.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	82.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	77.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	0	0	10	1	37	2	927	29	22	1141	1
Future Volume (Veh/h)	2	0	0	10	1	37	2	927	29	22	1141	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.96	0.96	0.96
Hourly flow rate (vph)	2	0	0	11	1	40	2	1008	32	23	1189	1
Pedestrians											1	
Lane Width (ft)											12.0	
Walking Speed (ft/s)											4.0	
Percent Blockage											0	
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (ft)											663	
pX, platoon unblocked												
vC, conflicting volume	2305	2280	1190	2263	2264	1025	1190			1040		
vC1, stage 1 conf vol	1236	1236		1028	1028							
vC2, stage 2 conf vol	1070	1044		1235	1236							
vCu, unblocked vol	2305	2280	1190	2263	2264	1025	1190			1040		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	100	93	99	86	100			97		
cM capacity (veh/h)	142	181	229	162	186	285	587			661		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	2	52	1042	23	1190
Volume Left	2	11	2	23	0
Volume Right	0	40	32	0	1
cSH	142	244	587	661	1700
Volume to Capacity	0.01	0.21	0.00	0.03	0.70
Queue Length 95th (ft)	1	20	0	3	0
Control Delay (s)	30.7	23.7	0.1	10.6	0.0
Lane LOS	D	C	A	B	
Approach Delay (s)	30.7	23.7	0.1	0.2	
Approach LOS	D	C			

Intersection Summary				
Average Delay	0.7			
Intersection Capacity Utilization	70.4%	ICU Level of Service	C	
Analysis Period (min)	15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	195	138	26	855	1106	58
Future Volume (Veh/h)	195	138	26	855	1106	58
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)	212	150	28	929	1202	63
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				TWLTL	TWLTL	
Median storage veh)				2	2	
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2218	1234	1265			
vC1, stage 1 conf vol	1234					
vC2, stage 2 conf vol	985					
vCu, unblocked vol	2218	1234	1265			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	30	95			
cM capacity (veh/h)	212	216	549			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	362	28	929	1265
Volume Left	212	28	0	0
Volume Right	150	0	0	63
cSH	214	549	1700	1700
Volume to Capacity	1.70	0.05	0.55	0.74
Queue Length 95th (ft)	604	4	0	0
Control Delay (s)	371.4	11.9	0.0	0.0
Lane LOS	F	B		
Approach Delay (s)	371.4	0.3		0.0
Approach LOS	F			

Intersection Summary			
Average Delay	52.2		
Intersection Capacity Utilization	87.6%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	146	1	30	1	1	1	9	691	2	4	969	118
Future Volume (Veh/h)	146	1	30	1	1	1	9	691	2	4	969	118
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	155	1	32	1	1	1	10	735	2	4	1031	126
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1858	1859	1094	1828	1921	736	1157			737		
vC1, stage 1 conf vol	1102	1102		756	756							
vC2, stage 2 conf vol	756	757		1072	1165							
vCu, unblocked vol	1858	1859	1094	1828	1921	736	1157			737		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	27	100	88	99	100	100	98			100		
cM capacity (veh/h)	213	237	260	193	220	419	604			864		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	188	3	10	737	4	1157
Volume Left	155	1	10	0	4	0
Volume Right	32	1	0	2	0	126
cSH	220	248	604	1700	864	1700
Volume to Capacity	0.85	0.01	0.02	0.43	0.00	0.68
Queue Length 95th (ft)	166	1	1	0	0	0
Control Delay (s)	74.3	19.7	11.1	0.0	9.2	0.0
Lane LOS	F	C	B		A	
Approach Delay (s)	74.3	19.7	0.1		0.0	
Approach LOS	F	C				

Intersection Summary				
Average Delay	6.8			
Intersection Capacity Utilization	81.5%	ICU Level of Service	D	
Analysis Period (min)	15			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	340	287	322	339	642	432
Future Volume (vph)	340	287	322	339	642	432
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.1	4.1	4.6	4.6	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1863	1863	1583	1770	1553
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1863	1863	1583	1770	1553
Peak-hour factor, PHF	0.94	0.94	0.92	0.92	0.92	0.92
Adj. Flow (vph)	362	305	350	368	698	470
RTOR Reduction (vph)	0	0	0	50	0	127
Lane Group Flow (vph)	362	305	350	318	698	343
Heavy Vehicles (%)	2%	2%	2%	2%	2%	4%
Turn Type	Prot	NA	NA	pm+ov	Prot	pm+ov
Protected Phases	5	2	6	7	7	5
Permitted Phases				6		4
Actuated Green, G (s)	12.5	35.0	18.5	48.9	30.4	42.9
Effective Green, g (s)	12.5	35.0	18.5	48.9	30.4	42.9
Actuated g/C Ratio	0.17	0.47	0.25	0.66	0.41	0.58
Clearance Time (s)	4.0	4.1	4.1	4.6	4.6	4.0
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	579	879	465	1044	726	899
v/s Ratio Prot	c0.11	0.16	c0.19	0.12	c0.39	0.06
v/s Ratio Perm				0.08		0.16
v/c Ratio	0.63	0.35	0.75	0.30	0.96	0.38
Uniform Delay, d1	28.6	12.3	25.7	5.4	21.3	8.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.5	0.1	6.0	0.1	24.0	0.1
Delay (s)	30.1	12.4	31.7	5.4	45.3	8.5
Level of Service	C	B	C	A	D	A
Approach Delay (s)		22.0	18.2		30.5	
Approach LOS		C	B		C	

Intersection Summary			
HCM 2000 Control Delay	24.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	74.1	Sum of lost time (s)	12.7
Intersection Capacity Utilization	72.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	17	680	729	29	24	53
Future Volume (Veh/h)	17	680	729	29	24	53
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	18	739	792	32	26	58
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	TWLTL			
Median storage veh)			2			
Upstream signal (ft)			750			
pX, platoon unblocked	0.84				0.84	0.84
vC, conflicting volume	824				1567	792
vC1, stage 1 conf vol					792	
vC2, stage 2 conf vol					775	
vCu, unblocked vol	693				1580	654
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	98				92	85
cM capacity (veh/h)	756				317	391

Direction, Lane #	EB 1	WB 1	WB 2	SB 1
Volume Total	757	792	32	84
Volume Left	18	0	0	26
Volume Right	0	0	32	58
cSH	756	1700	1700	364
Volume to Capacity	0.02	0.47	0.02	0.23
Queue Length 95th (ft)	2	0	0	22
Control Delay (s)	0.6	0.0	0.0	17.8
Lane LOS	A			C
Approach Delay (s)	0.6	0.0		17.8
Approach LOS				C

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	60.7%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	84	562	463	38	30	159
Future Volume (Veh/h)	84	562	463	38	30	159
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	90	604	498	41	32	171
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	539				1302	518
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	539				1302	518
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	91				80	69
cM capacity (veh/h)	1029				162	557

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	694	539	203
Volume Left	90	0	32
Volume Right	0	41	171
cSH	1029	1700	402
Volume to Capacity	0.09	0.32	0.50
Queue Length 95th (ft)	7	0	69
Control Delay (s)	2.2	0.0	22.7
Lane LOS	A		C
Approach Delay (s)	2.2	0.0	22.7
Approach LOS			C

Intersection Summary			
Average Delay	4.3		
Intersection Capacity Utilization	82.4%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	408	338	250	387	135	230
Future Volume (vph)	408	338	250	387	135	230
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	434	360	266	412	144	245

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total (vph)	794	266	412	389
Volume Left (vph)	0	266	0	144
Volume Right (vph)	360	0	0	245
Hadj (s)	-0.24	0.53	0.03	-0.27
Departure Headway (s)	6.2	7.4	6.9	6.6
Degree Utilization, x	1.37	0.55	0.79	0.71
Capacity (veh/h)	589	472	514	535
Control Delay (s)	194.8	17.7	29.6	24.1
Approach Delay (s)	194.8	25.0		24.1
Approach LOS	F	C		C

Intersection Summary			
Delay	97.3		
Level of Service	F		
Intersection Capacity Utilization	87.6%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	9	812	658	45	9	16
Future Volume (Veh/h)	9	812	658	45	9	16
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	10	883	715	49	10	17
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	764				1642	740
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	764				1642	740
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				91	96
cM capacity (veh/h)	849				109	417

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	893	764	27
Volume Left	10	0	10
Volume Right	0	49	17
cSH	849	1700	203
Volume to Capacity	0.01	0.45	0.13
Queue Length 95th (ft)	1	0	11
Control Delay (s)	0.3	0.0	25.4
Lane LOS	A		D
Approach Delay (s)	0.3	0.0	25.4
Approach LOS			D

Intersection Summary			
Average Delay		0.6	
Intersection Capacity Utilization		59.9%	ICU Level of Service B
Analysis Period (min)		15	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	394	40	40	294	435	25	129	31	783	162	105
Future Volume (vph)	105	394	40	40	294	435	25	129	31	783	162	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.6		3.0	4.6	4.6	3.0	4.6		3.5	4.6	
Lane Util. Factor	1.00	0.95		1.00	1.00	0.88	1.00	1.00		0.97	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.97		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3490		1770	1863	2787	1770	1808		3433	1738	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3490		1770	1863	2787	1770	1808		3433	1738	
Peak-hour factor, PHF	0.98	0.98	0.98	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	107	402	41	43	320	473	27	140	34	851	176	114
RTOR Reduction (vph)	0	8	0	0	0	0	0	10	0	0	25	0
Lane Group Flow (vph)	107	435	0	43	320	473	27	164	0	851	265	0
Confl. Peds. (#/hr)												1
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						6						
Actuated Green, G (s)	6.4	21.0		2.2	16.8	16.8	2.2	13.2		15.0	26.5	
Effective Green, g (s)	6.4	21.0		2.2	16.8	16.8	2.2	13.2		15.0	26.5	
Actuated g/C Ratio	0.10	0.31		0.03	0.25	0.25	0.03	0.20		0.22	0.39	
Clearance Time (s)	3.0	4.6		3.0	4.6	4.6	3.0	4.6		3.5	4.6	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		3.0	2.0	
Lane Grp Cap (vph)	168	1092		58	466	697	58	355		767	686	
v/s Ratio Prot	c0.06	0.12		0.02	c0.17		0.02	c0.09		c0.25	0.15	
v/s Ratio Perm						0.17						
v/c Ratio	0.64	0.40		0.74	0.69	0.68	0.47	0.46		1.11	0.39	
Uniform Delay, d1	29.2	18.1		32.2	22.8	22.7	31.9	23.8		26.0	14.5	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	5.7	0.1		35.5	3.3	2.1	2.1	0.3		66.8	0.1	
Delay (s)	34.9	18.2		67.6	26.1	24.8	34.0	24.2		92.9	14.6	
Level of Service	C	B		E	C	C	C	C		F	B	
Approach Delay (s)		21.4			27.5			25.5			73.0	
Approach LOS		C			C			C			E	

Intersection Summary			
HCM 2000 Control Delay	45.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	67.1	Sum of lost time (s)	15.7
Intersection Capacity Utilization	66.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	101	0	0	204	40	517	99	245	1092	32
Future Volume (Veh/h)	0	0	101	0	0	204	40	517	99	245	1092	32
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	110	0	0	222	43	562	108	266	1187	35
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											571	
pX, platoon unblocked												
vC, conflicting volume	2326	2492	611	1938	2456	335	1222			670		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2326	2492	611	1938	2456	335	1222			670		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	75	100	100	66	92			71		
cM capacity (veh/h)	10	19	437	22	20	661	566			916		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	110	222	43	375	295	266	791	431
Volume Left	0	0	43	0	0	266	0	0
Volume Right	110	222	0	0	108	0	0	35
cSH	437	661	566	1700	1700	916	1700	1700
Volume to Capacity	0.25	0.34	0.08	0.22	0.17	0.29	0.47	0.25
Queue Length 95th (ft)	25	37	6	0	0	30	0	0
Control Delay (s)	16.0	13.2	11.9	0.0	0.0	10.5	0.0	0.0
Lane LOS	C	B	B			B		
Approach Delay (s)	16.0	13.2	0.7			1.9		
Approach LOS	C	B						

Intersection Summary				
Average Delay	3.2			
Intersection Capacity Utilization	44.1%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	206	54	1000	47	67	38	616	259	27	23	339	94
Future Volume (vph)	206	54	1000	47	67	38	616	259	27	23	339	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0		5.0	5.0	5.0	5.0		5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00	0.97	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		0.98	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583		1825	1583	3433	1837		1770	1863	1583
Flt Permitted	0.95	1.00	1.00		0.98	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583		1825	1583	3433	1837		1770	1863	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)	224	59	1087	51	73	41	670	282	29	25	368	102
RTOR Reduction (vph)	0	0	131	0	0	38	0	3	0	0	0	76
Lane Group Flow (vph)	224	59	956	0	124	3	670	308	0	25	368	26
Turn Type	Split	NA	pt+ov	Split	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	4	4	4 5	8	8		5	2		1	6	
Permitted Phases						8						6
Actuated Green, G (s)	37.1	37.1	56.2		9.0	9.0	19.1	45.1		2.9	28.9	28.9
Effective Green, g (s)	37.1	37.1	56.2		9.0	9.0	19.1	45.1		2.9	28.9	28.9
Actuated g/C Ratio	0.33	0.33	0.49		0.08	0.08	0.17	0.40		0.03	0.25	0.25
Clearance Time (s)	5.0	5.0			5.0	5.0	5.0	5.0		5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	575	605	779		143	124	574	726		44	471	400
v/s Ratio Prot	0.13	0.03	c0.60		c0.07		0.20	0.17		0.01	c0.20	
v/s Ratio Perm						0.00						0.02
v/c Ratio	0.39	0.10	1.23		0.87	0.03	1.17	0.42		0.57	0.78	0.06
Uniform Delay, d1	29.7	26.8	28.9		52.0	48.5	47.5	25.1		55.0	39.7	32.3
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.4	0.1	113.3		38.7	0.1	93.0	0.4		15.7	8.2	0.1
Delay (s)	30.2	26.9	142.2		90.7	48.6	140.5	25.5		70.7	47.9	32.4
Level of Service	C	C	F		F	D	F	C		E	D	C
Approach Delay (s)		118.9			80.2			104.0			45.8	
Approach LOS		F			F			F			D	

Intersection Summary			
HCM 2000 Control Delay	99.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	114.1	Sum of lost time (s)	20.0
Intersection Capacity Utilization	98.4%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	145	0	7	493	446	98
Future Volume (Veh/h)	145	0	7	493	446	98
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.96	0.96
Hourly flow rate (vph)	158	0	8	536	465	102
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		2				
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				389		
pX, platoon unblocked	0.89					
vC, conflicting volume	1068	516	567			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1012	516	567			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	32	100	99			
cM capacity (veh/h)	233	559	1005			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	158	8	536	567
Volume Left	158	8	0	0
Volume Right	0	0	0	102
cSH	232	1005	1700	1700
Volume to Capacity	0.68	0.01	0.32	0.33
Queue Length 95th (ft)	109	1	0	0
Control Delay (s)	48.4	8.6	0.0	0.0
Lane LOS	E	A		
Approach Delay (s)	48.4	0.1		0.0
Approach LOS	E			

Intersection Summary			
Average Delay	6.1		
Intersection Capacity Utilization	44.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	196	0	49	129	394	0	0	192	232
Future Volume (Veh/h)	0	0	0	196	0	49	129	394	0	0	192	232
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	213	0	53	140	428	0	0	209	252
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1096	1043	335	1043	1169	428	461			428		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1096	1043	335	1043	1169	428	461			428		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	0	100	92	87			100		
cM capacity (veh/h)	158	200	707	187	169	627	1100			1131		

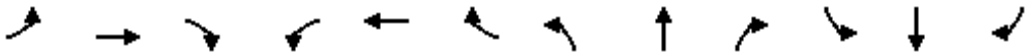
Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	266	568	461
Volume Left	213	140	0
Volume Right	53	0	252
cSH	218	1100	1700
Volume to Capacity	1.22	0.13	0.27
Queue Length 95th (ft)	337	11	0
Control Delay (s)	179.4	3.3	0.0
Lane LOS	F	A	
Approach Delay (s)	179.4	3.3	0.0
Approach LOS	F		

Intersection Summary				
Average Delay	38.3			
Intersection Capacity Utilization	76.0%	ICU Level of Service	D	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	277	0	143	0	0	0	0	246	136	53	335	0
Future Volume (Veh/h)	277	0	143	0	0	0	0	246	136	53	335	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	301	0	155	0	0	0	0	267	148	58	364	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	821	895	364	976	821	341	364			415		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	821	895	364	976	821	341	364			415		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	100	77	100	100	100	100			95		
cM capacity (veh/h)	282	266	681	171	294	701	1195			1144		

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	456	415	422
Volume Left	301	0	58
Volume Right	155	148	0
cSH	352	1700	1144
Volume to Capacity	1.29	0.24	0.05
Queue Length 95th (ft)	527	0	4
Control Delay (s)	183.4	0.0	1.6
Lane LOS	F		A
Approach Delay (s)	183.4	0.0	1.6
Approach LOS	F		

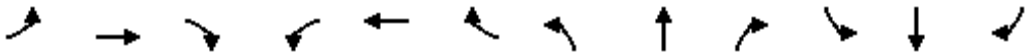
Intersection Summary				
Average Delay	65.2			
Intersection Capacity Utilization	75.9%	ICU Level of Service	D	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	326	68	50	463	34	141	41	47	76	32	7
Future Volume (vph)	6	326	68	50	463	34	141	41	47	76	32	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.0	5.0			3.5			3.5	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.97		1.00	0.99			0.97			0.99	
Flt Protected	0.95	1.00		0.95	1.00			0.97			0.97	
Satd. Flow (prot)	1770	1814		1770	1844			1757			1788	
Flt Permitted	0.95	1.00		0.95	1.00			0.76			0.72	
Satd. Flow (perm)	1770	1814		1770	1844			1384			1331	
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)	7	354	74	54	503	37	153	45	51	83	35	8
RTOR Reduction (vph)	0	9	0	0	3	0	0	14	0	0	4	0
Lane Group Flow (vph)	7	419	0	54	537	0	0	235	0	0	122	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases							4			8		
Actuated Green, G (s)	1.0	35.0		4.7	38.7			14.9			14.9	
Effective Green, g (s)	1.0	35.0		4.7	38.7			14.9			14.9	
Actuated g/C Ratio	0.01	0.52		0.07	0.58			0.22			0.22	
Clearance Time (s)	4.0	5.0		4.0	5.0			3.5			3.5	
Vehicle Extension (s)	2.5	2.5		2.5	2.5			2.0			3.0	
Lane Grp Cap (vph)	26	946		123	1063			307			295	
v/s Ratio Prot	0.00	c0.23		0.03	c0.29							
v/s Ratio Perm								c0.17			0.09	
v/c Ratio	0.27	0.44		0.44	0.51			0.77			0.41	
Uniform Delay, d1	32.7	10.0		29.9	8.5			24.5			22.4	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	4.0	1.5		1.8	1.7			9.8			0.9	
Delay (s)	36.7	11.5		31.8	10.2			34.3			23.3	
Level of Service	D	B		C	B			C			C	
Approach Delay (s)		11.9			12.2			34.3			23.3	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	17.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	67.1	Sum of lost time (s)	12.5
Intersection Capacity Utilization	55.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	0	227	15	0	36	368	496	21	41	378	59
Future Volume (vph)	30	0	227	15	0	36	368	496	21	41	378	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00		0.85	1.00	0.85		1.00	0.99		1.00	0.98	
Flt Protected	0.95		1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770		1583	1770	1583		1770	1851		1770	1825	
Flt Permitted	0.95		1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770		1583	1770	1583		1770	1851		1770	1825	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.93	0.93	0.93
Adj. Flow (vph)	33	0	247	16	0	39	400	539	23	44	406	63
RTOR Reduction (vph)	0	0	221	0	36	0	0	1	0	0	5	0
Lane Group Flow (vph)	33	0	26	16	3	0	400	561	0	44	464	0
Turn Type	Prot		Perm	Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4									
Actuated Green, G (s)	1.8		7.5	0.7	6.4		18.1	42.0		2.3	26.2	
Effective Green, g (s)	1.8		7.5	0.7	6.4		18.1	42.0		2.3	26.2	
Actuated g/C Ratio	0.02		0.10	0.01	0.09		0.25	0.58		0.03	0.36	
Clearance Time (s)	5.0		5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	43		163	17	139		441	1072		56	659	
v/s Ratio Prot	c0.02			0.01	0.00		c0.23	0.30		0.02	c0.25	
v/s Ratio Perm			c0.02									
v/c Ratio	0.77		0.16	0.94	0.02		0.91	0.52		0.79	0.70	
Uniform Delay, d1	35.1		29.6	35.9	30.2		26.4	9.2		34.9	19.8	
Progression Factor	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	56.1		0.5	188.5	0.1		21.9	1.8		50.4	6.2	
Delay (s)	91.3		30.1	224.4	30.3		48.3	11.0		85.3	26.0	
Level of Service	F		C	F	C		D	B		F	C	
Approach Delay (s)		37.3			86.8			26.5			31.1	
Approach LOS		D			F			C			C	

Intersection Summary			
HCM 2000 Control Delay	31.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	72.5	Sum of lost time (s)	20.0
Intersection Capacity Utilization	64.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

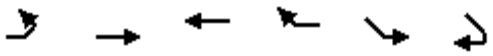
Movement	NBL	NBT	NBR2	SBL	SBT	SBR	NEL	NER	NER2	SWL2	SWL	SWT
Lane Configurations												
Traffic Volume (vph)	25	3	88	227	19	63	50	550	29	51	117	787
Future Volume (vph)	25	3	88	227	19	63	50	550	29	51	117	787
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.5	3.5	3.5	3.5		3.5	4.4			3.5	4.4
Lane Util. Factor		1.00	1.00	0.95	0.95		1.00	0.88			0.97	0.95
Frt		1.00	0.85	1.00	0.94		1.00	0.85			1.00	1.00
Flt Protected		0.96	1.00	0.95	0.98		0.95	1.00			0.95	1.00
Satd. Flow (prot)		1783	1583	1681	1621		1770	2787			3433	3539
Flt Permitted		0.96	1.00	0.95	0.98		0.95	1.00			0.95	1.00
Satd. Flow (perm)		1783	1583	1681	1621		1770	2787			3433	3539
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)	25	3	88	227	19	63	50	550	29	51	117	787
RTOR Reduction (vph)	0	0	82	0	44	0	0	59	0	0	155	0
Lane Group Flow (vph)	0	28	6	159	106	0	50	520	0	0	13	787
Turn Type	Split	NA	Perm	Split	NA		Prot	Prot		custom	Prot	NA
Protected Phases	7	7		8	8		5	2			1	6
Permitted Phases			7							1		
Actuated Green, G (s)		5.1	5.1	14.7	14.7		3.6	34.6			5.7	36.7
Effective Green, g (s)		5.1	5.1	14.7	14.7		3.6	34.6			5.7	36.7
Actuated g/C Ratio		0.07	0.07	0.20	0.20		0.05	0.46			0.08	0.49
Clearance Time (s)		3.5	3.5	3.5	3.5		3.5	4.4			3.5	4.4
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)		121	107	329	317		84	1285			260	1731
v/s Ratio Prot		c0.02		c0.09	0.07		c0.03	0.19				c0.22
v/s Ratio Perm			0.00								0.00	
v/c Ratio		0.23	0.06	0.48	0.33		0.60	0.40			0.05	0.45
Uniform Delay, d1		33.1	32.7	26.8	25.9		35.0	13.4			32.1	12.6
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00			2.84	0.64
Incremental Delay, d2		1.0	0.2	1.1	0.6		10.8	0.9			0.1	0.8
Delay (s)		34.1	32.9	27.9	26.6		45.8	14.3			91.2	8.8
Level of Service		C	C	C	C		D	B			F	A
Approach Delay (s)		33.2			27.2							18.7
Approach LOS		C			C							B

Intersection Summary			
HCM 2000 Control Delay	20.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	14.9
Intersection Capacity Utilization	52.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SWR
Lane Configurations	
Traffic Volume (vph)	303
Future Volume (vph)	303
Ideal Flow (vphpl)	1900
Total Lost time (s)	4.4
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	1.00
Adj. Flow (vph)	303
RTOR Reduction (vph)	155
Lane Group Flow (vph)	148
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Actuated Green, G (s)	36.7
Effective Green, g (s)	36.7
Actuated g/C Ratio	0.49
Clearance Time (s)	4.4
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	774
v/s Ratio Prot	
v/s Ratio Perm	0.09
v/c Ratio	0.19
Uniform Delay, d1	10.8
Progression Factor	0.34
Incremental Delay, d2	0.5
Delay (s)	4.1
Level of Service	A
Approach Delay (s)	
Approach LOS	

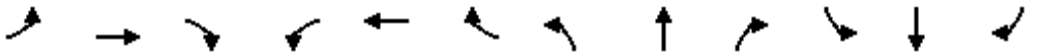
Intersection Summary



Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Traffic Volume (vph)	0	797	0	0	398	0
Future Volume (vph)	0	797	0	0	398	0
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950
Total Lost time (s)		4.0			10.0	
Lane Util. Factor		0.95			0.97	
Frt		1.00			1.00	
Flt Protected		1.00			0.95	
Satd. Flow (prot)		3632			3523	
Flt Permitted		1.00			0.95	
Satd. Flow (perm)		3632			3523	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	797	0	0	398	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	797	0	0	398	0
Turn Type		NA			Prot	
Protected Phases		Free!			4!	
Permitted Phases						
Actuated Green, G (s)		75.0			26.0	
Effective Green, g (s)		75.0			26.0	
Actuated g/C Ratio		1.00			0.35	
Clearance Time (s)					10.0	
Vehicle Extension (s)					3.0	
Lane Grp Cap (vph)		3632			1221	
v/s Ratio Prot		0.22			c0.11	
v/s Ratio Perm						
v/c Ratio		0.22			0.33	
Uniform Delay, d1		0.0			18.0	
Progression Factor		1.00			1.00	
Incremental Delay, d2		0.1			0.7	
Delay (s)		0.1			18.8	
Level of Service		A			B	
Approach Delay (s)		0.1	0.0		18.8	
Approach LOS		A	A		B	

Intersection Summary			
HCM 2000 Control Delay	6.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	51.0%	ICU Level of Service	A
Analysis Period (min)	15		

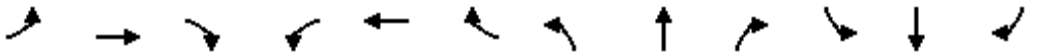
! Phase conflict between lane groups.
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	223	67	6	65	36	146	15	1177	75	179	1034	228
Future Volume (vph)	223	67	6	65	36	146	15	1177	75	179	1034	228
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
Lane Util. Factor	*1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3539	1863	1583	1770	1863	1557	1770	3539	1451	1770	3539	1550
Flt Permitted	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 (perm)	3539	1863	1583	1770	1863	1557	1770	3539	1451	1770	3539	1550
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	235	71	6	68	38	154	16	1239	79	188	1088	240
RTOR Reduction (vph)	0	0	5	0	0	138	0	0	43	0	0	77
Lane Group Flow (vph)	235	71	1	68	38	16	16	1239	36	188	1088	163
Confl. Bikes (#/hr)						2			1			2
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	9%	2%	2%	2%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Actuated Green, G (s)	7.0	9.7	9.7	4.8	7.5	7.5	0.8	36.3	36.3	10.0	45.5	45.5
Effective Green, g (s)	7.0	9.7	9.7	4.8	7.5	7.5	0.8	36.3	36.3	10.0	45.5	45.5
Actuated g/C Ratio	0.09	0.12	0.12	0.06	0.10	0.10	0.01	0.46	0.46	0.13	0.58	0.58
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0	2.0	3.0	3.0
Lane Grp Cap (vph)	314	229	194	107	177	148	17	1630	668	224	2043	894
v/s Ratio Prot	c0.07	c0.04		0.04	0.02		0.01	c0.35		c0.11	0.31	
v/s Ratio Perm			0.00			0.01			0.03			0.10
v/c Ratio	0.75	0.31	0.00	0.64	0.21	0.11	0.94	0.76	0.05	0.84	0.53	0.18
Uniform Delay, d1	35.0	31.5	30.3	36.1	32.9	32.6	39.0	17.6	11.8	33.6	10.2	7.9
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	8.3	0.3	0.0	8.7	0.2	0.1	187.2	2.1	0.0	22.3	0.3	0.1
Delay (s)	43.3	31.8	30.3	44.9	33.2	32.7	226.2	19.8	11.8	55.9	10.4	8.0
Level of Service	D	C	C	D	C	C	F	B	B	E	B	A
Approach Delay (s)		40.4			36.0			21.8			15.7	
Approach LOS		D			D			C			B	

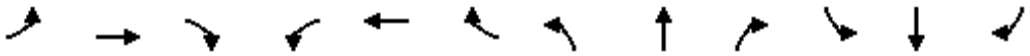
Intersection Summary			
HCM 2000 Control Delay	21.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	78.8	Sum of lost time (s)	18.0
Intersection Capacity Utilization	67.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	5	73	35	5	8	140	1178	93	114	962	3
Future Volume (vph)	4	5	73	35	5	8	140	1178	93	114	962	3
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	5.0		4.0	5.0	5.0
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes		0.99			1.00		1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Frt		0.88			0.98		1.00	0.99		1.00	1.00	0.85
Flt Protected		1.00			0.96		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1613			1745		1770	3495		1770	3539	1536
Flt Permitted		0.99			0.84		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1596			1526		1770	3495		1770	3539	1536
Peak-hour factor, PHF	0.92	0.92	0.92	0.96	0.96	0.96	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	4	5	79	36	5	8	151	1267	100	123	1034	3
RTOR Reduction (vph)	0	68	0	0	7	0	0	6	0	0	0	2
Lane Group Flow (vph)	0	20	0	0	42	0	151	1361	0	123	1034	1
Confl. Peds. (#/hr)												7
Confl. Bikes (#/hr)			1						2			
Heavy Vehicles (%)	2%	2%	2%	3%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								6
Actuated Green, G (s)		8.0			8.0		9.8	28.8		7.7	26.7	26.7
Effective Green, g (s)		8.0			8.0		9.8	28.8		7.7	26.7	26.7
Actuated g/C Ratio		0.14			0.14		0.17	0.50		0.13	0.46	0.46
Clearance Time (s)		4.0			4.0		4.0	5.0		4.0	5.0	5.0
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		222			212		301	1750		237	1643	713
v/s Ratio Prot							c0.09	c0.39		0.07	0.29	
v/s Ratio Perm		0.01			c0.03							0.00
v/c Ratio		0.09			0.20		0.50	0.78		0.52	0.63	0.00
Uniform Delay, d1		21.6			21.9		21.6	11.7		23.2	11.7	8.3
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.2			0.5		1.3	2.2		1.9	0.8	0.0
Delay (s)		21.8			22.4		23.0	14.0		25.1	12.4	8.3
Level of Service		C			C		C	B		C	B	A
Approach Delay (s)		21.8			22.4			14.9			13.8	
Approach LOS		C			C			B			B	

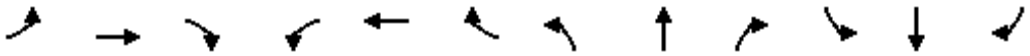
Intersection Summary			
HCM 2000 Control Delay	14.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	57.5	Sum of lost time (s)	13.0
Intersection Capacity Utilization	62.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	623	490	189	1094	10	525	10	119	10	10	10
Future Volume (vph)	10	623	490	189	1094	10	525	10	119	10	10	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0			5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.86			0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00			0.98	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	1605			1750	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00			0.98	
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	3433	1605			1750	
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)	11	677	533	205	1189	11	571	11	129	11	11	11
RTOR Reduction (vph)	0	0	242	0	0	6	0	97	0	0	10	0
Lane Group Flow (vph)	11	677	291	205	1189	5	571	43	0	0	23	0
Turn Type	Prot	NA	pt+ov	Prot	NA	Perm	Split	NA		Split	NA	
Protected Phases	5	2	2 8	1	6		8	8		4	4	
Permitted Phases						6						
Actuated Green, G (s)	0.6	26.6	48.6	13.6	39.6	39.6	22.0	22.0			6.7	
Effective Green, g (s)	0.6	26.6	48.6	13.6	39.6	39.6	22.0	22.0			6.7	
Actuated g/C Ratio	0.01	0.30	0.55	0.15	0.45	0.45	0.25	0.25			0.08	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0			5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)	11	1058	865	270	1576	705	849	397			131	
v/s Ratio Prot	0.01	0.19	0.18	c0.12	c0.34		c0.17	0.03			c0.01	
v/s Ratio Perm						0.00						
v/c Ratio	1.00	0.64	0.34	0.76	0.75	0.01	0.67	0.11			0.17	
Uniform Delay, d1	44.2	27.0	11.2	36.1	20.6	13.7	30.2	25.9			38.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	
Incremental Delay, d2	271.4	1.3	0.2	11.6	2.1	0.0	2.1	0.1			0.6	
Delay (s)	315.5	28.3	11.4	47.7	22.7	13.7	32.3	26.0			39.1	
Level of Service	F	C	B	D	C	B	C	C			D	
Approach Delay (s)		23.5			26.3			31.1			39.1	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	26.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	88.9	Sum of lost time (s)	20.0
Intersection Capacity Utilization	67.7%	ICU Level of Service	C
Analysis Period (min)	15		

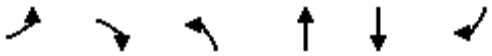
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	0	0	4	0	14	0	921	11	24	793	0
Future Volume (Veh/h)	1	0	0	4	0	14	0	921	11	24	793	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.96	0.96	0.96
Hourly flow rate (vph)	1	0	0	4	0	15	0	1001	12	25	826	0
Pedestrians											1	
Lane Width (ft)											12.0	
Walking Speed (ft/s)											4.0	
Percent Blockage											0	
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (ft)											663	
pX, platoon unblocked												
vC, conflicting volume	1899	1889	826	1883	1883	1008	826			1013		
vC1, stage 1 conf vol	876	876		1007	1007							
vC2, stage 2 conf vol	1023	1013		876	876							
vCu, unblocked vol	1899	1889	826	1883	1883	1008	826			1013		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	100	98	100	95	100			96		
cM capacity (veh/h)	196	229	372	218	240	292	805			677		

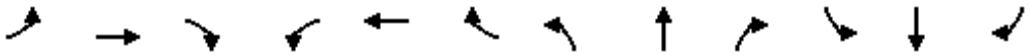
Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	1	19	1013	25	826
Volume Left	1	4	0	25	0
Volume Right	0	15	12	0	0
cSH	196	272	805	677	1700
Volume to Capacity	0.01	0.07	0.00	0.04	0.49
Queue Length 95th (ft)	0	6	0	3	0
Control Delay (s)	23.4	19.2	0.0	10.5	0.0
Lane LOS	C	C		B	
Approach Delay (s)	23.4	19.2	0.0	0.3	
Approach LOS	C	C			

Intersection Summary				
Average Delay	0.3			
Intersection Capacity Utilization	59.5%	ICU Level of Service	B	
Analysis Period (min)	15			



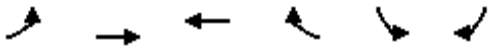
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	5	34	107	911	731	232
Future Volume (vph)	5	34	107	911	731	232
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	1.00		1.00	1.00	1.00	
Frt	0.88		1.00	1.00	0.97	
Flt Protected	0.99		0.95	1.00	1.00	
Satd. Flow (prot)	1632		1770	1863	1789	
Flt Permitted	0.99		0.24	1.00	1.00	
Satd. Flow (perm)	1632		452	1863	1789	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	37	116	990	795	252
RTOR Reduction (vph)	35	0	0	0	6	0
Lane Group Flow (vph)	7	0	116	990	1041	0
Heavy Vehicles (%)	2%	2%	2%	2%	3%	2%
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Actuated Green, G (s)	4.3		82.7	82.7	82.7	
Effective Green, g (s)	4.3		82.7	82.7	82.7	
Actuated g/C Ratio	0.05		0.87	0.87	0.87	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	73		393	1621	1557	
v/s Ratio Prot	c0.00			0.53	c0.58	
v/s Ratio Perm			0.26			
v/c Ratio	0.09		0.30	0.61	0.67	
Uniform Delay, d1	43.5		1.1	1.7	1.9	
Progression Factor	1.00		0.47	0.35	1.00	
Incremental Delay, d2	0.5		1.7	1.5	2.3	
Delay (s)	44.0		2.2	2.1	4.2	
Level of Service	D		A	A	A	
Approach Delay (s)	44.0			2.1	4.2	
Approach LOS	D			A	A	

Intersection Summary			
HCM 2000 Control Delay	3.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	71.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



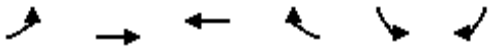
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	86	0	13	1	0	4	17	837	6	4	544	152
Future Volume (vph)	86	0	13	1	0	4	17	837	6	4	544	152
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.98			0.89		1.00	1.00		1.00	0.97	
Flt Protected		0.96			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1753			1645		1770	1861		1752	1784	
Flt Permitted		0.96			1.00		0.33	1.00		0.26	1.00	
Satd. Flow (perm)		1753			1662		616	1861		478	1784	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	91	0	14	1	0	4	18	890	6	4	579	162
RTOR Reduction (vph)	0	53	0	0	5	0	0	0	0	0	5	0
Lane Group Flow (vph)	0	52	0	0	0	0	18	896	0	4	736	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	3%	3%	3%
Turn Type	Split	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	4	4			8			2			6	
Permitted Phases				8			2			6		
Actuated Green, G (s)		7.4			1.1		74.5	74.5		74.5	74.5	
Effective Green, g (s)		7.4			1.1		74.5	74.5		74.5	74.5	
Actuated g/C Ratio		0.08			0.01		0.78	0.78		0.78	0.78	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		136			19		483	1459		374	1399	
v/s Ratio Prot		c0.03						c0.48			0.41	
v/s Ratio Perm					c0.00		0.03			0.01		
v/c Ratio		0.39			0.00		0.04	0.61		0.01	0.53	
Uniform Delay, d1		41.6			46.4		2.3	4.3		2.2	3.8	
Progression Factor		1.00			1.00		1.00	1.00		0.99	0.76	
Incremental Delay, d2		1.8			0.1		0.1	1.9		0.0	1.1	
Delay (s)		43.5			46.5		2.4	6.2		2.3	4.0	
Level of Service		D			D		A	A		A	A	
Approach Delay (s)		43.5			46.5			6.1			4.0	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM 2000 Control Delay	7.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	63.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	437	230	381	419	215	300
Future Volume (vph)	437	230	381	419	215	300
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.1	4.1	4.6	4.6	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1863	1863	1583	1770	1553
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1863	1863	1583	1770	1553
Peak-hour factor, PHF	0.94	0.94	0.92	0.92	0.92	0.92
Adj. Flow (vph)	465	245	414	455	234	326
RTOR Reduction (vph)	0	0	0	30	0	155
Lane Group Flow (vph)	465	245	414	425	234	171
Heavy Vehicles (%)	2%	2%	2%	2%	2%	4%
Turn Type	Prot	NA	NA	pm+ov	Prot	pm+ov
Protected Phases	5	2	6	7	7	5
Permitted Phases				6		4
Actuated Green, G (s)	13.3	36.4	19.1	32.1	13.0	26.3
Effective Green, g (s)	13.3	36.4	19.1	32.1	13.0	26.3
Actuated g/C Ratio	0.23	0.63	0.33	0.55	0.22	0.45
Clearance Time (s)	4.0	4.1	4.1	4.6	4.6	4.0
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	785	1167	612	874	396	702
v/s Ratio Prot	c0.14	0.13	c0.22	0.11	c0.13	0.06
v/s Ratio Perm				0.16		0.05
v/c Ratio	0.59	0.21	0.68	0.49	0.59	0.24
Uniform Delay, d1	20.0	4.7	16.8	8.0	20.2	9.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	0.0	2.3	0.2	1.6	0.1
Delay (s)	20.8	4.7	19.2	8.1	21.7	9.8
Level of Service	C	A	B	A	C	A
Approach Delay (s)		15.2	13.4		14.8	
Approach LOS		B	B		B	

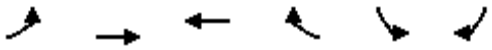
Intersection Summary			
HCM 2000 Control Delay	14.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	58.1	Sum of lost time (s)	12.7
Intersection Capacity Utilization	55.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	34	677	630	54	10	22
Future Volume (Veh/h)	34	677	630	54	10	22
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	37	736	685	59	11	24
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	TWLTL			
Median storage veh)			2			
Upstream signal (ft)			750			
pX, platoon unblocked	0.83				0.83	0.83
vC, conflicting volume	744				1495	685
vC1, stage 1 conf vol					685	
vC2, stage 2 conf vol					810	
vCu, unblocked vol	594				1494	523
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	95				97	95
cM capacity (veh/h)	819				329	462

Direction, Lane #	EB 1	WB 1	WB 2	SB 1
Volume Total	773	685	59	35
Volume Left	37	0	0	11
Volume Right	0	0	59	24
cSH	819	1700	1700	410
Volume to Capacity	0.05	0.40	0.03	0.09
Queue Length 95th (ft)	4	0	0	7
Control Delay (s)	1.2	0.0	0.0	14.6
Lane LOS	A			B
Approach Delay (s)	1.2	0.0		14.6
Approach LOS				B

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	73.3%	ICU Level of Service	D
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	148	460	460	39	52	103
Future Volume (vph)	148	460	460	39	52	103
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	
Lane Util. Factor	0.95	0.95	1.00		1.00	
Frt	1.00	1.00	0.99		0.91	
Flt Protected	0.95	1.00	1.00		0.98	
Satd. Flow (prot)	1681	1767	1843		1668	
Flt Permitted	0.22	0.97	1.00		0.98	
Satd. Flow (perm)	396	1725	1843		1668	
Peak-hour factor, PHF	0.75	0.75	0.75	0.75	0.75	0.75
Adj. Flow (vph)	197	613	613	52	69	137
RTOR Reduction (vph)	0	0	6	0	77	0
Lane Group Flow (vph)	177	633	659	0	129	0
Turn Type	Perm	NA	NA		Prot	
Protected Phases		4	8		6	
Permitted Phases	4					
Actuated Green, G (s)	38.3	38.3	38.3		28.7	
Effective Green, g (s)	38.3	38.3	38.3		28.7	
Actuated g/C Ratio	0.51	0.51	0.51		0.38	
Clearance Time (s)	4.0	4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	202	880	941		638	
v/s Ratio Prot			0.36		c0.08	
v/s Ratio Perm	c0.45	0.37				
v/c Ratio	0.88	0.72	0.70		0.20	
Uniform Delay, d1	16.3	14.2	14.0		15.5	
Progression Factor	0.71	0.73	1.00		1.00	
Incremental Delay, d2	28.4	2.4	2.4		0.7	
Delay (s)	39.9	12.8	16.4		16.2	
Level of Service	D	B	B		B	
Approach Delay (s)		18.7	16.4		16.2	
Approach LOS		B	B		B	

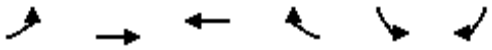
Intersection Summary			
HCM 2000 Control Delay	17.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	70.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	337	114	184	386	308	291
Future Volume (vph)	337	114	184	386	308	291
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	1.00		1.00	1.00	1.00	
Frt	0.97		1.00	1.00	0.93	
Flt Protected	1.00		0.95	1.00	0.97	
Satd. Flow (prot)	1799		1770	1863	1697	
Flt Permitted	1.00		0.26	1.00	0.97	
Satd. Flow (perm)	1799		490	1863	1697	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	359	121	196	411	328	310
RTOR Reduction (vph)	18	0	0	0	40	0
Lane Group Flow (vph)	462	0	196	411	598	0
Turn Type	NA		Perm	NA	Prot	
Protected Phases	4			8	2	
Permitted Phases			8			
Actuated Green, G (s)	28.2		28.2	28.2	38.8	
Effective Green, g (s)	28.2		28.2	28.2	38.8	
Actuated g/C Ratio	0.38		0.38	0.38	0.52	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	676		184	700	877	
v/s Ratio Prot	0.26			0.22	c0.35	
v/s Ratio Perm			c0.40			
v/c Ratio	0.68		1.07	0.59	0.68	
Uniform Delay, d1	19.7		23.4	18.7	13.5	
Progression Factor	1.00		0.72	0.72	1.00	
Incremental Delay, d2	2.9		80.5	1.1	4.3	
Delay (s)	22.5		97.2	14.7	17.8	
Level of Service	C		F	B	B	
Approach Delay (s)	22.5			41.3	17.8	
Approach LOS	C			D	B	

Intersection Summary			
HCM 2000 Control Delay	27.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	79.8%	ICU Level of Service	D
Analysis Period (min)	15		

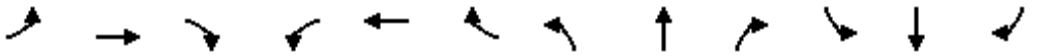
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	12	458	723	50	3	9
Future Volume (Veh/h)	12	458	723	50	3	9
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	13	498	786	54	3	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	840				1337	813
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	840				1337	813
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				98	97
cM capacity (veh/h)	795				166	378

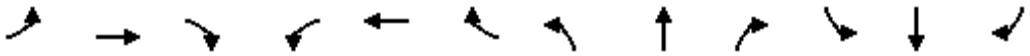
Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	511	840	13
Volume Left	13	0	3
Volume Right	0	54	10
cSH	795	1700	292
Volume to Capacity	0.02	0.49	0.04
Queue Length 95th (ft)	1	0	3
Control Delay (s)	0.5	0.0	17.9
Lane LOS	A		C
Approach Delay (s)	0.5	0.0	17.9
Approach LOS			C

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	51.1%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	125	139	17	34	372	721	14	138	15	328	64	94
Future Volume (vph)	125	139	17	34	372	721	14	138	15	328	64	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.6		3.0	4.6	4.6	3.0	4.6		3.5	4.6	
Lane Util. Factor	1.00	0.95		1.00	1.00	0.88	1.00	1.00		0.97	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.99		1.00	0.91	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3482		1770	1863	2787	1770	1836		3433	1675	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3482		1770	1863	2787	1770	1836		3433	1675	
Peak-hour factor, PHF	0.98	0.98	0.98	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	128	142	17	37	404	784	15	150	16	357	70	102
RTOR Reduction (vph)	0	7	0	0	0	0	0	5	0	0	66	0
Lane Group Flow (vph)	128	152	0	37	404	784	15	161	0	357	106	0
Confl. Peds. (#/hr)												1
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						6						
Actuated Green, G (s)	10.5	47.3		4.5	41.3	41.3	2.9	15.3		12.2	25.1	
Effective Green, g (s)	10.5	47.3		4.5	41.3	41.3	2.9	15.3		12.2	25.1	
Actuated g/C Ratio	0.11	0.50		0.05	0.43	0.43	0.03	0.16		0.13	0.26	
Clearance Time (s)	3.0	4.6		3.0	4.6	4.6	3.0	4.6		3.5	4.6	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		3.0	2.0	
Lane Grp Cap (vph)	195	1733		83	809	1211	54	295		440	442	
v/s Ratio Prot	c0.07	0.04		0.02	0.22		0.01	c0.09		c0.10	0.06	
v/s Ratio Perm						c0.28						
v/c Ratio	0.66	0.09		0.45	0.50	0.65	0.28	0.55		0.81	0.24	
Uniform Delay, d1	40.5	12.5		44.0	19.4	21.1	45.0	36.7		40.3	27.5	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		0.85	0.69	
Incremental Delay, d2	5.9	0.1		1.4	2.2	2.7	1.0	1.1		10.3	0.1	
Delay (s)	46.5	12.6		45.4	21.6	23.8	46.0	37.8		44.4	19.1	
Level of Service	D	B		D	C	C	D	D		D	B	
Approach Delay (s)		27.7			23.7			38.4			36.2	
Approach LOS		C			C			D			D	

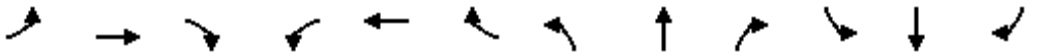
Intersection Summary			
HCM 2000 Control Delay	28.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	15.7
Intersection Capacity Utilization	58.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	30	0	0	236	31	690	78	149	551	14
Future Volume (Veh/h)	0	0	30	0	0	236	31	690	78	149	551	14
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	33	0	0	257	34	750	85	162	599	15
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											571	
pX, platoon unblocked												
vC, conflicting volume	1630	1834	307	1517	1798	418	614			835		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1630	1834	307	1517	1798	418	614			835		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	95	100	100	56	96			80		
cM capacity (veh/h)	31	58	689	64	61	584	961			794		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	33	257	34	500	335	162	399	215
Volume Left	0	0	34	0	0	162	0	0
Volume Right	33	257	0	0	85	0	0	15
cSH	689	584	961	1700	1700	794	1700	1700
Volume to Capacity	0.05	0.44	0.04	0.29	0.20	0.20	0.23	0.13
Queue Length 95th (ft)	4	56	3	0	0	19	0	0
Control Delay (s)	10.5	15.9	8.9	0.0	0.0	10.7	0.0	0.0
Lane LOS	B	C	A			B		
Approach Delay (s)	10.5	15.9	0.3			2.2		
Approach LOS	B	C						

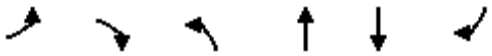
Intersection Summary				
Average Delay	3.3			
Intersection Capacity Utilization	42.8%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	32	459	22	44	19	979	164	29	23	213	214
Future Volume (vph)	75	32	459	22	44	19	979	164	29	23	213	214
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0		5.0	5.0	5.0	5.0		5.0	5.0	5.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00	0.97	1.00		1.00	1.00	1.00
Frt	1.00	0.87	0.85		1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		0.98	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1539	1504		1832	1583	3433	1820		1770	1863	1583
Flt Permitted	0.95	1.00	1.00		0.98	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1539	1504		1832	1583	3433	1820		1770	1863	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)	82	35	499	24	48	21	1064	178	32	25	232	233
RTOR Reduction (vph)	0	207	123	0	0	19	0	5	0	0	0	193
Lane Group Flow (vph)	82	63	141	0	72	2	1064	205	0	25	232	40
Turn Type	Split	NA	pt+ov	Split	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	4	4	4 5	8	8		5	2		1	6	
Permitted Phases						8						6
Actuated Green, G (s)	11.5	11.5	50.9		7.8	7.8	39.4	53.2		2.5	16.3	16.3
Effective Green, g (s)	11.5	11.5	50.9		7.8	7.8	39.4	53.2		2.5	16.3	16.3
Actuated g/C Ratio	0.12	0.12	0.54		0.08	0.08	0.41	0.56		0.03	0.17	0.17
Clearance Time (s)	5.0	5.0			5.0	5.0	5.0	5.0		5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	214	186	805		150	129	1423	1019		46	319	271
v/s Ratio Prot	c0.05	0.04	0.09		c0.04		c0.31	0.11		0.01	c0.12	
v/s Ratio Perm						0.00						0.03
v/c Ratio	0.38	0.34	0.18		0.48	0.01	0.75	0.20		0.54	0.73	0.15
Uniform Delay, d1	38.5	38.3	11.3		41.7	40.1	23.6	10.4		45.7	37.2	33.4
Progression Factor	1.00	1.00	1.00		1.00	1.00	0.76	0.68		1.00	1.00	1.00
Incremental Delay, d2	1.1	1.1	0.1		2.4	0.0	2.1	0.4		12.5	13.6	1.1
Delay (s)	39.6	39.4	11.4		44.1	40.1	20.1	7.4		58.2	50.8	34.6
Level of Service	D	D	B		D	D	C	A		E	D	C
Approach Delay (s)		27.4			43.2			18.0			43.5	
Approach LOS		C			D			B			D	

Intersection Summary			
HCM 2000 Control Delay	26.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	71.1%	ICU Level of Service	C
Analysis Period (min)	15		

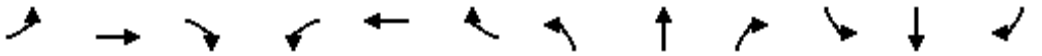
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	57	0	1	239	448	116
Future Volume (Veh/h)	57	0	1	239	448	116
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.96	0.96
Hourly flow rate (vph)	62	0	1	260	467	121
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		2				
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				389		
pX, platoon unblocked	0.97					
vC, conflicting volume	790	528	588			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	770	528	588			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	83	100	100			
cM capacity (veh/h)	359	551	987			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	62	1	260	588
Volume Left	62	1	0	0
Volume Right	0	0	0	121
cSH	354	987	1700	1700
Volume to Capacity	0.17	0.00	0.15	0.35
Queue Length 95th (ft)	16	0	0	0
Control Delay (s)	17.3	8.7	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	17.3	0.0		0.0
Approach LOS	C			

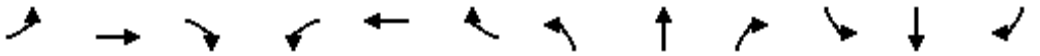
Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	40.6%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	157	0	34	129	395	0	0	90	178
Future Volume (vph)	0	0	0	157	0	34	129	395	0	0	90	178
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
Lane Util. Factor					1.00	1.00	1.00	0.95			1.00	1.00
Frt					1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected					0.95	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)					1770	1583	1770	3539			1863	1583
Flt Permitted					0.95	1.00	0.69	1.00			1.00	1.00
Satd. Flow (perm)					1770	1583	1292	3539			1863	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)	0	0	0	171	0	37	140	429	0	0	98	193
RTOR Reduction (vph)	0	0	0	0	0	30	0	0	0	0	0	53
Lane Group Flow (vph)	0	0	0	0	171	7	140	429	0	0	98	140
Turn Type				Perm	NA	Perm	Perm	NA			NA	Perm
Protected Phases					8			2			6	
Permitted Phases				8		8	2					6
Actuated Green, G (s)					12.7	12.7	54.3	54.3			54.3	54.3
Effective Green, g (s)					12.7	12.7	54.3	54.3			54.3	54.3
Actuated g/C Ratio					0.17	0.17	0.72	0.72			0.72	0.72
Clearance Time (s)					4.0	4.0	4.0	4.0			4.0	4.0
Vehicle Extension (s)					3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)					299	268	935	2562			1348	1146
v/s Ratio Prot								c0.12			0.05	
v/s Ratio Perm					0.10	0.00	0.11					0.09
v/c Ratio					0.57	0.03	0.15	0.17			0.07	0.12
Uniform Delay, d1					28.6	26.0	3.2	3.3			3.0	3.1
Progression Factor					1.00	1.00	0.54	0.54			1.00	1.00
Incremental Delay, d2					2.6	0.0	0.3	0.1			0.1	0.2
Delay (s)					31.3	26.0	2.1	1.9			3.1	3.4
Level of Service					C	C	A	A			A	A
Approach Delay (s)		0.0			30.3			1.9			3.3	
Approach LOS		A			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	7.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.24		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	44.2%	ICU Level of Service	A
Analysis Period (min)	15		

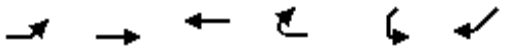
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	222	2	125	0	0	0	0	302	144	30	217	0
Future Volume (vph)	222	2	125	0	0	0	0	302	144	30	217	0
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	
Lane Util. Factor		1.00	1.00					0.95	1.00	1.00	1.00	
Frt		1.00	0.85					1.00	0.85	1.00	1.00	
Flt Protected		0.95	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1775	1583					3539	1583	1770	1863	
Flt Permitted		0.95	1.00					1.00	1.00	0.55	1.00	
Satd. Flow (perm)		1775	1583					3539	1583	1031	1863	
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)	241	2	136	0	0	0	0	328	157	33	236	0
RTOR Reduction (vph)	0	0	107	0	0	0	0	0	50	0	0	0
Lane Group Flow (vph)	0	243	29	0	0	0	0	328	107	33	236	0
Turn Type	Perm	NA	Perm					NA	Perm	Perm	NA	
Protected Phases		4						2			6	
Permitted Phases	4		4						2	6		
Actuated Green, G (s)		16.1	16.1					50.9	50.9	50.9	50.9	
Effective Green, g (s)		16.1	16.1					50.9	50.9	50.9	50.9	
Actuated g/C Ratio		0.21	0.21					0.68	0.68	0.68	0.68	
Clearance Time (s)		4.0	4.0					4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0					3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		381	339					2401	1074	699	1264	
v/s Ratio Prot								0.09			c0.13	
v/s Ratio Perm		0.14	0.02						0.07	0.03		
v/c Ratio		0.64	0.09					0.14	0.10	0.05	0.19	
Uniform Delay, d1		26.8	23.6					4.3	4.2	4.0	4.4	
Progression Factor		1.00	1.00					1.00	1.00	0.49	0.43	
Incremental Delay, d2		3.5	0.1					0.1	0.2	0.1	0.3	
Delay (s)		30.3	23.7					4.4	4.3	2.1	2.2	
Level of Service		C	C					A	A	A	A	
Approach Delay (s)		27.9			0.0			4.4			2.2	
Approach LOS		C			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	11.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	44.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations			↑↑			↱
Traffic Volume (vph)	0	0	824	0	0	434
Future Volume (vph)	0	0	824	0	0	434
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950
Total Lost time (s)			4.0			10.0
Lane Util. Factor			0.95			1.00
Frt			1.00			0.86
Flt Protected			1.00			1.00
Satd. Flow (prot)			3632			1654
Flt Permitted			1.00			1.00
Satd. Flow (perm)			3632			1654
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	824	0	0	434
RTOR Reduction (vph)	0	0	0	0	0	37
Lane Group Flow (vph)	0	0	824	0	0	397
Turn Type			NA			Prot
Protected Phases			Free!			2!
Permitted Phases						
Actuated Green, G (s)			75.0			29.0
Effective Green, g (s)			75.0			29.0
Actuated g/C Ratio			1.00			0.39
Clearance Time (s)						10.0
Vehicle Extension (s)						3.0
Lane Grp Cap (vph)			3632			639
v/s Ratio Prot			0.23			c0.24
v/s Ratio Perm						
v/c Ratio			0.23			0.62
Uniform Delay, d1			0.0			18.6
Progression Factor			1.00			1.00
Incremental Delay, d2			0.1			4.5
Delay (s)			0.1			23.1
Level of Service			A			C
Approach Delay (s)		0.0	0.1		23.1	
Approach LOS		A	A		C	

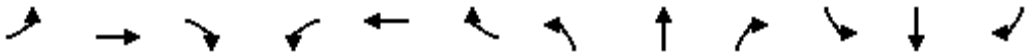
Intersection Summary			
HCM 2000 Control Delay	8.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	60.3%	ICU Level of Service	B
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			↑↑	↱		↑↑
Traffic Volume (veh/h)	0	0	1033	411	0	1390
Future Volume (Veh/h)	0	0	1033	411	0	1390
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	0	1087	433	0	1463
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1818	544			1520	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1818	544			1520	
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)	69	484			435	

Direction, Lane #	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	544	544	433	732	732
Volume Left	0	0	0	0	0
Volume Right	0	0	433	0	0
cSH	1700	1700	1700	1700	1700
Volume to Capacity	0.32	0.32	0.25	0.43	0.43
Queue Length 95th (ft)	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0
Lane LOS					
Approach Delay (s)	0.0			0.0	
Approach LOS					

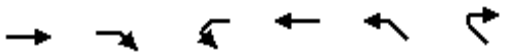
Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	41.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	18	0	0	71	0	1098	30	0	998	36
Future Volume (Veh/h)	0	0	18	0	0	71	0	1098	30	0	998	36
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	20	0	0	77	0	1193	33	0	1085	39
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								563			571	
pX, platoon unblocked	0.75	0.75	0.88	0.75	0.75	0.69	0.88			0.69		
vC, conflicting volume	1778	2330	381	1591	2334	613	1124			1226		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	387	1126	0	137	1130	0	655			416		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	98	100	100	90	100			100		
cM capacity (veh/h)	366	152	952	600	151	745	815			782		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	20	77	795	431	434	434	256
Volume Left	0	0	0	0	0	0	0
Volume Right	20	77	0	33	0	0	39
cSH	952	745	1700	1700	1700	1700	1700
Volume to Capacity	0.02	0.10	0.47	0.25	0.26	0.26	0.15
Queue Length 95th (ft)	2	9	0	0	0	0	0
Control Delay (s)	8.9	10.4	0.0	0.0	0.0	0.0	0.0
Lane LOS	A	B					
Approach Delay (s)	8.9	10.4	0.0		0.0		
Approach LOS	A	B					

Intersection Summary				
Average Delay	0.4			
Intersection Capacity Utilization	42.4%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations				↑↑↑	↰	
Traffic Volume (vph)	0	0	0	1185	158	0
Future Volume (vph)	0	0	0	1185	158	0
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950
Total Lost time (s)				4.0	10.0	
Lane Util. Factor				0.91	1.00	
Frt				1.00	1.00	
Flt Protected				1.00	0.95	
Satd. Flow (prot)				5219	1816	
Flt Permitted				1.00	0.95	
Satd. Flow (perm)				5219	1816	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	1185	158	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	1185	158	0
Turn Type				NA	Prot	
Protected Phases				Free!	4!	
Permitted Phases						
Actuated Green, G (s)				75.0	17.0	
Effective Green, g (s)				75.0	17.0	
Actuated g/C Ratio				1.00	0.23	
Clearance Time (s)					10.0	
Vehicle Extension (s)					3.0	
Lane Grp Cap (vph)				5219	411	
v/s Ratio Prot				0.23	c0.09	
v/s Ratio Perm						
v/c Ratio				0.23	0.38	
Uniform Delay, d1				0.0	24.6	
Progression Factor				1.00	1.00	
Incremental Delay, d2				0.1	2.7	
Delay (s)				0.1	27.3	
Level of Service				A	C	
Approach Delay (s)	0.0			0.1	27.3	
Approach LOS	A			A	C	

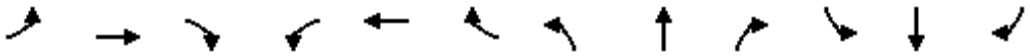
Intersection Summary			
HCM 2000 Control Delay	3.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	42.5%	ICU Level of Service	A
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	941	0	0	0	0	616
Future Volume (vph)	941	0	0	0	0	616
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950
Total Lost time (s)	4.0					10.0
Lane Util. Factor	0.91					0.88
Frt	1.00					0.85
Flt Protected	1.00					1.00
Satd. Flow (prot)	5219					2860
Flt Permitted	1.00					1.00
Satd. Flow (perm)	5219					2860
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	941	0	0	0	0	616
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	941	0	0	0	0	616
Turn Type	NA					Prot
Protected Phases	Free!					2!
Permitted Phases						
Actuated Green, G (s)	75.0					38.0
Effective Green, g (s)	75.0					38.0
Actuated g/C Ratio	1.00					0.51
Clearance Time (s)						10.0
Vehicle Extension (s)						3.0
Lane Grp Cap (vph)	5219					1449
v/s Ratio Prot	0.18					c0.22
v/s Ratio Perm						
v/c Ratio	0.18					0.43
Uniform Delay, d1	0.0					11.6
Progression Factor	1.00					1.00
Incremental Delay, d2	0.0					0.9
Delay (s)	0.0					12.5
Level of Service	A					B
Approach Delay (s)	0.0			0.0	12.5	
Approach LOS	A			A	B	

Intersection Summary			
HCM 2000 Control Delay	5.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	56.7%	ICU Level of Service	B
Analysis Period (min)	15		

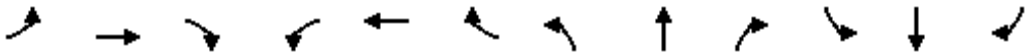
! Phase conflict between lane groups.
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	265	45	72	382	189	53	62	86	87	37	10
Future Volume (vph)	11	265	45	72	382	189	53	62	86	87	37	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0		4.0	5.0			3.5			3.5	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.98		1.00	0.95			0.94			0.99	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.97	
Satd. Flow (prot)	1770	1822		1770	1770			1732			1786	
Flt Permitted	0.95	1.00		0.95	1.00			0.89			0.51	
Satd. Flow (perm)	1770	1822		1770	1770			1561			937	
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)	12	288	49	78	415	205	58	67	93	95	40	11
RTOR Reduction (vph)	0	5	0	0	14	0	0	31	0	0	3	0
Lane Group Flow (vph)	12	332	0	78	606	0	0	187	0	0	143	0
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			4			8	
Permitted Phases							4			8		
Actuated Green, G (s)	1.1	50.7		8.9	58.5			15.5			15.5	
Effective Green, g (s)	1.1	50.7		8.9	58.5			15.5			15.5	
Actuated g/C Ratio	0.01	0.58		0.10	0.67			0.18			0.18	
Clearance Time (s)	4.0	5.0		4.0	5.0			3.5			3.5	
Vehicle Extension (s)	2.5	2.5		2.5	2.5			2.0			3.0	
Lane Grp Cap (vph)	22	1054		179	1182			276			165	
v/s Ratio Prot	0.01	0.18		c0.04	c0.34							
v/s Ratio Perm								0.12			c0.15	
v/c Ratio	0.55	0.31		0.44	0.51			0.68			0.86	
Uniform Delay, d1	43.0	9.5		37.0	7.4			33.7			35.0	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	20.0	0.8		1.2	1.6			5.1			34.6	
Delay (s)	63.0	10.3		38.2	8.9			38.8			69.6	
Level of Service	E	B		D	A			D			E	
Approach Delay (s)		12.1			12.2			38.8			69.6	
Approach LOS		B			B			D			E	

Intersection Summary			
HCM 2000 Control Delay	22.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	87.6	Sum of lost time (s)	12.5
Intersection Capacity Utilization	61.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	97	0	489	26	0	59	396	507	12	29	376	56
Future Volume (vph)	97	0	489	26	0	59	396	507	12	29	376	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00		0.85	1.00	0.85		1.00	1.00		1.00	0.98	
Flt Protected	0.95		1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770		1583	1770	1583		1770	1856		1770	1827	
Flt Permitted	0.95		1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770		1583	1770	1583		1770	1856		1770	1827	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.93	0.93	0.93
Adj. Flow (vph)	105	0	532	28	0	64	430	551	13	31	404	60
RTOR Reduction (vph)	0	0	444	0	58	0	0	1	0	0	5	0
Lane Group Flow (vph)	105	0	88	28	6	0	430	563	0	31	459	0
Turn Type	Prot		Perm	Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4									
Actuated Green, G (s)	8.2		14.2	1.5	7.5		23.2	48.6		1.9	27.3	
Effective Green, g (s)	8.2		14.2	1.5	7.5		23.2	48.6		1.9	27.3	
Actuated g/C Ratio	0.10		0.16	0.02	0.09		0.27	0.56		0.02	0.32	
Clearance Time (s)	5.0		5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	168		260	30	137		476	1046		39	578	
v/s Ratio Prot	c0.06			0.02	0.00		c0.24	0.30		0.02	c0.25	
v/s Ratio Perm			c0.06									
v/c Ratio	0.62		0.34	0.93	0.04		0.90	0.54		0.79	0.79	
Uniform Delay, d1	37.5		31.8	42.3	36.1		30.4	11.8		42.0	26.9	
Progression Factor	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	7.1		0.8	135.3	0.1		20.3	2.0		68.4	10.7	
Delay (s)	44.6		32.6	177.6	36.2		50.7	13.8		110.4	37.6	
Level of Service	D		C	F	D		D	B		F	D	
Approach Delay (s)		34.6			79.2			29.7			42.2	
Approach LOS		C			E			C			D	

Intersection Summary			
HCM 2000 Control Delay	35.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	86.2	Sum of lost time (s)	20.0
Intersection Capacity Utilization	69.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

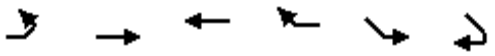
Movement	NBL	NBT	NBR2	SBL	SBT	SBR	NEL	NER	NER2	SWL2	SWL	SWT
Lane Configurations												
Traffic Volume (vph)	84	44	363	438	36	76	73	797	71	39	350	704
Future Volume (vph)	84	44	363	438	36	76	73	797	71	39	350	704
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.5	3.5	3.5	3.5		3.5	4.4			3.5	4.4
Lane Util. Factor		1.00	1.00	0.95	0.95		1.00	0.88			0.97	0.95
Frt		1.00	0.85	1.00	0.96		1.00	0.85			1.00	1.00
Flt Protected		0.97	1.00	0.95	0.97		0.95	1.00			0.95	1.00
Satd. Flow (prot)		1804	1583	1681	1647		1770	2787			3433	3539
Flt Permitted		0.97	1.00	0.95	0.97		0.95	1.00			0.95	1.00
Satd. Flow (perm)		1804	1583	1681	1647		1770	2787			3433	3539
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)	84	44	363	438	36	76	73	797	71	39	350	704
RTOR Reduction (vph)	0	0	166	0	20	0	0	69	0	0	154	0
Lane Group Flow (vph)	0	128	197	280	250	0	73	799	0	0	235	704
Turn Type	Split	NA	Perm	Split	NA		Prot	Prot		custom	Prot	NA
Protected Phases	7	7		8	8		5	2			1	6
Permitted Phases			7							1		
Actuated Green, G (s)		9.7	9.7	19.6	19.6		4.8	26.2			9.6	31.0
Effective Green, g (s)		9.7	9.7	19.6	19.6		4.8	26.2			9.6	31.0
Actuated g/C Ratio		0.12	0.12	0.25	0.25		0.06	0.33			0.12	0.39
Clearance Time (s)		3.5	3.5	3.5	3.5		3.5	4.4			3.5	4.4
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)		218	191	411	403		106	912			411	1371
v/s Ratio Prot		0.07		c0.17	0.15		0.04	c0.29				0.20
v/s Ratio Perm			c0.12								0.07	
v/c Ratio		0.59	1.03	0.68	0.62		0.69	0.88			0.57	0.51
Uniform Delay, d1		33.3	35.1	27.4	26.9		36.9	25.4			33.3	18.7
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00			0.56	0.76
Incremental Delay, d2		4.0	73.5	4.6	2.8		17.0	11.6			1.8	1.3
Delay (s)		37.3	108.6	32.0	29.7		53.9	37.0			20.3	15.4
Level of Service		D	F	C	C		D	D			C	B
Approach Delay (s)		90.0			30.9							16.7
Approach LOS		F			C							B

Intersection Summary			
HCM 2000 Control Delay	35.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	14.9
Intersection Capacity Utilization	93.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	SWR
Lane Configurations	
Traffic Volume (vph)	417
Future Volume (vph)	417
Ideal Flow (vphpl)	1900
Total Lost time (s)	4.4
Lane Util. Factor	1.00
Frt	0.85
Flt Protected	1.00
Satd. Flow (prot)	1583
Flt Permitted	1.00
Satd. Flow (perm)	1583
Peak-hour factor, PHF	1.00
Adj. Flow (vph)	417
RTOR Reduction (vph)	255
Lane Group Flow (vph)	162
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Actuated Green, G (s)	31.0
Effective Green, g (s)	31.0
Actuated g/C Ratio	0.39
Clearance Time (s)	4.4
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	613
v/s Ratio Prot	
v/s Ratio Perm	0.10
v/c Ratio	0.26
Uniform Delay, d1	16.7
Progression Factor	0.87
Incremental Delay, d2	1.0
Delay (s)	15.5
Level of Service	B
Approach Delay (s)	
Approach LOS	

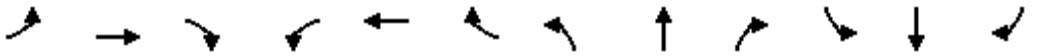
Intersection Summary



Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Traffic Volume (vph)	0	1444	0	0	594	0
Future Volume (vph)	0	1444	0	0	594	0
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950
Total Lost time (s)		4.0			10.0	
Lane Util. Factor		0.95			0.97	
Frt		1.00			1.00	
Flt Protected		1.00			0.95	
Satd. Flow (prot)		3632			3523	
Flt Permitted		1.00			0.95	
Satd. Flow (perm)		3632			3523	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	1444	0	0	594	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	1444	0	0	594	0
Turn Type		NA			Prot	
Protected Phases		Free!			4!	
Permitted Phases						
Actuated Green, G (s)		80.0			25.0	
Effective Green, g (s)		80.0			25.0	
Actuated g/C Ratio		1.00			0.31	
Clearance Time (s)					10.0	
Vehicle Extension (s)					3.0	
Lane Grp Cap (vph)		3632			1100	
v/s Ratio Prot		0.40			0.17	
v/s Ratio Perm						
v/c Ratio		0.40			0.54	
Uniform Delay, d1		0.0			22.7	
Progression Factor		1.00			1.00	
Incremental Delay, d2		0.1			1.9	
Delay (s)		0.1			24.6	
Level of Service		A			C	
Approach Delay (s)		0.1	0.0		24.6	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	7.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	74.1%	ICU Level of Service	D
Analysis Period (min)	15		

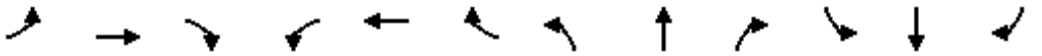
! Phase conflict between lane groups.
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	490	25	14	53	37	146	23	1175	37	135	1560	351
Future Volume (vph)	490	25	14	53	37	146	23	1175	37	135	1560	351
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
Lane Util. Factor	*1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3539	1863	1583	1770	1863	1556	1770	3539	1451	1770	3539	1550
Flt Permitted	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 (perm)	3539	1863	1583	1770	1863	1556	1770	3539	1451	1770	3539	1550
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	516	26	15	56	39	154	24	1237	39	142	1642	369
RTOR Reduction (vph)	0	0	13	0	0	138	0	0	21	0	0	71
Lane Group Flow (vph)	516	26	2	56	39	16	24	1237	18	142	1642	298
Confl. Bikes (#/hr)						2			1			2
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	9%	2%	2%	2%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Actuated Green, G (s)	18.1	16.1	16.1	11.0	9.0	9.0	2.3	49.5	49.5	11.0	58.2	58.2
Effective Green, g (s)	18.1	16.1	16.1	11.0	9.0	9.0	2.3	49.5	49.5	11.0	58.2	58.2
Actuated g/C Ratio	0.17	0.15	0.15	0.10	0.09	0.09	0.02	0.47	0.47	0.10	0.55	0.55
Clearance Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0	5.0
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0	2.0	3.0	3.0
Lane Grp Cap (vph)	606	284	241	184	158	132	38	1658	680	184	1950	854
v/s Ratio Prot	c0.15	0.01		0.03	c0.02		0.01	0.35		c0.08	c0.46	
v/s Ratio Perm			0.00			0.01			0.01			0.19
v/c Ratio	0.85	0.09	0.01	0.30	0.25	0.12	0.63	0.75	0.03	0.77	0.84	0.35
Uniform Delay, d1	42.4	38.5	38.0	43.8	45.1	44.6	51.2	22.9	15.1	46.1	19.9	13.2
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	10.7	0.1	0.0	0.3	0.3	0.1	22.5	1.9	0.0	16.5	3.5	0.2
Delay (s)	53.2	38.5	38.0	44.1	45.4	44.8	73.7	24.8	15.1	62.6	23.3	13.4
Level of Service	D	D	D	D	D	D	E	C	B	E	C	B
Approach Delay (s)		52.1			44.7			25.4			24.2	
Approach LOS		D			D			C			C	

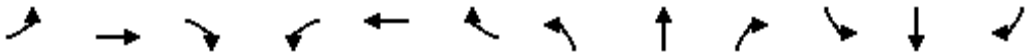
Intersection Summary			
HCM 2000 Control Delay	29.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	105.6	Sum of lost time (s)	18.0
Intersection Capacity Utilization	78.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	9	214	105	14	57	183	1101	51	96	1422	7
Future Volume (vph)	14	9	214	105	14	57	183	1101	51	96	1422	7
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	5.0		4.0	5.0	5.0
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes		0.99			1.00		1.00	1.00		1.00	1.00	0.96
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Frt		0.88			0.96		1.00	0.99		1.00	1.00	0.85
Flt Protected		1.00			0.97		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1612			1720		1770	3512		1770	3539	1528
Flt Permitted		0.98			0.45		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		1582			803		1770	3512		1770	3539	1528
Peak-hour factor, PHF	0.92	0.92	0.92	0.96	0.96	0.96	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	15	10	233	109	15	59	197	1184	55	103	1529	8
RTOR Reduction (vph)	0	182	0	0	19	0	0	4	0	0	0	4
Lane Group Flow (vph)	0	76	0	0	164	0	197	1235	0	103	1529	4
Confl. Peds. (#/hr)												7
Confl. Bikes (#/hr)			1						2			
Heavy Vehicles (%)	2%	2%	2%	3%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8								6
Actuated Green, G (s)		19.3			19.3		12.0	43.5		11.7	43.2	43.2
Effective Green, g (s)		19.3			19.3		12.0	43.5		11.7	43.2	43.2
Actuated g/C Ratio		0.22			0.22		0.14	0.50		0.13	0.49	0.49
Clearance Time (s)		4.0			4.0		4.0	5.0		4.0	5.0	5.0
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		348			177		242	1745		236	1747	754
v/s Ratio Prot							c0.11	0.35		0.06	c0.43	
v/s Ratio Perm		0.05			c0.20							0.00
v/c Ratio		0.22			0.93		0.81	0.71		0.44	0.88	0.01
Uniform Delay, d1		27.9			33.4		36.7	17.1		34.9	19.7	11.2
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.3			46.8		18.6	1.3		1.3	5.2	0.0
Delay (s)		28.3			80.2		55.2	18.4		36.2	25.0	11.2
Level of Service		C			F		E	B		D	C	B
Approach Delay (s)		28.3			80.2			23.5			25.6	
Approach LOS		C			F			C			C	

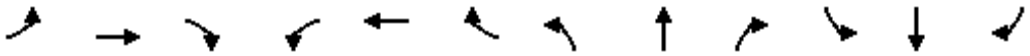
Intersection Summary			
HCM 2000 Control Delay	27.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	87.5	Sum of lost time (s)	13.0
Intersection Capacity Utilization	88.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	1166	714	169	816	10	598	10	204	10	10	10
Future Volume (vph)	10	1166	714	169	816	10	598	10	204	10	10	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0			5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00			1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.86			0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00			0.98	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	1597			1750	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00			0.98	
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	3433	1597			1750	
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)	11	1267	776	184	887	11	650	11	222	11	11	11
RTOR Reduction (vph)	0	0	247	0	0	5	0	171	0	0	10	0
Lane Group Flow (vph)	11	1267	529	184	887	6	650	62	0	0	23	0
Turn Type	Prot	NA	pt+ov	Prot	NA	Perm	Split	NA		Split	NA	
Protected Phases	5	2	2 8	1	6		8	8		4	4	
Permitted Phases						6						
Actuated Green, G (s)	1.5	57.9	88.0	16.7	73.1	73.1	30.1	30.1			7.5	
Effective Green, g (s)	1.5	57.9	88.0	16.7	73.1	73.1	30.1	30.1			7.5	
Actuated g/C Ratio	0.01	0.44	0.67	0.13	0.55	0.55	0.23	0.23			0.06	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0			5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)	20	1549	1053	223	1956	875	781	363			99	
v/s Ratio Prot	0.01	c0.36	0.33	c0.10	0.25		c0.19	0.04			c0.01	
v/s Ratio Perm						0.00						
v/c Ratio	0.55	0.82	0.50	0.83	0.45	0.01	0.83	0.17			0.23	
Uniform Delay, d1	65.0	32.5	11.1	56.3	17.6	13.3	48.6	41.0			59.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	
Incremental Delay, d2	28.9	3.5	0.4	21.3	0.2	0.0	7.6	0.2			1.2	
Delay (s)	93.9	36.0	11.5	77.7	17.8	13.3	56.2	41.2			60.8	
Level of Service	F	D	B	E	B	B	E	D			E	
Approach Delay (s)		27.1			27.9			52.3			60.8	
Approach LOS		C			C			D			E	

Intersection Summary			
HCM 2000 Control Delay	33.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	132.2	Sum of lost time (s)	20.0
Intersection Capacity Utilization	77.8%	ICU Level of Service	D
Analysis Period (min)	15		

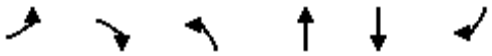
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	0	0	10	1	37	2	927	29	22	1141	1
Future Volume (Veh/h)	2	0	0	10	1	37	2	927	29	22	1141	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.96	0.96	0.96
Hourly flow rate (vph)	2	0	0	11	1	40	2	1008	32	23	1189	1
Pedestrians											1	
Lane Width (ft)											12.0	
Walking Speed (ft/s)											4.0	
Percent Blockage											0	
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (ft)											663	
pX, platoon unblocked												
vC, conflicting volume	2305	2280	1190	2263	2264	1025	1190			1040		
vC1, stage 1 conf vol	1236	1236		1028	1028							
vC2, stage 2 conf vol	1070	1044		1235	1236							
vCu, unblocked vol	2305	2280	1190	2263	2264	1025	1190			1040		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	100	93	99	86	100			97		
cM capacity (veh/h)	142	181	229	162	186	285	587			661		

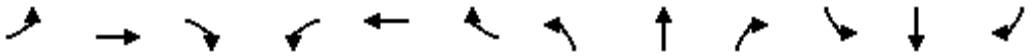
Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	2	52	1042	23	1190
Volume Left	2	11	2	23	0
Volume Right	0	40	32	0	1
cSH	142	244	587	661	1700
Volume to Capacity	0.01	0.21	0.00	0.03	0.70
Queue Length 95th (ft)	1	20	0	3	0
Control Delay (s)	30.7	23.7	0.1	10.6	0.0
Lane LOS	D	C	A	B	
Approach Delay (s)	30.7	23.7	0.1	0.2	
Approach LOS	D	C			

Intersection Summary				
Average Delay	0.7			
Intersection Capacity Utilization	70.4%	ICU Level of Service	C	
Analysis Period (min)	15			



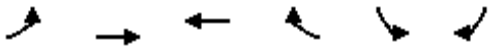
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	195	138	26	855	1106	58
Future Volume (vph)	195	138	26	855	1106	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	1.00		1.00	1.00	1.00	
Frt	0.94		1.00	1.00	0.99	
Flt Protected	0.97		0.95	1.00	1.00	
Satd. Flow (prot)	1709		1770	1863	1833	
Flt Permitted	0.97		0.06	1.00	1.00	
Satd. Flow (perm)	1709		111	1863	1833	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	212	150	28	929	1202	63
RTOR Reduction (vph)	27	0	0	0	2	0
Lane Group Flow (vph)	335	0	28	929	1263	0
Heavy Vehicles (%)	2%	2%	2%	2%	3%	2%
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Actuated Green, G (s)	19.6		67.4	67.4	67.4	
Effective Green, g (s)	19.6		67.4	67.4	67.4	
Actuated g/C Ratio	0.21		0.71	0.71	0.71	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	352		78	1321	1300	
v/s Ratio Prot	c0.20			0.50	c0.69	
v/s Ratio Perm			0.25			
v/c Ratio	0.95		0.36	0.70	0.97	
Uniform Delay, d1	37.2		5.4	8.0	12.9	
Progression Factor	1.00		0.67	0.71	1.00	
Incremental Delay, d2	35.3		10.9	2.8	19.0	
Delay (s)	72.6		14.5	8.4	31.9	
Level of Service	E		B	A	C	
Approach Delay (s)	72.6			8.6	31.9	
Approach LOS	E			A	C	

Intersection Summary			
HCM 2000 Control Delay	29.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	87.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



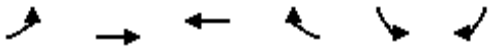
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	146	1	30	1	1	1	9	691	2	4	969	118
Future Volume (vph)	146	1	30	1	1	1	9	691	2	4	969	118
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.98			0.95		1.00	1.00		1.00	0.98	
Flt Protected		0.96			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1748			1750		1770	1862		1752	1815	
Flt Permitted		0.96			1.00		0.09	1.00		0.30	1.00	
Satd. Flow (perm)		1748			1779		167	1862		557	1815	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	155	1	32	1	1	1	10	735	2	4	1031	126
RTOR Reduction (vph)	0	8	0	0	1	0	0	0	0	0	3	0
Lane Group Flow (vph)	0	180	0	0	2	0	10	737	0	4	1154	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	3%	3%	3%
Turn Type	Split	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	4	4			8			2			6	
Permitted Phases				8			2			6		
Actuated Green, G (s)		13.7			1.3		68.0	68.0		68.0	68.0	
Effective Green, g (s)		13.7			1.3		68.0	68.0		68.0	68.0	
Actuated g/C Ratio		0.14			0.01		0.72	0.72		0.72	0.72	
Clearance Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		252			24		119	1332		398	1299	
v/s Ratio Prot		c0.10						0.40			c0.64	
v/s Ratio Perm					c0.00		0.06			0.01		
v/c Ratio		0.72			0.08		0.08	0.55		0.01	0.89	
Uniform Delay, d1		38.8			46.3		4.1	6.4		3.9	10.5	
Progression Factor		1.00			1.00		1.00	1.00		0.45	0.35	
Incremental Delay, d2		9.3			1.5		1.4	1.7		0.0	3.1	
Delay (s)		48.1			47.8		5.5	8.0		1.8	6.8	
Level of Service		D			D		A	A		A	A	
Approach Delay (s)		48.1			47.8			8.0			6.8	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM 2000 Control Delay	11.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	81.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	340	287	322	339	642	432
Future Volume (vph)	340	287	322	339	642	432
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.1	4.1	4.6	4.6	4.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3433	1863	1863	1583	1770	1553
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3433	1863	1863	1583	1770	1553
Peak-hour factor, PHF	0.94	0.94	0.92	0.92	0.92	0.92
Adj. Flow (vph)	362	305	350	368	698	470
RTOR Reduction (vph)	0	0	0	9	0	81
Lane Group Flow (vph)	362	305	350	359	698	389
Heavy Vehicles (%)	2%	2%	2%	2%	2%	4%
Turn Type	Prot	NA	NA	pm+ov	Prot	pm+ov
Protected Phases	5	2	6	7	7	5
Permitted Phases				6		4
Actuated Green, G (s)	11.9	35.3	19.4	54.7	35.3	47.2
Effective Green, g (s)	11.9	35.3	19.4	54.7	35.3	47.2
Actuated g/C Ratio	0.15	0.45	0.24	0.69	0.45	0.60
Clearance Time (s)	4.0	4.1	4.1	4.6	4.6	4.0
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	515	829	455	1091	787	924
v/s Ratio Prot	c0.11	0.16	c0.19	0.15	c0.39	0.06
v/s Ratio Perm				0.08		0.19
v/c Ratio	0.70	0.37	0.77	0.33	0.89	0.42
Uniform Delay, d1	32.0	14.6	27.9	4.9	20.2	8.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.5	0.1	6.9	0.1	11.5	0.1
Delay (s)	35.6	14.7	34.8	5.0	31.6	8.8
Level of Service	D	B	C	A	C	A
Approach Delay (s)		26.0	19.5		22.4	
Approach LOS		C	B		C	

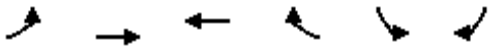
Intersection Summary			
HCM 2000 Control Delay	22.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	79.3	Sum of lost time (s)	12.7
Intersection Capacity Utilization	72.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	17	680	729	29	24	53
Future Volume (Veh/h)	17	680	729	29	24	53
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	18	739	792	32	26	58
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	TWLTL			
Median storage veh)			2			
Upstream signal (ft)			750			
pX, platoon unblocked	0.83				0.83	0.83
vC, conflicting volume	824				1567	792
vC1, stage 1 conf vol					792	
vC2, stage 2 conf vol					775	
vCu, unblocked vol	689				1580	651
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)					5.4	
tF (s)	2.2				3.5	3.3
p0 queue free %	98				92	85
cM capacity (veh/h)	755				317	391

Direction, Lane #	EB 1	WB 1	WB 2	SB 1
Volume Total	757	792	32	84
Volume Left	18	0	0	26
Volume Right	0	0	32	58
cSH	755	1700	1700	364
Volume to Capacity	0.02	0.47	0.02	0.23
Queue Length 95th (ft)	2	0	0	22
Control Delay (s)	0.6	0.0	0.0	17.8
Lane LOS	A			C
Approach Delay (s)	0.6	0.0		17.8
Approach LOS				C

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	60.7%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	84	562	463	38	30	159
Future Volume (vph)	84	562	463	38	30	159
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	
Lane Util. Factor	0.95	0.95	1.00		1.00	
Frt	1.00	1.00	0.99		0.89	
Flt Protected	0.95	1.00	1.00		0.99	
Satd. Flow (prot)	1681	1768	1844		1638	
Flt Permitted	0.29	0.99	1.00		0.99	
Satd. Flow (perm)	516	1756	1844		1638	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	90	604	498	41	32	171
RTOR Reduction (vph)	0	0	5	0	97	0
Lane Group Flow (vph)	81	613	534	0	106	0
Turn Type	Perm	NA	NA		Prot	
Protected Phases		4	8		6	
Permitted Phases	4					
Actuated Green, G (s)	45.9	45.9	45.9		41.1	
Effective Green, g (s)	45.9	45.9	45.9		41.1	
Actuated g/C Ratio	0.48	0.48	0.48		0.43	
Clearance Time (s)	4.0	4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	249	848	890		708	
v/s Ratio Prot			0.29		c0.06	
v/s Ratio Perm	0.16	c0.35				
v/c Ratio	0.33	0.72	0.60		0.15	
Uniform Delay, d1	15.1	19.5	17.9		16.3	
Progression Factor	0.79	0.79	1.00		1.00	
Incremental Delay, d2	0.6	2.3	1.1		0.4	
Delay (s)	12.5	17.6	19.0		16.8	
Level of Service	B	B	B		B	
Approach Delay (s)		17.0	19.0		16.8	
Approach LOS		B	B		B	

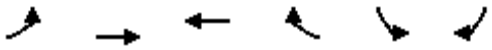
Intersection Summary			
HCM 2000 Control Delay	17.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	68.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	408	338	250	387	135	230
Future Volume (vph)	408	338	250	387	135	230
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	1.00		1.00	1.00	1.00	
Frt	0.94		1.00	1.00	0.91	
Flt Protected	1.00		0.95	1.00	0.98	
Satd. Flow (prot)	1749		1770	1863	1673	
Flt Permitted	1.00		0.22	1.00	0.98	
Satd. Flow (perm)	1749		405	1863	1673	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	434	360	266	412	144	245
RTOR Reduction (vph)	35	0	0	0	61	0
Lane Group Flow (vph)	759	0	266	412	328	0
Turn Type	NA		Perm	NA	Prot	
Protected Phases	4			8	2	
Permitted Phases			8			
Actuated Green, G (s)	59.4		59.4	59.4	27.6	
Effective Green, g (s)	59.4		59.4	59.4	27.6	
Actuated g/C Ratio	0.63		0.63	0.63	0.29	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	1093		253	1164	486	
v/s Ratio Prot	0.43			0.22	c0.20	
v/s Ratio Perm			c0.66			
v/c Ratio	0.69		1.05	0.35	0.67	
Uniform Delay, d1	11.8		17.8	8.6	29.7	
Progression Factor	1.00		0.62	0.41	1.00	
Incremental Delay, d2	1.9		69.0	0.2	7.3	
Delay (s)	13.7		80.1	3.7	37.1	
Level of Service	B		F	A	D	
Approach Delay (s)	13.7			33.7	37.1	
Approach LOS	B			C	D	

Intersection Summary			
HCM 2000 Control Delay	25.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	87.6%	ICU Level of Service	E
Analysis Period (min)	15		

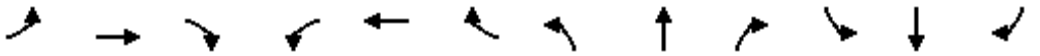
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	9	812	658	45	9	16
Future Volume (Veh/h)	9	812	658	45	9	16
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	10	883	715	49	10	17
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	764				1642	740
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	764				1642	740
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				91	96
cM capacity (veh/h)	849				109	417

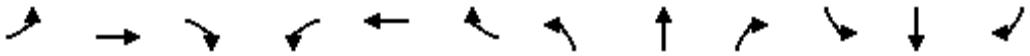
Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	893	764	27
Volume Left	10	0	10
Volume Right	0	49	17
cSH	849	1700	203
Volume to Capacity	0.01	0.45	0.13
Queue Length 95th (ft)	1	0	11
Control Delay (s)	0.3	0.0	25.4
Lane LOS	A		D
Approach Delay (s)	0.3	0.0	25.4
Approach LOS			D

Intersection Summary			
Average Delay		0.6	
Intersection Capacity Utilization		59.9%	ICU Level of Service B
Analysis Period (min)		15	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	394	40	40	294	435	25	129	31	783	162	105
Future Volume (vph)	105	394	40	40	294	435	25	129	31	783	162	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.6		3.0	4.6	4.6	3.0	4.6		3.5	4.6	
Lane Util. Factor	1.00	0.95		1.00	1.00	0.88	1.00	1.00		0.97	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.97		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3490		1770	1863	2787	1770	1808		3433	1738	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3490		1770	1863	2787	1770	1808		3433	1738	
Peak-hour factor, PHF	0.98	0.98	0.98	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	107	402	41	43	320	473	27	140	34	851	176	114
RTOR Reduction (vph)	0	7	0	0	0	0	0	11	0	0	28	0
Lane Group Flow (vph)	107	436	0	43	320	473	27	163	0	851	262	0
Confl. Peds. (#/hr)												1
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						6						
Actuated Green, G (s)	10.8	37.3		4.9	31.4	31.4	3.7	14.9		22.2	33.9	
Effective Green, g (s)	10.8	37.3		4.9	31.4	31.4	3.7	14.9		22.2	33.9	
Actuated g/C Ratio	0.11	0.39		0.05	0.33	0.33	0.04	0.16		0.23	0.36	
Clearance Time (s)	3.0	4.6		3.0	4.6	4.6	3.0	4.6		3.5	4.6	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		3.0	2.0	
Lane Grp Cap (vph)	201	1370		91	615	921	68	283		802	620	
v/s Ratio Prot	c0.06	0.12		0.02	c0.17		0.02	c0.09		c0.25	0.15	
v/s Ratio Perm						0.17						
v/c Ratio	0.53	0.32		0.47	0.52	0.51	0.40	0.58		1.06	0.42	
Uniform Delay, d1	39.7	20.0		43.8	25.7	25.6	44.6	37.1		36.4	23.1	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		0.88	0.80	
Incremental Delay, d2	1.4	0.6		1.4	3.1	2.0	1.4	1.8		44.9	0.1	
Delay (s)	41.1	20.6		45.2	28.8	27.7	45.9	38.9		77.0	18.7	
Level of Service	D	C		D	C	C	D	D		E	B	
Approach Delay (s)		24.6			29.0			39.8			62.2	
Approach LOS		C			C			D			E	

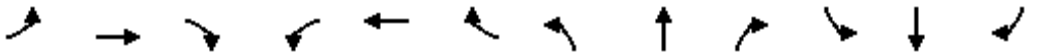
Intersection Summary			
HCM 2000 Control Delay	42.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	15.7
Intersection Capacity Utilization	66.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	101	0	0	204	40	517	99	245	1092	32
Future Volume (Veh/h)	0	0	101	0	0	204	40	517	99	245	1092	32
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	110	0	0	222	43	562	108	266	1187	35
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											571	
pX, platoon unblocked												
vC, conflicting volume	2326	2492	611	1938	2456	335	1222			670		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2326	2492	611	1938	2456	335	1222			670		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	75	100	100	66	92			71		
cM capacity (veh/h)	10	19	437	22	20	661	566			916		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	110	222	43	375	295	266	791	431
Volume Left	0	0	43	0	0	266	0	0
Volume Right	110	222	0	0	108	0	0	35
cSH	437	661	566	1700	1700	916	1700	1700
Volume to Capacity	0.25	0.34	0.08	0.22	0.17	0.29	0.47	0.25
Queue Length 95th (ft)	25	37	6	0	0	30	0	0
Control Delay (s)	16.0	13.2	11.9	0.0	0.0	10.5	0.0	0.0
Lane LOS	C	B	B			B		
Approach Delay (s)	16.0	13.2	0.7			1.9		
Approach LOS	C	B						

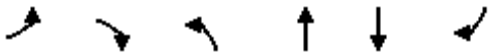
Intersection Summary				
Average Delay	3.2			
Intersection Capacity Utilization	44.1%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	206	54	1000	47	67	38	616	259	27	23	339	94
Future Volume (vph)	206	54	1000	47	67	38	616	259	27	23	339	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0		5.0	5.0	5.0	5.0		5.0	5.0	5.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00	0.97	1.00		1.00	1.00	1.00
Frt	1.00	0.87	0.85		1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		0.98	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1531	1504		1825	1583	3433	1837		1770	1863	1583
Flt Permitted	0.95	1.00	1.00		0.98	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	1531	1504		1825	1583	3433	1837		1770	1863	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)	224	59	1087	51	73	41	670	282	29	25	368	102
RTOR Reduction (vph)	0	352	132	0	0	37	0	4	0	0	0	75
Lane Group Flow (vph)	224	229	433	0	124	4	670	307	0	25	368	27
Turn Type	Split	NA	pt+ov	Split	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	4	4	4 5	8	8		5	2		1	6	
Permitted Phases						8						6
Actuated Green, G (s)	20.5	20.5	41.1		8.9	8.9	20.6	43.6		2.0	25.0	25.0
Effective Green, g (s)	20.5	20.5	41.1		8.9	8.9	20.6	43.6		2.0	25.0	25.0
Actuated g/C Ratio	0.22	0.22	0.43		0.09	0.09	0.22	0.46		0.02	0.26	0.26
Clearance Time (s)	5.0	5.0			5.0	5.0	5.0	5.0		5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	381	330	650		170	148	744	843		37	490	416
v/s Ratio Prot	0.13	c0.15	0.29		c0.07		c0.20	0.17		0.01	c0.20	
v/s Ratio Perm						0.00						0.02
v/c Ratio	0.59	0.69	0.67		0.73	0.03	0.90	0.36		0.68	0.75	0.06
Uniform Delay, d1	33.5	34.4	21.5		41.9	39.1	36.2	16.7		46.2	32.1	26.2
Progression Factor	1.00	1.00	1.00		1.00	1.00	0.79	0.73		1.00	1.00	1.00
Incremental Delay, d2	2.3	6.2	2.6		14.5	0.1	13.8	1.2		39.3	10.2	0.3
Delay (s)	35.8	40.5	24.1		56.4	39.2	42.3	13.4		85.5	42.3	26.5
Level of Service	D	D	C		E	D	D	B		F	D	C
Approach Delay (s)		33.0			52.1			33.1			41.2	
Approach LOS		C			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	35.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	81.6%	ICU Level of Service	D
Analysis Period (min)	15		

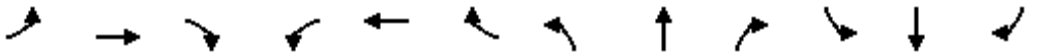
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	145	0	7	493	446	98
Future Volume (Veh/h)	145	0	7	493	446	98
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.96	0.96
Hourly flow rate (vph)	158	0	8	536	465	102
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		2				
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				389		
pX, platoon unblocked	0.90					
vC, conflicting volume	1068	516	567			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1021	516	567			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	33	100	99			
cM capacity (veh/h)	234	559	1005			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	158	8	536	567
Volume Left	158	8	0	0
Volume Right	0	0	0	102
cSH	233	1005	1700	1700
Volume to Capacity	0.68	0.01	0.32	0.33
Queue Length 95th (ft)	108	1	0	0
Control Delay (s)	47.8	8.6	0.0	0.0
Lane LOS	E	A		
Approach Delay (s)	47.8	0.1		0.0
Approach LOS	E			

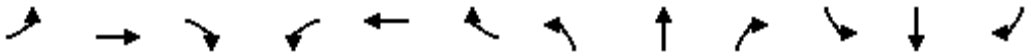
Intersection Summary			
Average Delay	6.0		
Intersection Capacity Utilization	44.1%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	196	0	49	129	394	0	0	192	232
Future Volume (vph)	0	0	0	196	0	49	129	394	0	0	192	232
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
Lane Util. Factor					1.00	1.00	1.00	0.95			1.00	1.00
Frt					1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected					0.95	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)					1770	1583	1770	3539			1863	1583
Flt Permitted					0.95	1.00	0.63	1.00			1.00	1.00
Satd. Flow (perm)					1770	1583	1168	3539			1863	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)	0	0	0	213	0	53	140	428	0	0	209	252
RTOR Reduction (vph)	0	0	0	0	0	27	0	0	0	0	0	66
Lane Group Flow (vph)	0	0	0	0	213	26	140	428	0	0	209	186
Turn Type				Perm	NA	Perm	Perm	NA			NA	Perm
Protected Phases					8			2			6	
Permitted Phases				8		8	2					6
Actuated Green, G (s)					17.0	17.0	70.0	70.0			70.0	70.0
Effective Green, g (s)					17.0	17.0	70.0	70.0			70.0	70.0
Actuated g/C Ratio					0.18	0.18	0.74	0.74			0.74	0.74
Clearance Time (s)					4.0	4.0	4.0	4.0			4.0	4.0
Vehicle Extension (s)					3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)					316	283	860	2607			1372	1166
v/s Ratio Prot								c0.12			0.11	
v/s Ratio Perm					0.12	0.02	0.12					0.12
v/c Ratio					0.67	0.09	0.16	0.16			0.15	0.16
Uniform Delay, d1					36.4	32.6	3.7	3.7			3.7	3.7
Progression Factor					1.00	1.00	0.43	0.44			1.00	1.00
Incremental Delay, d2					5.6	0.1	0.4	0.1			0.2	0.3
Delay (s)					42.0	32.7	2.0	1.8			3.9	4.0
Level of Service					D	C	A	A			A	A
Approach Delay (s)		0.0			40.1			1.8			4.0	
Approach LOS		A			D			A			A	

Intersection Summary			
HCM 2000 Control Delay	10.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.26		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	52.2%	ICU Level of Service	A
Analysis Period (min)	15		

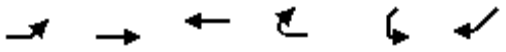
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	277	0	143	0	0	0	0	246	136	53	335	0
Future Volume (vph)	277	0	143	0	0	0	0	246	136	53	335	0
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	
Lane Util. Factor		1.00	1.00					0.95	1.00	1.00	1.00	
Frt		1.00	0.85					1.00	0.85	1.00	1.00	
Flt Protected		0.95	1.00					1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1770	1583					3539	1583	1770	1863	
Flt Permitted		0.95	1.00					1.00	1.00	0.59	1.00	
Satd. Flow (perm)		1770	1583					3539	1583	1094	1863	
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)	301	0	155	0	0	0	0	267	148	58	364	0
RTOR Reduction (vph)	0	0	118	0	0	0	0	0	47	0	0	0
Lane Group Flow (vph)	0	301	37	0	0	0	0	267	101	58	364	0
Turn Type	Perm	NA	Perm					NA	Perm	Perm	NA	
Protected Phases		4						2			6	
Permitted Phases	4		4						2	6		
Actuated Green, G (s)		22.4	22.4					64.6	64.6	64.6	64.6	
Effective Green, g (s)		22.4	22.4					64.6	64.6	64.6	64.6	
Actuated g/C Ratio		0.24	0.24					0.68	0.68	0.68	0.68	
Clearance Time (s)		4.0	4.0					4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0					3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		417	373					2406	1076	743	1266	
v/s Ratio Prot								0.08			c0.20	
v/s Ratio Perm		0.17	0.02						0.06	0.05		
v/c Ratio		0.72	0.10					0.11	0.09	0.08	0.29	
Uniform Delay, d1		33.4	28.4					5.3	5.2	5.1	6.0	
Progression Factor		1.00	1.00					1.00	1.00	0.48	0.43	
Incremental Delay, d2		6.1	0.1					0.1	0.2	0.2	0.6	
Delay (s)		39.5	28.5					5.4	5.4	2.7	3.2	
Level of Service		D	C					A	A	A	A	
Approach Delay (s)		35.8			0.0			5.4			3.1	
Approach LOS		D			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	15.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	52.2%	ICU Level of Service	A
Analysis Period (min)	15		

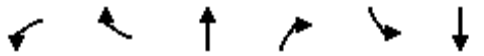
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations			↑↑			↱
Traffic Volume (vph)	0	0	967	0	0	543
Future Volume (vph)	0	0	967	0	0	543
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950
Total Lost time (s)			4.0			10.0
Lane Util. Factor			0.95			1.00
Frt			1.00			0.86
Flt Protected			1.00			1.00
Satd. Flow (prot)			3632			1654
Flt Permitted			1.00			1.00
Satd. Flow (perm)			3632			1654
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	967	0	0	543
RTOR Reduction (vph)	0	0	0	0	0	34
Lane Group Flow (vph)	0	0	967	0	0	509
Turn Type			NA			Prot
Protected Phases			Free!			2!
Permitted Phases						
Actuated Green, G (s)			80.0			35.0
Effective Green, g (s)			80.0			35.0
Actuated g/C Ratio			1.00			0.44
Clearance Time (s)						10.0
Vehicle Extension (s)						3.0
Lane Grp Cap (vph)			3632			723
v/s Ratio Prot			0.27			c0.31
v/s Ratio Perm						
v/c Ratio			0.27			0.70
Uniform Delay, d1			0.0			18.3
Progression Factor			1.00			1.00
Incremental Delay, d2			0.1			5.7
Delay (s)			0.1			24.0
Level of Service			A			C
Approach Delay (s)		0.0	0.1		24.0	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	8.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	81.6%	ICU Level of Service	D
Analysis Period (min)	15		

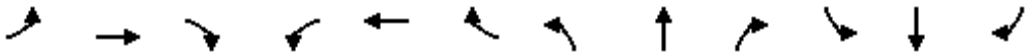
! Phase conflict between lane groups.
c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			↑↑	↱		↑↑
Traffic Volume (veh/h)	0	0	1165	473	0	1966
Future Volume (Veh/h)	0	0	1165	473	0	1966
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	0	1226	498	0	2069
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2260	613			1724	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2260	613			1724	
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)	35	435			363	

Direction, Lane #	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	613	613	498	1034	1034
Volume Left	0	0	0	0	0
Volume Right	0	0	498	0	0
cSH	1700	1700	1700	1700	1700
Volume to Capacity	0.36	0.36	0.29	0.61	0.61
Queue Length 95th (ft)	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0
Lane LOS					
Approach Delay (s)	0.0			0.0	
Approach LOS					

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	57.7%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	18	0	0	71	0	1061	30	0	1501	36
Future Volume (Veh/h)	0	0	18	0	0	71	0	1061	30	0	1501	36
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	20	0	0	77	0	1153	33	0	1632	39
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								563			571	
pX, platoon unblocked	0.79	0.79	0.66	0.79	0.79	0.73	0.66			0.73		
vC, conflicting volume	2305	2838	564	1734	2840	593	1671			1186		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0	612	0	0	616	0	192			517		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	97	100	100	90	100			100		
cM capacity (veh/h)	731	322	712	787	320	792	905			763		

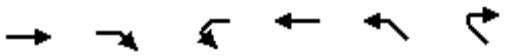
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	20	77	769	417	653	653	365
Volume Left	0	0	0	0	0	0	0
Volume Right	20	77	0	33	0	0	39
cSH	712	792	1700	1700	1700	1700	1700
Volume to Capacity	0.03	0.10	0.45	0.25	0.38	0.38	0.21
Queue Length 95th (ft)	2	8	0	0	0	0	0
Control Delay (s)	10.2	10.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B	B					
Approach Delay (s)	10.2	10.0	0.0		0.0		
Approach LOS	B	B					

Intersection Summary				
Average Delay	0.3			
Intersection Capacity Utilization	41.3%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	967	0	0	1444	0	0	0	0
Future Volume (vph)	0	0	0	0	967	0	0	1444	0	0	0	0
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)					10.0			10.0				
Lane Util. Factor					0.95			0.95				
Frt					1.00			1.00				
Flt Protected					1.00			1.00				
Satd. Flow (prot)					3632			3632				
Flt Permitted					1.00			1.00				
Satd. Flow (perm)					3632			3632				
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)	0	0	0	0	967	0	0	1444	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	967	0	0	1444	0	0	0	0
Turn Type					NA			NA				
Protected Phases					4			2				
Permitted Phases												
Actuated Green, G (s)					25.0			35.0				
Effective Green, g (s)					25.0			35.0				
Actuated g/C Ratio					0.31			0.44				
Clearance Time (s)					10.0			10.0				
Vehicle Extension (s)					3.0			3.0				
Lane Grp Cap (vph)					1135			1589				
v/s Ratio Prot					c0.27			c0.40				
v/s Ratio Perm												
v/c Ratio					0.85			0.91				
Uniform Delay, d1					25.8			21.0				
Progression Factor					1.00			0.81				
Incremental Delay, d2					8.1			5.9				
Delay (s)					33.9			22.9				
Level of Service					C			C				
Approach Delay (s)		0.0			33.9			22.9			0.0	
Approach LOS		A			C			C			A	

Intersection Summary			
HCM 2000 Control Delay	27.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	81.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations				↑↑↑	↰	
Traffic Volume (vph)	0	0	0	1389	201	0
Future Volume (vph)	0	0	0	1389	201	0
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950
Total Lost time (s)				4.0	10.0	
Lane Util. Factor				0.91	1.00	
Frt				1.00	1.00	
Flt Protected				1.00	0.95	
Satd. Flow (prot)				5219	1816	
Flt Permitted				1.00	0.95	
Satd. Flow (perm)				5219	1816	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	1389	201	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	1389	201	0
Turn Type				NA	Prot	
Protected Phases				Free!	4!	
Permitted Phases						
Actuated Green, G (s)				92.5	33.4	
Effective Green, g (s)				92.5	33.4	
Actuated g/C Ratio				1.00	0.36	
Clearance Time (s)					10.0	
Vehicle Extension (s)					3.0	
Lane Grp Cap (vph)				5219	655	
v/s Ratio Prot				0.27	0.11	
v/s Ratio Perm						
v/c Ratio				0.27	0.31	
Uniform Delay, d1				0.0	21.2	
Progression Factor				1.00	1.00	
Incremental Delay, d2				0.1	0.3	
Delay (s)				0.1	21.5	
Level of Service				A	C	
Approach Delay (s)	0.0			0.1	21.5	
Approach LOS	A			A	C	

Intersection Summary			
HCM 2000 Control Delay	2.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	92.5	Sum of lost time (s)	20.0
Intersection Capacity Utilization	48.7%	ICU Level of Service	A
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	1505	0	0	0	0	800
Future Volume (vph)	1505	0	0	0	0	800
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950
Total Lost time (s)	4.0					10.0
Lane Util. Factor	0.91					0.88
Frt	1.00					0.85
Flt Protected	1.00					1.00
Satd. Flow (prot)	5219					2860
Flt Permitted	1.00					1.00
Satd. Flow (perm)	5219					2860
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1505	0	0	0	0	800
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1505	0	0	0	0	800
Turn Type	NA					Prot
Protected Phases	Free!					2!
Permitted Phases						
Actuated Green, G (s)	92.5					39.1
Effective Green, g (s)	92.5					39.1
Actuated g/C Ratio	1.00					0.42
Clearance Time (s)						10.0
Vehicle Extension (s)						3.0
Lane Grp Cap (vph)	5219					1208
v/s Ratio Prot	0.29					c0.28
v/s Ratio Perm						
v/c Ratio	0.29					0.66
Uniform Delay, d1	0.0					21.4
Progression Factor	1.00					1.00
Incremental Delay, d2	0.1					2.9
Delay (s)	0.1					24.3
Level of Service	A					C
Approach Delay (s)	0.1			0.0	24.3	
Approach LOS	A			A	C	

Intersection Summary			
HCM 2000 Control Delay	8.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	92.5	Sum of lost time (s)	20.0
Intersection Capacity Utilization	71.1%	ICU Level of Service	C
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↑↑↑									↑↑↑	
Traffic Volume (vph)	0	1505	0	0	0	0	0	0	0	0	1389	0
Future Volume (vph)	0	1505	0	0	0	0	0	0	0	0	1389	0
Ideal Flow (vphpl)	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950	1950
Total Lost time (s)		10.0									10.0	
Lane Util. Factor		0.91									0.91	
Frt		1.00									1.00	
Flt Protected		1.00									1.00	
Satd. Flow (prot)		5219									5219	
Flt Permitted		1.00									1.00	
Satd. Flow (perm)		5219									5219	
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)	0	1505	0	0	0	0	0	0	0	0	1389	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1505	0	0	0	0	0	0	0	0	1389	0
Turn Type		NA									NA	
Protected Phases		4									2	
Permitted Phases												
Actuated Green, G (s)		33.4									39.1	
Effective Green, g (s)		33.4									39.1	
Actuated g/C Ratio		0.36									0.42	
Clearance Time (s)		10.0									10.0	
Vehicle Extension (s)		3.0									3.0	
Lane Grp Cap (vph)		1884									2206	
v/s Ratio Prot		c0.29									c0.27	
v/s Ratio Perm												
v/c Ratio		0.80									0.63	
Uniform Delay, d1		26.5									21.0	
Progression Factor		1.00									1.00	
Incremental Delay, d2		2.5									1.4	
Delay (s)		29.0									22.4	
Level of Service		C									C	
Approach Delay (s)		29.0			0.0			0.0			22.4	
Approach LOS		C			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	25.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	92.5	Sum of lost time (s)	20.0
Intersection Capacity Utilization	71.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

APPENDIX B: 2035 AND 2040 TRAFFIC FORECAST SIMULATION FINDINGS

3: Missouri Flat Rd & Plaza Dr Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.4	0.4	0.2	0.3	0.2	0.3	0.0	0.0	0.0	3.2	1.7	3.2
Total Del/Veh (s)	104.1	104.8	51.7	32.0	32.0	20.8	42.7	14.7	5.0	62.8	39.1	23.2

3: Missouri Flat Rd & Plaza Dr Performance by movement

Movement	All
Denied Del/Veh (s)	0.6
Total Del/Veh (s)	33.2

4: Missouri Flat Rd & US 50 WB Ramps Performance by movement

Movement	WBL	WBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.7	1.1	0.0	0.0	0.0	0.0	0.3
Total Del/Veh (s)	50.1	17.6	25.3	6.1	23.7	4.1	22.5

5: Missouri Flat Rd & US 50 EB Ramps Performance by movement

Movement	EBL	EBT	EBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	783.2	644.0	769.4	0.0	0.0	0.0	0.0	176.8
Total Del/Veh (s)	149.3	371.8	331.0	21.3	7.0	23.5	10.6	59.5

6: Missouri Flat Rd & Mother Lode Dr Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	14.0	9.2	0.0	0.0	0.0	0.0	1.0
Total Del/Veh (s)	109.5	20.9	57.8	18.3	14.7	1.8	21.7

33: Missouri Flat Rd Performance by movement

Movement	NBT	NBR	SBT	All
Denied Del/Veh (s)	3.6	3.6	0.0	1.8
Total Del/Veh (s)	98.9	15.0	3.2	40.6

Total Zone Performance

Denied Del/Veh (s)	126.2
Total Del/Veh (s)	326.3

3: Missouri Flat Rd & Plaza Dr Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	1.8	1.6	1.6	0.3	0.2	0.2	0.0	0.0	0.0	3.5	2.1	3.5
Total Del/Veh (s)	130.8	135.4	61.4	30.9	32.3	20.1	42.5	15.8	4.8	78.0	54.7	37.8

3: Missouri Flat Rd & Plaza Dr Performance by movement

Movement	All
Denied Del/Veh (s)	1.0
Total Del/Veh (s)	40.4

4: Missouri Flat Rd & US 50 WB Ramps Performance by movement

Movement	WBL	WBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.7	1.1	0.0	0.0	0.0	0.0	0.2
Total Del/Veh (s)	50.9	20.4	26.2	6.4	30.4	4.8	25.4

5: Missouri Flat Rd & US 50 EB Ramps Performance by movement

Movement	EBL	EBT	EBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	793.1	869.7	791.3	0.0	0.0	0.0	0.0	191.3
Total Del/Veh (s)	127.1	275.9	275.7	23.5	8.1	28.3	10.5	57.5

6: Missouri Flat Rd & Mother Lode Dr Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	3.8	0.6	0.0	0.0	0.0	0.0	0.2
Total Del/Veh (s)	30.0	20.5	80.2	34.5	11.8	1.7	21.6

33: Missouri Flat Rd Performance by movement

Movement	NBT	NBR	SBT	All
Denied Del/Veh (s)	98.0	97.6	0.0	50.2
Total Del/Veh (s)	170.8	45.6	2.8	70.9

Total Zone Performance

Denied Del/Veh (s)	162.4
Total Del/Veh (s)	377.3

1: Performance by movement

Movement	NBT	NWR	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	1.1	5.4	2.8

3: Missouri Flat Rd & Plaza Dr Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.4	0.4	0.2	0.3	0.3	0.3	0.0	0.0	0.0	3.2	1.7	3.1
Total Del/Veh (s)	80.1	86.9	42.3	32.0	29.9	18.5	44.9	22.2	8.3	68.2	52.7	32.8

3: Missouri Flat Rd & Plaza Dr Performance by movement

Movement	All
Denied Del/Veh (s)	0.6
Total Del/Veh (s)	36.4

4: Missouri Flat Rd & US 50 WB Ramps Performance by movement

Movement	WBL	WBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.7	1.1	0.0	0.0	0.0	0.0	0.2
Total Del/Veh (s)	50.6	13.4	26.4	15.0	36.2	4.8	27.9

5: Missouri Flat Rd & US 50 EB Ramps Performance by movement

Movement	EBL	EBT	EBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	2.3	2.0	3.5	0.0	0.0	0.0	0.0	0.7
Total Del/Veh (s)	35.7	38.1	45.7	16.3	4.2	56.5	15.1	26.6

6: Missouri Flat Rd & Mother Lode Dr Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	3.7	0.6	0.0	0.0	0.0	0.0	0.2
Total Del/Veh (s)	65.4	21.8	55.3	9.4	6.8	1.6	11.6

33: Missouri Flat Rd Performance by movement

Movement	NBT	NBR	SBT	All
Denied Del/Veh (s)	0.6	0.7	0.0	0.3
Total Del/Veh (s)	7.7	4.0	2.2	4.3

Total Network Performance

Denied Del/Veh (s)	1.3
Total Del/Veh (s)	68.7

1: Performance by movement

Movement	NBT	NWR	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	1.1	6.3	3.2

3: Missouri Flat Rd & Plaza Dr Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.7	0.8	0.5	0.3	0.3	0.3	0.0	0.0	0.0	86.9	78.2	79.3
Total Del/Veh (s)	127.3	131.1	60.5	33.3	32.7	22.2	49.9	15.7	5.7	154.0	139.4	119.9

3: Missouri Flat Rd & Plaza Dr Performance by movement

Movement	All
Denied Del/Veh (s)	21.7
Total Del/Veh (s)	62.3

4: Missouri Flat Rd & US 50 WB Ramps Performance by movement

Movement	WBL	WBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.7	1.1	0.0	0.0	0.0	0.0	0.2
Total Del/Veh (s)	57.4	18.1	28.2	15.9	54.5	6.5	35.4

5: Missouri Flat Rd & US 50 EB Ramps Performance by movement

Movement	EBL	EBT	EBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	44.8	35.1	45.0	0.0	0.0	0.0	0.0	10.3
Total Del/Veh (s)	48.6	45.2	136.8	20.2	11.7	56.0	22.4	47.1

6: Missouri Flat Rd & Mother Lode Dr Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	3.7	0.7	0.0	0.0	0.0	0.0	0.2
Total Del/Veh (s)	33.5	23.6	74.0	25.5	10.0	1.8	17.5

33: Missouri Flat Rd Performance by movement

Movement	NBT	NBR	SBT	All
Denied Del/Veh (s)	1.1	1.2	0.0	0.5
Total Del/Veh (s)	43.8	7.6	2.9	18.4

Total Network Performance

Denied Del/Veh (s)	19.9
Total Del/Veh (s)	113.8

3: Missouri Flat Rd & Plaza Dr Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.3	0.4	0.2	0.3	0.3	0.2	0.0	0.0	0.0	3.0	1.7	3.1
Total Del/Veh (s)	102.6	95.7	50.1	31.5	30.1	20.5	40.0	13.7	4.9	57.0	37.1	18.7

3: Missouri Flat Rd & Plaza Dr Performance by movement

Movement	All
Denied Del/Veh (s)	0.6
Total Del/Veh (s)	31.4

4: Missouri Flat Rd & US 50 WB Ramps Performance by movement

Movement	WBL	WBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.7	1.1	0.0	0.0	0.0	0.0	0.2
Total Del/Veh (s)	52.3	16.6	30.1	9.6	21.5	4.0	23.0

5: Missouri Flat Rd & US 50 EB Ramps Performance by movement

Movement	EBL	EBT	EBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	1.8	1.5	1.6	0.0	0.0	0.0	0.0	0.3
Total Del/Veh (s)	46.4	60.4	50.3	66.6	11.5	28.3	6.6	34.2

6: Missouri Flat Rd & Mother Lode Dr Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	3.8	0.5	2.6	2.0	0.0	0.0	1.1
Total Del/Veh (s)	37.0	19.0	149.0	66.0	11.2	7.7	37.3

Total Network Performance

Denied Del/Veh (s)	1.5
Total Del/Veh (s)	87.1

3: Missouri Flat Rd & Plaza Dr Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.9	1.4	0.9	0.2	0.3	0.3	0.0	0.0	0.0	13.9	11.6	11.1
Total Del/Veh (s)	116.3	119.2	57.9	35.8	33.9	22.3	58.3	26.0	8.0	100.8	90.9	69.1

3: Missouri Flat Rd & Plaza Dr Performance by movement

Movement	All
Denied Del/Veh (s)	3.4
Total Del/Veh (s)	52.9

4: Missouri Flat Rd & US 50 WB Ramps Performance by movement

Movement	WBL	WBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.7	1.1	0.0	0.0	0.0	0.0	0.2
Total Del/Veh (s)	49.3	17.4	40.5	16.4	43.1	5.5	32.5

5: Missouri Flat Rd & US 50 EB Ramps Performance by movement

Movement	EBL	EBT	EBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	2.0	2.1	1.8	0.0	0.0	0.0	0.0	0.4
Total Del/Veh (s)	65.9	111.8	52.6	46.7	12.0	60.3	15.8	36.7

6: Missouri Flat Rd & Mother Lode Dr Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	3.7	0.6	4.2	4.0	0.0	0.0	1.9
Total Del/Veh (s)	63.2	31.7	223.8	37.9	17.8	13.0	31.9

Total Network Performance

Denied Del/Veh (s)	3.6
Total Del/Veh (s)	103.1

APPENDIX C: 2040 INTERCHANGE ALTERNATIVES SIMULATION FINDINGS

2040 Original Signal Timing

Average of Ten 1-Hour Simulations for the PM Peak Hour

3: Missouri Flat Rd & Plaza Dr Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	1.8	1.6	1.6	0.3	0.2	0.2	0.0	0.0	0.0	3.5	2.1	3.5
Total Del/Veh (s)	130.8	135.4	61.4	30.9	32.3	20.1	42.5	15.8	4.8	78.0	54.7	37.8

3: Missouri Flat Rd & Plaza Dr Performance by movement

Movement	All
Denied Del/Veh (s)	1.0
Total Del/Veh (s)	40.4

4: Missouri Flat Rd & US 50 WB Ramps Performance by movement

Movement	WBL	WBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.7	1.1	0.0	0.0	0.0	0.0	0.2
Total Del/Veh (s)	50.9	20.4	26.2	6.4	30.4	4.8	25.4

5: Missouri Flat Rd & US 50 EB Ramps Performance by movement

Movement	EBL	EBT	EBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	793.1	869.7	791.3	0.0	0.0	0.0	0.0	191.3
Total Del/Veh (s)	127.1	275.9	275.7	23.5	8.1	28.3	10.5	57.5

6: Missouri Flat Rd & Mother Lode Dr Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	3.8	0.6	0.0	0.0	0.0	0.0	0.2
Total Del/Veh (s)	30.0	20.5	80.2	34.5	11.8	1.7	21.6

33: Missouri Flat Rd Performance by movement

Movement	NBT	NBR	SBT	All
Denied Del/Veh (s)	98.0	97.6	0.0	50.2
Total Del/Veh (s)	170.8	45.6	2.8	70.9

Total Zone Performance

Denied Del/Veh (s)	162.4
Total Del/Veh (s)	377.3

Intersection: 3: Missouri Flat Rd & Plaza Dr

Phase	1	2	5	6	7	8
Movement(s) Served	NBL	SBT	SBL	NBT	EBTL	WBTL
Maximum Green (s)	10.7	23.3	6.5	27.5	13.1	28.0
Minimum Green (s)	4.0	8.0	4.0	8.0	4.0	8.0
Recall	None	C-Max	None	C-Max	None	None
Avg. Green (s)	10.7	28.6	7.1	33.7	13.1	23.3
g/C Ratio	NA	NA	-0.01	NA	NA	NA
Cycles Skipped (%)	0	0	24	0	0	0
Cycles @ Minimum (%)	0	0	0	0	0	0
Cycles Maxed Out (%)	100	100	22	100	98	33
Cycles with Peds (%)	0	8	0	3	0	10

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 4: Missouri Flat Rd & US 50 WB Ramps

Phase	1	2	4	6
Movement(s) Served	NBL	SBT	WBTL	NBT
Maximum Green (s)	17.0	39.0	19.9	60.0
Minimum Green (s)	4.0	8.0	4.0	8.0
Recall	None	C-Max	None	C-Max
Avg. Green (s)	17.0	39.6	19.3	60.6
g/C Ratio	NA	NA	NA	NA
Cycles Skipped (%)	0	0	0	0
Cycles @ Minimum (%)	0	0	0	0
Cycles Maxed Out (%)	100	100	83	100
Cycles with Peds (%)	0	0	0	0

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 5: Missouri Flat Rd & US 50 EB Ramps

Phase	2	5	6	8
Movement(s) Served	SBT	SBL	NBT	EBTL
Maximum Green (s)	56.1	15.5	37.1	24.9
Minimum Green (s)	8.0	4.0	8.0	4.0
Recall	C-Max	None	C-Max	None
Avg. Green (s)	56.1	15.5	37.1	24.9
g/C Ratio	NA	NA	NA	NA
Cycles Skipped (%)	0	0	0	0
Cycles @ Minimum (%)	0	0	0	0
Cycles Maxed Out (%)	100	100	100	100
Cycles with Peds (%)	3	0	0	0

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 6: Missouri Flat Rd & Mother Lode Dr

Phase	1	2	6	8
Movement(s) Served	NBL	SBT	NBT	EBL
Maximum Green (s)	4.0	43.1	51.1	30.0
Minimum Green (s)	4.0	8.0	8.0	4.0
Recall	None	C-Max	C-Max	None
Avg. Green (s)	4.1	54.7	61.1	22.4
g/C Ratio	-0.01	NA	NA	NA
Cycles Skipped (%)	23	0	0	0
Cycles @ Minimum (%)	77	0	0	0
Cycles Maxed Out (%)	77	100	100	56
Cycles with Peds (%)	0	0	0	54

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

2040 Modified Signal Timing

Average of Ten 1-Hour Simulations for the PM Peak Hour

1: Performance by movement

Movement	NBT	NWR	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	1.1	6.3	3.2

3: Missouri Flat Rd & Plaza Dr Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.7	0.8	0.5	0.3	0.3	0.3	0.0	0.0	0.0	86.9	78.2	79.3
Total Del/Veh (s)	127.3	131.1	60.5	33.3	32.7	22.2	49.9	15.7	5.7	154.0	139.4	119.9

3: Missouri Flat Rd & Plaza Dr Performance by movement

Movement	All
Denied Del/Veh (s)	21.7
Total Del/Veh (s)	62.3

4: Missouri Flat Rd & US 50 WB Ramps Performance by movement

Movement	WBL	WBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.7	1.1	0.0	0.0	0.0	0.0	0.2
Total Del/Veh (s)	57.4	18.1	28.2	15.9	54.5	6.5	35.4

5: Missouri Flat Rd & US 50 EB Ramps Performance by movement

Movement	EBL	EBT	EBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	44.8	35.1	45.0	0.0	0.0	0.0	0.0	10.3
Total Del/Veh (s)	48.6	45.2	136.8	20.2	11.7	56.0	22.4	47.1

6: Missouri Flat Rd & Mother Lode Dr Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	3.7	0.7	0.0	0.0	0.0	0.0	0.2
Total Del/Veh (s)	33.5	23.6	74.0	25.5	10.0	1.8	17.5

33: Missouri Flat Rd Performance by movement

Movement	NBT	NBR	SBT	All
Denied Del/Veh (s)	1.1	1.2	0.0	0.5
Total Del/Veh (s)	43.8	7.6	2.9	18.4

Total Network Performance

Denied Del/Veh (s)	19.9
Total Del/Veh (s)	113.8

Intersection: 3: Missouri Flat Rd & Plaza Dr

Phase	1	2	5	6	7	8
Movement(s) Served	NBL	SBT	SBL	NBT	EBTL	WBTL
Maximum Green (s)	10.3	23.8	6.6	27.5	13.0	28.0
Minimum Green (s)	4.0	8.0	4.0	8.0	4.0	8.0
Recall	None	C-Max	None	C-Max	None	None
Avg. Green (s)	12.0	26.7	6.6	35.5	13.0	23.4
g/C Ratio	-0.01	NA	-0.01	NA	NA	NA
Cycles Skipped (%)	9	0	33	0	0	0
Cycles @ Minimum (%)	0	0	0	0	0	0
Cycles Maxed Out (%)	52	100	67	100	98	38
Cycles with Peds (%)	0	35	0	5	0	10

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 4: Missouri Flat Rd & US 50 WB Ramps

Phase	1	2	4	6
Movement(s) Served	NBL	SBT	WBTL	NBT
Maximum Green (s)	18.0	39.0	18.9	61.0
Minimum Green (s)	4.0	8.0	4.0	8.0
Recall	None	C-Max	None	C-Max
Avg. Green (s)	17.8	39.4	18.7	61.2
g/C Ratio	NA	NA	NA	NA
Cycles Skipped (%)	0	0	0	0
Cycles @ Minimum (%)	0	0	0	0
Cycles Maxed Out (%)	85	100	93	100
Cycles with Peds (%)	0	0	0	3

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 5: Missouri Flat Rd & US 50 EB Ramps

Phase	5	6	8
Movement(s) Served	SBL	NBSB	EBTL
Maximum Green (s)	18.5	44.1	14.9
Minimum Green (s)	4.0	8.0	4.0
Recall	None	C-Max	None
Avg. Green (s)	18.5	44.1	14.9
g/C Ratio	NA	NA	NA
Cycles Skipped (%)	0	0	0
Cycles @ Minimum (%)	0	0	0
Cycles Maxed Out (%)	100	100	100
Cycles with Peds (%)	0	3	0

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 6: Missouri Flat Rd & Mother Lode Dr

Phase	1	2	6	8
Movement(s) Served	NBL	SBT	NBT	EBL
Maximum Green (s)	4.0	43.1	51.1	30.0
Minimum Green (s)	4.0	8.0	8.0	4.0
Recall	None	C-Max	C-Max	None
Avg. Green (s)	4.0	59.3	66.0	17.2
g/C Ratio	-0.01	NA	NA	NA
Cycles Skipped (%)	15	0	0	0
Cycles @ Minimum (%)	85	0	0	0
Cycles Maxed Out (%)	85	100	100	26
Cycles with Peds (%)	0	0	0	21

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

2040 Lane Reconfiguration 1

Average of Ten 1-Hour Simulations for the PM Peak Hour

3: Missouri Flat Rd & Plaza Dr Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	1.6	1.7	1.6	0.3	0.3	0.2	0.0	0.0	0.0	4.2	2.9	4.4
Total Del/Veh (s)	164.0	164.2	75.3	31.9	32.0	20.8	41.9	14.2	5.5	79.3	54.4	33.3

3: Missouri Flat Rd & Plaza Dr Performance by movement

Movement	All
Denied Del/Veh (s)	1.2
Total Del/Veh (s)	42.7

4: Missouri Flat Rd & US 50 WB Ramps Performance by movement

Movement	WBL	WBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.7	1.1	0.0	0.0	0.0	0.0	0.2
Total Del/Veh (s)	54.9	15.1	25.8	5.6	32.3	5.0	25.6

5: Missouri Flat Rd & US 50 EB Ramps Performance by movement

Movement	EBL	EBT	EBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	751.9	713.3	745.7	0.0	0.0	0.0	0.0	175.4
Total Del/Veh (s)	181.3	310.5	274.9	23.8	7.3	29.9	10.9	57.8

6: Missouri Flat Rd & Mother Lode Dr Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	3.7	0.7	0.0	0.0	0.0	0.0	0.2
Total Del/Veh (s)	29.7	20.7	82.4	34.9	11.7	1.7	21.9

33: Missouri Flat Rd Performance by movement

Movement	NBT	NBR	SBT	All
Denied Del/Veh (s)	31.7	31.4	0.0	16.2
Total Del/Veh (s)	143.4	66.0	2.3	64.2

Total Zone Performance

Denied Del/Veh (s)	132.9
Total Del/Veh (s)	375.9

2040 Lane Reconfiguration 2

Average of Ten 1-Hour Simulations for the PM Peak Hour

3: Missouri Flat Rd & Plaza Dr Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	1.0	0.8	0.8	0.2	0.3	0.3	0.0	0.0	0.0	3.6	2.5	3.7
Total Del/Veh (s)	119.9	121.3	59.6	31.5	32.6	21.5	41.8	15.1	4.9	76.9	52.9	34.7

3: Missouri Flat Rd & Plaza Dr Performance by movement

Movement	All
Denied Del/Veh (s)	0.9
Total Del/Veh (s)	38.3

4: Missouri Flat Rd & US 50 WB Ramps Performance by movement

Movement	WBL	WBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.7	1.1	0.0	0.0	0.0	0.0	0.2
Total Del/Veh (s)	55.5	17.9	37.7	4.8	24.7	4.3	25.0

5: Missouri Flat Rd & US 50 EB Ramps Performance by movement

Movement	EBL	EBT	EBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	749.5	842.2	757.1	0.0	0.0	0.0	0.0	173.9
Total Del/Veh (s)	193.1	248.5	271.9	20.5	7.6	26.1	8.9	55.2

6: Missouri Flat Rd & Mother Lode Dr Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	3.7	0.6	0.0	0.0	0.0	0.0	0.2
Total Del/Veh (s)	29.3	19.7	57.6	13.7	11.7	1.7	13.9

33: Missouri Flat Rd Performance by movement

Movement	NBT	NBR	SBT	All
Denied Del/Veh (s)	0.5	0.6	0.0	0.3
Total Del/Veh (s)	5.1	5.0	2.3	3.7

Total Zone Performance

Denied Del/Veh (s)	125.9
Total Del/Veh (s)	265.2

2040 Lane Reconfiguration 3

Average of Ten 1-Hour Simulations for the PM Peak Hour

3: Missouri Flat Rd & Plaza Dr Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	5.5	6.0	6.0	0.3	0.3	0.3	0.0	0.0	0.0	3.6	2.1	3.4
Total Del/Veh (s)	158.3	160.4	68.9	32.0	30.0	21.7	42.3	14.9	4.5	69.9	46.1	30.1

3: Missouri Flat Rd & Plaza Dr Performance by movement

Movement	All
Denied Del/Veh (s)	1.6
Total Del/Veh (s)	39.9

4: Missouri Flat Rd & US 50 WB Ramps Performance by movement

Movement	WBL	WBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.7	1.1	0.0	0.0	0.0	0.0	0.3
Total Del/Veh (s)	49.8	16.3	22.4	6.9	16.1	3.4	19.3

5: Missouri Flat Rd & US 50 EB Ramps Performance by movement

Movement	EBL	EBT	EBR	NBT	NBR	SBL	SBT	All
Denied Del/Veh (s)	35.4	42.8	37.2	0.0	0.0	0.0	0.0	8.8
Total Del/Veh (s)	28.9	27.2	112.8	20.5	10.3	26.6	9.7	35.4

6: Missouri Flat Rd & Mother Lode Dr Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	3.7	0.6	0.0	0.0	0.0	0.0	0.2
Total Del/Veh (s)	28.2	7.6	93.8	39.5	10.4	10.5	21.3

33: Missouri Flat Rd Performance by movement

Movement	NBT	NBR	SBT	All
Denied Del/Veh (s)	255.2	254.1	0.0	121.7
Total Del/Veh (s)	228.8	45.1	1.8	81.1

Total Zone Performance

Denied Del/Veh (s)	82.6
Total Del/Veh (s)	314.1

2040 Single Point Diamond Interchange

Average of Ten 1-Hour Simulations for the PM Peak Hour

2: Missouri Flat Rd & SR 50 EB On-Ramp/SR 50 WB On-Ramp & SR 50 EB Off-Ramp/SR 50 WB Off-Ra

Movement	EBL	EBR2	WBL	WBR2	NBL	NBT	SBL	SBT	All
Denied Del/Veh (s)	5.5	4.8	0.4	0.2	0.0	0.0	0.0	0.0	1.1
Total Del/Veh (s)	53.0	59.0	65.5	5.1	73.1	28.8	48.6	24.9	43.8

3: Missouri Flat Rd & Plaza Dr Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.4	0.5	0.3	0.2	0.3	0.3	0.0	0.0	0.0	3.1	1.9	3.1
Total Del/Veh (s)	78.0	79.3	44.1	44.3	47.2	33.6	53.4	18.5	5.5	87.1	42.8	28.3

3: Missouri Flat Rd & Plaza Dr Performance by movement

Movement	All
Denied Del/Veh (s)	0.7
Total Del/Veh (s)	36.6

6: Missouri Flat Rd & Mother Lode Dr Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	3.8	0.7	0.0	0.0	0.0	0.0	0.2
Total Del/Veh (s)	43.0	29.0	103.0	12.9	12.9	2.4	15.6

9: SR 50 WB On-Ramp Performance by movement

Movement	WBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	1.6	0.6	1.3

11: SR 50 WB On-Ramp & Missouri Flat Rd Performance by movement

Movement	SET	SER	NWT	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	5.3	3.1	9.0	6.9

12: SR 50 EB On-Ramp Performance by movement

Movement	WBR	NBT	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	2.1	1.5	1.8

13: Missouri Flat Rd & SR 50 EB On-Ramp Performance by movement

Movement	SET	NWT	NWR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	14.7	13.5	2.6	12.5

Total Network Performance

Denied Del/Veh (s)	3.5
Total Del/Veh (s)	82.2

Intersection: 2: Missouri Flat Rd & SR 50 EB On-Ramp/SR 50 WB On-Ramp & SR 50 EB Off-Ramp/SR 5

Phase	1	2	3	4	5	6	7	8
Movement(s) Served	SBL	NBT	WBL	EBR	NBL	SBT	EBL	WBR
Maximum Green (s)	23.0	34.5	22.6	14.0	23.0	34.5	23.6	13.0
Minimum Green (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Recall	None	C-Max	None	None	None	C-Max	None	None
Avg. Green (s)	23.0	34.5	22.6	14.0	23.0	34.5	19.2	19.5
g/C Ratio	NA	NA	NA	NA	NA	NA	NA	-0.01
Cycles Skipped (%)	0	0	0	0	0	0	0	3
Cycles @ Minimum (%)	0	0	0	0	0	0	0	0
Cycles Maxed Out (%)	100	100	97	100	100	100	27	97
Cycles with Peds (%)	0	13	0	0	0	13	0	0

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 3: Missouri Flat Rd & Plaza Dr

Phase	1	2	5	6	7	8
Movement(s) Served	NBL	SBT	SBL	NBT	EBTL	WBTL
Maximum Green (s)	14.1	35.6	10.6	39.1	22.1	28.3
Minimum Green (s)	4.0	8.0	4.0	8.0	4.0	8.0
Recall	None	C-Max	None	C-Max	None	None
Avg. Green (s)	14.5	39.5	8.5	46.6	21.2	25.3
g/C Ratio	NA	NA	-0.01	NA	NA	NA
Cycles Skipped (%)	0	0	21	0	0	0
Cycles @ Minimum (%)	0	0	0	0	0	0
Cycles Maxed Out (%)	100	100	12	100	84	45
Cycles with Peds (%)	0	10	0	6	0	6

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 6: Missouri Flat Rd & Mother Lode Dr

Phase	1	2	6	8
Movement(s) Served	NBL	SBT	NBT	EBL
Maximum Green (s)	6.0	66.1	76.1	30.0
Minimum Green (s)	4.0	8.0	8.0	4.0
Recall	None	C-Max	C-Max	None
Avg. Green (s)	6.1	76.5	88.7	21.0
g/C Ratio	-0.01	NA	NA	NA
Cycles Skipped (%)	6	0	0	0
Cycles @ Minimum (%)	0	0	0	0
Cycles Maxed Out (%)	94	100	100	33
Cycles with Peds (%)	0	0	0	30

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

2040 Partial Cloverleaf

Average of Ten 1-Hour Simulations for the PM Peak Hour

3: Missouri Flat Rd & Plaza Dr Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.3	0.3	0.2	0.3	0.5	0.5	0.0	0.0	0.0	3.4	2.6	3.4
Total Del/Veh (s)	58.4	61.4	31.8	44.5	49.6	42.1	56.7	19.8	5.0	70.6	43.0	40.1

3: Missouri Flat Rd & Plaza Dr Performance by movement

Movement	All
Denied Del/Veh (s)	0.8
Total Del/Veh (s)	35.3

4: Missouri Flat Rd & US 50 WB Ramps Performance by movement

Movement	WBL	WBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.8	1.1	0.0	0.0	0.0	0.0	0.3
Total Del/Veh (s)	62.9	26.9	34.3	8.2	20.7	4.6	25.6

5: Missouri Flat Rd & US 50 EB Ramps Performance by movement

Movement	EBL	EBR	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	24.6	65.9	14.2	11.0	6.5	22.0

6: Missouri Flat Rd & Mother Lode Dr Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	3.7	0.6	2.1	0.8	0.0	0.0	0.5
Total Del/Veh (s)	38.5	26.9	98.3	16.7	22.2	14.9	21.7

7: US 50 EB Ramps Performance by movement

Movement	EBT	WBR	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	21.3	4.4	15.4

11: Missouri Flat Rd Performance by movement

Movement	SET	NWT	NWR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	6.6	4.8	3.0	5.5

Total Network Performance

Denied Del/Veh (s)	1.3
Total Del/Veh (s)	76.4

Intersection: 3: Missouri Flat Rd & Plaza Dr

Phase	1	2	5	6	7	8
Movement(s) Served	NBL	SBT	SBL	NBT	EBTL	WBTL
Maximum Green (s)	14.5	33.8	10.3	38.0	18.5	28.3
Minimum Green (s)	4.0	8.0	4.0	8.0	4.0	8.0
Recall	None	C-Max	None	C-Max	None	None
Avg. Green (s)	14.5	37.5	8.1	45.7	18.2	25.4
g/C Ratio	NA	NA	-0.01	NA	NA	NA
Cycles Skipped (%)	0	0	22	0	0	0
Cycles @ Minimum (%)	0	0	0	0	0	0
Cycles Maxed Out (%)	100	100	11	100	81	53
Cycles with Peds (%)	0	9	0	6	0	6

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 4: Missouri Flat Rd & US 50 WB Ramps

Phase	1	2	4	6
Movement(s) Served	NBL	SBT	WBTL	NBT
Maximum Green (s)	22.0	50.0	23.9	76.0
Minimum Green (s)	4.0	8.0	4.0	8.0
Recall	None	C-Max	None	C-Max
Avg. Green (s)	22.0	50.4	23.4	76.5
g/C Ratio	NA	NA	NA	NA
Cycles Skipped (%)	0	0	0	0
Cycles @ Minimum (%)	0	0	0	0
Cycles Maxed Out (%)	100	100	88	100
Cycles with Peds (%)	0	3	0	0

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 5: Missouri Flat Rd & US 50 EB Ramps

Phase	2	6	8
Movement(s) Served	SBT	NBT	EBL
Maximum Green (s)	58.1	58.1	42.9
Minimum Green (s)	8.0	8.0	4.0
Recall	C-Max	C-Max	None
Avg. Green (s)	60.3	60.3	40.6
g/C Ratio	NA	NA	NA
Cycles Skipped (%)	0	0	0
Cycles @ Minimum (%)	0	0	0
Cycles Maxed Out (%)	100	100	75
Cycles with Peds (%)	3	0	0

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 6: Missouri Flat Rd & Mother Lode Dr

Phase	1	2	6	8
Movement(s) Served	NBL	SBT	NBT	EBL
Maximum Green (s)	5.0	62.1	71.1	30.0
Minimum Green (s)	4.0	8.0	8.0	4.0
Recall	None	C-Max	C-Max	None
Avg. Green (s)	5.1	69.3	80.1	23.6
g/C Ratio	-0.01	NA	NA	NA
Cycles Skipped (%)	6	0	0	0
Cycles @ Minimum (%)	0	0	0	0
Cycles Maxed Out (%)	94	100	100	56
Cycles with Peds (%)	0	3	0	56

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

2040 Hook Ramps

Average of Ten 1-Hour Simulations for the PM Peak Hour

3: Missouri Flat Rd & Plaza Dr Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Del/Veh (s)	0.3	0.3	0.2	0.3	0.4	0.4	0.0	0.0	0.0	3.9	3.3	4.1
Total Del/Veh (s)	83.3	84.9	35.8	31.0	37.9	29.7	92.3	18.2	5.5	58.7	54.9	57.2

3: Missouri Flat Rd & Plaza Dr Performance by movement

Movement	All
Denied Del/Veh (s)	1.0
Total Del/Veh (s)	40.8

4: Missouri Flat Rd & US 50 WB Ramps Performance by movement

Movement	WBL	WBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.9	1.2	0.0	0.0	0.0	0.0	0.3
Total Del/Veh (s)	63.9	21.5	44.9	12.4	27.7	4.6	30.0

5: Mother Lode Dr & I-580 EB Off-Ramp Performance by movement

Movement	EBL	EBT	WBT	WBR	SBL	All
Denied Del/Veh (s)	1.0	1.1	0.0	0.0	0.0	0.1
Total Del/Veh (s)	27.2	28.0	15.3	5.2	10.8	12.3

6: Missouri Flat Rd & Mother Lode Dr Performance by movement

Movement	EBL	EBT	EBR	NBL	NBT	SBT	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	18.3	2.4	18.7	39.5	18.9	24.7	6.1	18.5

33: Missouri Flat Rd Performance by movement

Movement	NBT	NBR	SBT	All
Denied Del/Veh (s)	0.7	0.7	0.0	0.3
Total Del/Veh (s)	10.3	4.3	2.7	5.6

Total Network Performance

Denied Del/Veh (s)	1.2
Total Del/Veh (s)	64.8

Intersection: 3: Missouri Flat Rd & Plaza Dr

Phase	1	2	5	6	7	8
Movement(s) Served	NBL	SBT	SBL	NBT	EBTL	WBTL
Maximum Green (s)	7.5	27.6	7.6	27.5	12.0	28.0
Minimum Green (s)	4.0	8.0	4.0	8.0	4.0	8.0
Recall	None	C-Max	None	C-Max	None	None
Avg. Green (s)	10.2	28.8	7.8	35.3	12.0	24.2
g/C Ratio	-0.01	NA	-0.01	NA	NA	NA
Cycles Skipped (%)	5	0	29	0	0	0
Cycles @ Minimum (%)	0	0	0	0	0	0
Cycles Maxed Out (%)	76	100	71	100	98	50
Cycles with Peds (%)	0	49	0	3	0	13

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 4: Missouri Flat Rd & US 50 WB Ramps

Phase	1	2	4	6
Movement(s) Served	NBL	SBT	WBTL	NBT
Maximum Green (s)	18.0	39.0	18.9	61.0
Minimum Green (s)	4.0	8.0	4.0	8.0
Recall	None	C-Max	None	C-Max
Avg. Green (s)	17.2	39.9	18.8	61.1
g/C Ratio	NA	NA	NA	NA
Cycles Skipped (%)	0	0	0	0
Cycles @ Minimum (%)	0	0	0	0
Cycles Maxed Out (%)	78	100	95	100
Cycles with Peds (%)	0	0	0	0

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 5: Mother Lode Dr & I-580 EB Off-Ramp

Phase	4	6	8
Movement(s) Served	EBTL	SBL	WBT
Maximum Green (s)	17.9	18.9	17.9
Minimum Green (s)	4.0	4.0	4.0
Recall	None	C-Max	None
Avg. Green (s)	16.3	21.5	16.3
g/C Ratio	-0.01	-0.01	-0.01
Cycles Skipped (%)	1	1	1
Cycles @ Minimum (%)	0	0	0
Cycles Maxed Out (%)	67	99	67
Cycles with Peds (%)	0	0	0

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

Intersection: 6: Missouri Flat Rd & Mother Lode Dr

Phase	1	2	6	8
Movement(s) Served	NBL	SBT	NBT	EBL
Maximum Green (s)	9.0	36.1	49.1	31.9
Minimum Green (s)	4.0	8.0	8.0	4.0
Recall	None	None	None	C-Max
Avg. Green (s)	9.7	35.6	49.1	31.9
g/C Ratio	NA	NA	NA	NA
Cycles Skipped (%)	0	0	0	0
Cycles @ Minimum (%)	0	0	0	0
Cycles Maxed Out (%)	100	93	100	100
Cycles with Peds (%)	0	3	0	53

Controller Summary
Average Cycle Length (s): NA
Number of Complete Cycles : 0

2040 Diverging Diamond Interchange

Average of Ten 1-Hour Simulations for the PM Peak Hour

1: Missouri Flat Road Performance by movement

Movement	WBT	NET	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	6.4	19.3	14.1

2: Missouri Flat Road & US 50 WB Off-Ramp to SB Performance by movement

Movement	EBT	SEL	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	1.9	47.6	15.6

3: Missouri Flat Road Performance by movement

Movement	NBL	NBT	NBR2	SBL	SBT	SBR	NEL	NER	NER2	SWL	SWT	SWR
Denied Del/Veh (s)	0.4	0.3	0.6	0.2	0.3	0.3	2.7	0.3	0.4	0.0	0.0	0.0
Total Del/Veh (s)	37.0	36.9	20.9	30.4	32.1	20.9	50.7	36.6	32.6	52.0	13.3	5.4

3: Missouri Flat Road Performance by movement

Movement	All
Denied Del/Veh (s)	0.3
Total Del/Veh (s)	27.0

4: Missouri Flat Road Performance by movement

Movement	WBL	WBT	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	4.0	7.5	6.1

5: Missouri Flat Road Performance by movement

Movement	EBT	EBR	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	2.7	1.3	2.5

6: Motherlode Drive & Missouri Flat Road Performance by movement

Movement	EBR	EBR2	NBL	NBR	NWT	All
Denied Del/Veh (s)	0.0	0.0	3.7	0.7	0.0	0.2
Total Del/Veh (s)	3.0	2.4	35.1	10.6	3.6	5.0

7: Missouri Flat Road & US 50 WB Off-Ramp to NB Performance by movement

Movement	WBT	SWR	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	1.5	6.9	3.5

8: US 50 WB Off-Ramp to NB & US 50 WB Off-Ramp to SB Performance by movement

Movement	SBT	SBR	All
Denied Del/Veh (s)	0.6	2.9	1.7
Total Del/Veh (s)	12.1	0.9	6.6

10: Performance by movement

Movement	SBT	SER	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	0.3	0.3	0.3

12: Missouri Flat Road & US 50 EB On-Ramp to NB Performance by movement

Movement	WBT	WBR	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	3.8	1.4	3.6

13: Missouri Flat Road Performance by movement

Movement	EBT	SWT	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	8.9	14.5	11.6

14: US 50 EB Off-Ramp to SB & Missouri Flat Road Performance by movement

Movement	EBT	NER	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	1.7	17.5	7.5

15: US 50 EB On-Ramp to NB Performance by movement

Movement	NBT	NWR	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	0.3	0.7	0.4

16: Missouri Flat Road Performance by movement

Movement	EBL	EBT	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	9.6	14.6	13.3

17: US 50 EB Off-Ramp to NB & Missouri Flat Road Performance by movement

Movement	WBT	NWL	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	2.2	11.3	3.3

18: US 50 EB Off-Ramp to NB & US 50 EB Off-Ramp to SB Performance by movement

Movement	NBT	NBR	All
Denied Del/Veh (s)	2.2	3.5	3.2
Total Del/Veh (s)	1.2	4.6	4.0

26: Performance by movement

Movement	WBR	NBT	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	6.1	0.6	2.9

27: Missouri Flat Road Performance by movement

Movement	EBT	WBT	WBR	All
Denied Del/Veh (s)	0.0	1.1	2.3	0.7
Total Del/Veh (s)	1.2	3.6	5.1	2.5

Total Network Performance

Denied Del/Veh (s)	1.5
Total Del/Veh (s)	48.2

Intersection: 1: Missouri Flat Road

Phase	2	4
Movement(s) Served	NET	WBT
Maximum Green (s)	46.0	34.0
Minimum Green (s)	4.0	4.0
Recall	Max	C-Max
Avg. Green (s)	46.0	34.0
g/C Ratio	NA	NA
Cycles Skipped (%)	0	0
Cycles @ Minimum (%)	0	0
Cycles Maxed Out (%)	100	100
Cycles with Peds (%)	8	0

Controller Summary
Average Cycle Length (s): NA

Number of Complete Cycles : 0

Intersection: 3: Missouri Flat Road

Phase	1	2	5	6	7	8
Movement(s) Served	SWL	NER	NEL	SWT	NBTL	SBTL
Maximum Green (s)	10.3	26.5	8.9	27.9	10.3	28.0
Minimum Green (s)	4.0	8.0	4.0	8.0	4.0	8.0
Recall	None	C-Max	None	C-Max	None	None
Avg. Green (s)	11.7	29.3	9.1	35.3	13.4	21.5
g/C Ratio	-0.01	NA	-0.01	NA	NA	NA
Cycles Skipped (%)	9	0	28	0	0	0
Cycles @ Minimum (%)	0	0	0	0	0	0
Cycles Maxed Out (%)	60	100	72	100	54	23
Cycles with Peds (%)	0	21	0	3	0	8

Controller Summary
Average Cycle Length (s): NA

Number of Complete Cycles : 0

Intersection: 6: Motherlode Drive & Missouri Flat Road

Phase	2	6	8
Movement(s) Served	EBR	NWT	NBL
Maximum Green (s)	51.1	51.1	30.0
Minimum Green (s)	8.0	8.0	4.0
Recall	C-Max	Max	None
Avg. Green (s)	69.3	69.3	11.8
g/C Ratio	NA	NA	NA
Cycles Skipped (%)	0	0	0
Cycles @ Minimum (%)	0	0	0
Cycles Maxed Out (%)	100	100	3
Cycles with Peds (%)	0	0	3

Controller Summary
Average Cycle Length (s): NA

Number of Complete Cycles : 0

Intersection: 13: Missouri Flat Road

Phase	2	4
Movement(s) Served	SWT	EBT
Maximum Green (s)	43.0	38.0
Minimum Green (s)	4.0	4.0
Recall	Max	C-Max
Avg. Green (s)	43.0	38.0
g/C Ratio	NA	NA
Cycles Skipped (%)	0	0
Cycles @ Minimum (%)	0	0
Cycles Maxed Out (%)	100	100
Cycles with Peds (%)	20	0

Controller Summary
Average Cycle Length (s): NA

Number of Complete Cycles : 0

2040 DDI With Relocation of Motherlode

Average of Ten 1-Hour Simulations for the PM Peak Hour

1: Missouri Flat Road Performance by movement

Movement	WBT	NET	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	11.2	31.6	23.4

2: Missouri Flat Road & US 50 WB Off-Ramp to SB Performance by movement

Movement	EBT	SEL	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	2.3	65.1	20.8

3: Missouri Flat Road Performance by movement

Movement	NBL	NBT	NBR2	SBL	SBT	SBR	NEL	NER	NER2	SWL	SWT	SWR
Denied Del/Veh (s)	0.3	0.3	0.2	3.5	2.4	4.0	3.6	1.1	1.2	0.0	0.0	0.0
Total Del/Veh (s)	51.8	52.4	29.8	43.0	40.1	31.9	58.5	41.6	36.9	60.5	15.1	6.4

3: Missouri Flat Road Performance by movement

Movement	All
Denied Del/Veh (s)	0.9
Total Del/Veh (s)	33.2

4: Missouri Flat Road Performance by movement

Movement	WBL	WBT	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	4.5	4.7	4.6

5: Missouri Flat Road Performance by movement

Movement	EBT	EBR	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	7.0	2.3	6.4

6: Performance by movement

Movement	EBT	EBR	WBL	WBT	NBL	NBR	All
Denied Del/Veh (s)	0.0	0.0	2.8	1.4	0.3	0.1	0.7
Total Del/Veh (s)	16.8	3.4	64.3	28.4	27.2	19.5	22.3

7: Missouri Flat Road & US 50 WB Off-Ramp to NB Performance by movement

Movement	WBT	SWR	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	2.4	11.0	5.6

8: US 50 WB Off-Ramp to NB & US 50 WB Off-Ramp to SB Performance by movement

Movement	SBT	SBR	All
Denied Del/Veh (s)	13.2	13.4	13.3
Total Del/Veh (s)	43.5	3.2	23.9

10: Performance by movement

Movement	SBT	SER	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	0.6	0.3	0.5

12: Missouri Flat Road & US 50 EB On-Ramp to NB Performance by movement

Movement	WBT	WBR	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	4.2	2.0	3.5

13: Missouri Flat Road Performance by movement

Movement	EBT	SWT	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	16.7	15.6	16.1

14: US 50 EB Off-Ramp to SB & Missouri Flat Road Performance by movement

Movement	EBT	NER	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	2.7	21.9	9.8

15: US 50 EB On-Ramp to NB Performance by movement

Movement	NBT	NWT	NWR	All
Denied Del/Veh (s)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	1.8	0.5	0.6	1.1

16: Missouri Flat Road Performance by movement

Movement	EBL	EBT	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	7.5	16.0	13.6

17: US 50 EB Off-Ramp to NB & Missouri Flat Road Performance by movement

Movement	WBT	NWL	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	2.2	12.2	3.5

18: US 50 EB Off-Ramp to NB & US 50 EB Off-Ramp to SB Performance by movement

Movement	NBT	NBR	All
Denied Del/Veh (s)	3.3	4.6	4.4
Total Del/Veh (s)	1.4	7.8	6.5

20: Missouri Flat Road Performance by movement

Movement	EBR	NWT	All
Denied Del/Veh (s)	0.0	0.0	0.0
Total Del/Veh (s)	5.5	1.3	3.5

Total Network Performance

Denied Del/Veh (s)	4.1
Total Del/Veh (s)	84.5