Attachment B

August 2025

MIRAMONTE

Complete Streets Study

Traffic Analysis Summary

VISION ZERO

City of Mountain View

2016 MEASURE B

Introduction

This report summarizes the results of a traffic operations analysis conducted for the three study intersections along Miramonte Avenue, between El Camino Real and Castro St/Marilyn Dr, in the City of Mountain View. The analysis evaluated Existing Baseline and Existing with Project conditions during the AM and PM peak periods using Synchro Version 12.

Data Collection

Turning Movement Counts

Turning movement counts, including bicycles and pedestrians, were collected on Thursday, September 19, 2024, between 7:00 AM and 9:00 AM and between 2:00 PM and 6:00 PM at the following intersections:

1. Miramonte Ave and El Camino Real – signalized
2. Miramonte Ave and Park Dr – side street stop controlled
3. Miramonte Ave and Castro St/Marilyn Dr – signalized

Average Daily Traffic

Average daily traffic (ADT) counts were conducted along Miramonte Ave, just south of Sonia Wy, 24 hours a day for seven days, from Monday, September 16, 2024 to Sunday, September 22, 2024.

Additional details on data collection are provided in **Appendix A: Data Collection**.

Signal timing data was provided by the City of Mountain View.

Analysis Scenarios

Two scenarios were evaluated:

- **Existing Baseline Conditions:** Based on observed traffic volumes and current intersection configurations.
- **Existing with Project Conditions:** Reflects proposed roadway modifications, including a road diet on Miramonte Avenue. No vehicle diversion is assumed to occur due to the capacity reduction. Note that the Project is not proposed to change intersection geometrics at Intersections 1 and 3.

Methodology

Intersection performance was analyzed using Synchro Version 12 to obtain traffic measures of effectiveness (MOEs). MOEs for this analysis include intersection delay, Level of Service (LOS), and 95th percentile queue length.

Intersection delay, which is measured in seconds, is the average time that drivers wait at an intersection during the peak 15-minutes of the peak hour of roadway traffic. Higher intersection delay is associated with a poorer experience for drivers. Delay measurements were generated using the Highway Capacity Manual (HCM) 2000 methodology.

LOS is a qualitative measure expressed as a letter grade (A through F) that describes the operation of an intersection. LOS A is associated with the ideal operation of an intersection where drivers experience free flow traffic. LOS F is associated with the worst operation of an intersection where drivers experience high congestion. Per California Senate Bill SB743 and City of Mountain View Resolution 18484: Adopt Policy Implementing Calif. Environmental Quality Act Senate Bill 743, LOS is not a determinant for project impacts as part of state environmental review. It is provided here for informational purposes only.

The 95th percentile queue length represents the queue length that is only expected to be exceeded 5% of the time during the peak 15 minutes in the peak hour. It is commonly used as a basis of determining turn pocket lengths.

Results

Weekday ADT is approximately 8,000. Weekend traffic is approximately 65% of weekday traffic – approximately 5,200 vehicles. An ADT of less than 10,000 indicates that a road diet could be implemented with minimal operational impacts.[1]

Detailed Synchro outputs are provided in **Appendix B: Detailed Synchro Reports.** The summary tables below present LOS and average delay for each intersection, as well as 95th percentile queue lengths.

[1] Federal Highway Administration, *Road Diet Information Guide*, 2014.

Table 1: Intersection Delay and LOS Results – Miramonte Ave and El Camino Real

Intersection Approach	AM Existing (Delay (s) / LOS)	AM Ex + Proj (Delay (s) / LOS)	PM Existing (Delay (s) / LOS)	PM Ex + Proj (Delay (s) / LOS)
EB	43.2 / D	43.2 / D	40.3 / D	40.3 / D
WB	35.7 / D	35.7 / D	32.2 / C	32.2 / C
NB	87.9 / F	87.9 / F	96.4 / F	96.4 / F
SB	76.0 / E	76.0 / E	73.5 / E	73.5 / E
Overall	**54.0 / D**	**54.0 / D**	**50.2 / D**	**50.2 / D**

Table 2: 95th Percentile Queue Results – Miramonte Ave and El Camino Real

Movement	AM Existing (95th Percentile Queue Length (ft))	AM Ex + Proj (95th Percentile Queue Length (ft))	PM Existing (95th Percentile Queue Length (ft))	PM Ex + Proj (95th Percentile Queue Length (ft))
EBL	240	240	255	255
EBT	494	494	600	600
EBR	63	63	56	56
WBL	197	197	227*	227*
WBT	493	493	512	512
NBL	240	240	282*	282*
NBT	288	288	200	200
SBL	311	311	289	289
SBT	291	291	261	261
SBR	50	50	224	224

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

The Project is not proposing to change geometrics at the Miramonte Ave and El Camino Real intersection. Therefore, the Existing and Existing + Project results are identical.

Table 3: Intersection Delay and LOS Results – Miramonte Ave and Park Dr

Intersection Approach	AM Existing (Delay (s) / LOS)	AM Ex + Proj (Delay (s) / LOS)	PM Existing (Delay (s) / LOS)	PM Ex + Proj (Delay (s) / LOS)
WB	10.9 / B	13.9 / B	9.9 / A	11.5 / B
NB	N/A	N/A	N/A	N/A
SB	N/A	N/A	N/A	N/A
Overall	**0.1 / A**	**0.1 / A**	**0.1 / A**	**0.1 / A**

Table 4: 95th Percentile Queue Results – Miramonte Ave and Park Dr

Movement	AM Existing (95th Percentile Queue Length (ft))	AM Ex + Proj (95th Percentile Queue Length (ft))	PM Existing (95th Percentile Queue Length (ft))	PM Existing (95th Percentile Queue Length (ft))
WBL	<1 vehicle	<1 vehicle	<1 vehicle	<1 vehicle
WBR	0	0	0	0
NBT	0	0	0	0
NBR	0	0	0	0
SBL	0	0	0	0
SBT	0	0	0	0

The Project is proposing to reduce the number of travel lanes by one in each direction on Miramonte Ave on each side of Park Dr. The proposed improvements would lead to a nominal delay increase on the westbound (stop controlled) leg of Miramonte Ave and Park Dr of 3.0 seconds in the AM peak and 1.6 seconds in the PM peak. The LOS during the AM and PM peak periods remains at LOS A in the

Existing with Project condition. During the AM peak, the 95th percentile queue on the westbound leg would not see a measurable increase.

Table 5: Intersection Delay and LOS Results – Miramonte Ave and Castro St/Marilyn Dr

Intersection Approach	AM Existing (Delay (s) / LOS)	AM Ex + Proj (Delay (s) / LOS)	PM Existing (Delay (s) / LOS)	PM Ex + Proj (Delay (s) / LOS)
EB	33.4 / C	33.4 / C	25.7 / C	25.7 / C
WB	34.2 / C	34.2 / C	20.9 / C	20.9 / C
NB	18.6 / B	18.6 / B	12.5 / B	12.5 / B
SB	13.5 / B	13.5 / B	11.6 / B	11.6 / B
Overall	**18.3 / B**	**18.3 / B**	**13.5 / B**	**13.5 / B**

Table 6: 95th Percentile Queue Results – Miramonte Ave and Castro St/Marilyn Dr

Movement	AM Existing (95th Percentile Queue Length (ft))	AM Ex + Proj (95th Percentile Queue Length (ft))	PM Existing (95th Percentile Queue Length (ft))	PM Ex + Proj (95th Percentile Queue Length (ft))
EBL	40	40	21	21
WBL	64	64	74	74
WBT	63	63	73	73
NBL	<1 vehicle	<1 vehicle	<1 vehicle	<1 vehicle
NBT	192	192	156	156
SBL	101	101	31	31
SBT	120	120	137	137

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

The Project is not proposing to change geometrics at the Miramonte Ave and Castro St/Marilyn Dr intersection. Therefore, the Existing and Existing + Project results are identical.

Key Findings and Conclusion

Existing Baseline Conditions (2024 volumes, existing geometry):

- All three intersections operate at acceptable LOS during both AM and PM peak periods.

Existing with Project Conditions (2024 volumes, proposed geometry):

- The road diet slightly increases delay on the westbound (stop controlled) leg of Miramonte Ave and Park Dr, with the LOS remaining at LOS B or better.
- Delay, LOS, and 95th percentile queues remain unchanged at the signalized intersections of Miramonte Ave and El Camino Real and Miramonte Ave and Castro St/Marilyn Dr as the Project would not change intersection geometrics at those locations.

The proposed road diet on Miramonte Avenue (between El Camino Real and Castro Street/Marilyn Drive) does not result in impacts to traffic operations.

Appendix A: Data Collection

December 2024

MIRAMONTE

Complete Streets Study

Data Collection

VISION ZERO

City of Mountain View

2016 MEASURE B

Data Collection

Turning Movement Counts (TMC)

Turning movement counts, including bikes and pedestrians, were conducted at the following five intersections on Thursday, September 19, 2024 between 7AM and 9AM and between 2PM and 6PM:

1. Miramonte Ave and El Camino Real (Segment A)
2. Miramonte Ave and Park Dr (Segment A)
3. Miramonte Ave and Castro St/Marilyn Dr (Segment A)
4. Miramonte Ave and Cuesta Dr (Segment C)
5. Miramonte Ave and Madison Dr (Segment C) (recollected on 9/26 due to equipment failure)

Average Daily Traffic (ADT) Counts

ADT counts were conducted at the following two locations, 24 hours a day for seven days, from Monday, September 16, 2024 to Sunday, September 22, 2024:

1. Miramonte Ave, just south of Sonia Way (Segment A)
2. Miramonte Ave, just south of Rose Ave (Segment C)

Speed Surveys

Speed surveys were conducted at the following two locations on Tuesday, September 10, 2024 starting at 10:15AM and ending at 11:50AM, once the speed of 100 vehicles at each location had been measured:

1. Miramonte Ave, near Trophy Dr (Segment A)
2. Miramonte Ave, just south of Madison Dr (Segment C)

Parking Utilization

City of Mountain View staff collected parking utilization data along the entire length of Miramonte Avenue from El Camino Real to Yardis Court, including on-street and off-street data. Data was collected at the following dates and times:

- Tuesday, February 27, 2024, at 6AM, 9AM, 12PM, 4PM, 7PM and 11PM
- Sunday, March 3, 2024, at 6AM, 9AM, 12PM, 4PM, 7PM and 11PM
- Saturday, March 9, 2024, at 6AM, 9AM, 12PM, 4PM, 7PM and 11PM
- Wednesday, September 18, 2024, at 6AM, 9AM, 12PM, 4PM, 7PM and 11PM (4PM data was recollected on 10/16)
- Thursday, September 19, 2024, at 6AM, 9AM, 12PM, 4PM, 7PM and 11PM (9AM data was recollected on 10/17)

- Saturday, September 21, 2024, at 6AM, 9AM, 12PM, 4PM, 7PM and 11PM

Summary of Data

Turning Movement Counts

Miramonte Ave and El Camino Real (Segment A)

The peak hours at this intersection occur between 7:45AM and 8:45AM and between 5PM and 6PM. During the AM peak hour, 3,847 vehicles pass through the intersection and during the PM peak hour, 4,257 vehicles pass through the intersection.

During the AM peak hour, 497 vehicles travel northbound on Miramonte Avenue and 773 travel southbound. During the PM peak hour, 391 travel northbound and 855 travel southbound.

A total of 19 and 18 bikes travel through the intersection in the AM and PM peak hours, respectively. Most cyclists, 15 and 11 in the AM and PM peak hours, respectively, are completing through movements on Miramonte Avenue.

During each peak hour, 31 pedestrians cross at the intersection.

Miramonte Ave and Park Dr (Segment A)

The peak hours at this intersection occur between 7:45AM and 8:45AM and between 4:45PM and 5:45PM. During the AM peak hour, 1,126 vehicles pass through the intersection and during the PM peak hour, 976 vehicles pass through the intersection. The vast majority of traffic is through traffic on Miramonte Avenue (>98%) with no more than 14 vehicles traveling in any one direction during any peak hour on Park Drive.

During the AM peak hour, 546 vehicles travel northbound on Miramonte Avenue and 566 travel southbound. During the PM peak hour, 457 travel northbound and 514 travel southbound.

A total of 13 and 9 bikes travel through the intersection in the AM and PM peak hours, respectively.

A total of 5 and 6 pedestrians cross at the intersection in the AM and PM peak hours, respectively.

Miramonte Ave and Castro St/Marilyn Dr (Segment A)

The peak hours at this intersection occur between 7:45AM and 8:45AM and between 5PM and 6PM. During the AM peak hour, 1,264 vehicles pass through the intersection and during the PM peak hour, 1,156 vehicles pass through the intersection. The majority of traffic is on Miramonte Avenue with the western leg of the intersection experiencing the lowest traffic volumes.

During the AM peak hour, 620 vehicles travel northbound on Miramonte Avenue and 512 travel southbound. During the PM peak hour, 528 travel northbound and 467 travel southbound. Over 200 vehicles make the NBR turning movement in the AM peak hour and over 130 vehicles make each of the NBR and WBL turning movements in the PM peak hour.

A total of 84 bikes travel through the intersection in the AM peak hour, over 50% of which make the NBR turning movement from Miramonte Avenue onto Castro Street. A total of 33 bikes travel through the intersection in the PM peak hour.

A total of 52 and 27 pedestrians cross at the intersection in the AM and PM peak hours, respectively. The majority of pedestrian crossings occurred on the south leg of Miramonte Avenue.

Miramonte Ave and Cuesta Dr (Segment C)

The peak hours at this intersection occur between 7:45AM and 8:45AM and between 4:45PM and 5:45PM. During the AM peak hour, 2,204 vehicles pass through the intersection and during the PM peak hour, 2,232 vehicles pass through the intersection.

During the AM peak hour, 617 vehicles travel northbound on Miramonte Avenue and 486 travel southbound. During the PM peak hour, 417 travel northbound and 525 travel southbound.

A total of 37 bikes travel through the intersection in the AM peak hour, almost 50% of which are through movements on Miramonte Avenue. A total of 28 bikes travel through the intersection in the PM peak hour.

A total of 37 and 33 pedestrians cross at the intersection in the AM and PM peak hours, respectively.

Miramonte Ave and Madison Dr (Segment C)

The peak hours at this intersection occur between 7:30AM and 8:30AM and between 4:30PM and 5:30PM. During the AM peak hour, 1,060 vehicles pass through the intersection and during the PM peak hour, 937 vehicles pass through the intersection.

During the AM peak hour, 262 vehicles travel northbound on Miramonte Avenue and 440 travel southbound. During the PM peak hour, 347 vehicles travel northbound and 464 travel southbound.

A total of 34 and 21 bikes travel through the intersection in the AM and PM peak hours, respectively with over 88% being through movements on Miramonte Avenue.

A total of 35 and 20 pedestrians cross at the intersection in the AM and PM peak hours, respectively.

Average Daily Traffic (ADT) Counts

Miramonte Ave, just south of Sonia Way (Segment A)

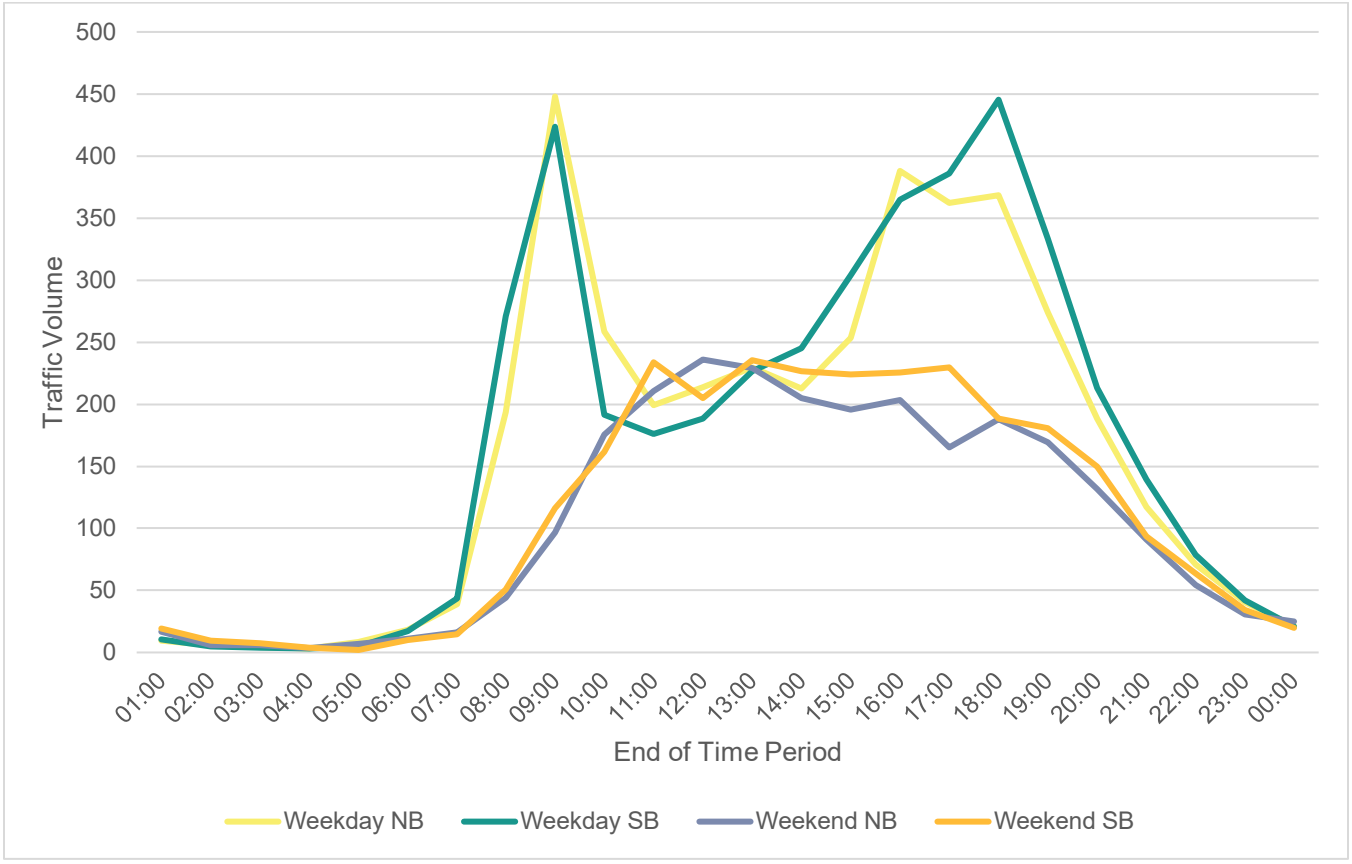
Weekday average daily traffic (ADT) in Segment A is approximately 8,000. Weekend traffic is approximately 65% of weekday traffic – approximately 5,200 vehicles.

The weekday AM peak hour is between 8AM and 9AM with up to 928 vehicles traveling in both directions. The weekday PM peak hour is between 5PM and 6PM with up to 926 vehicles traveling in both directions.

During the weekend, the peak hour occurs at midday with up to 530 vehicles traveling in both directions.

Figure 1 shows hourly volumes on Segment A of Miramonte Avenue.

Figure 1: Traffic Volumes on Segment A of Miramonte Avenue



Miramonte Ave, just south of Rose Ave (Segment C)

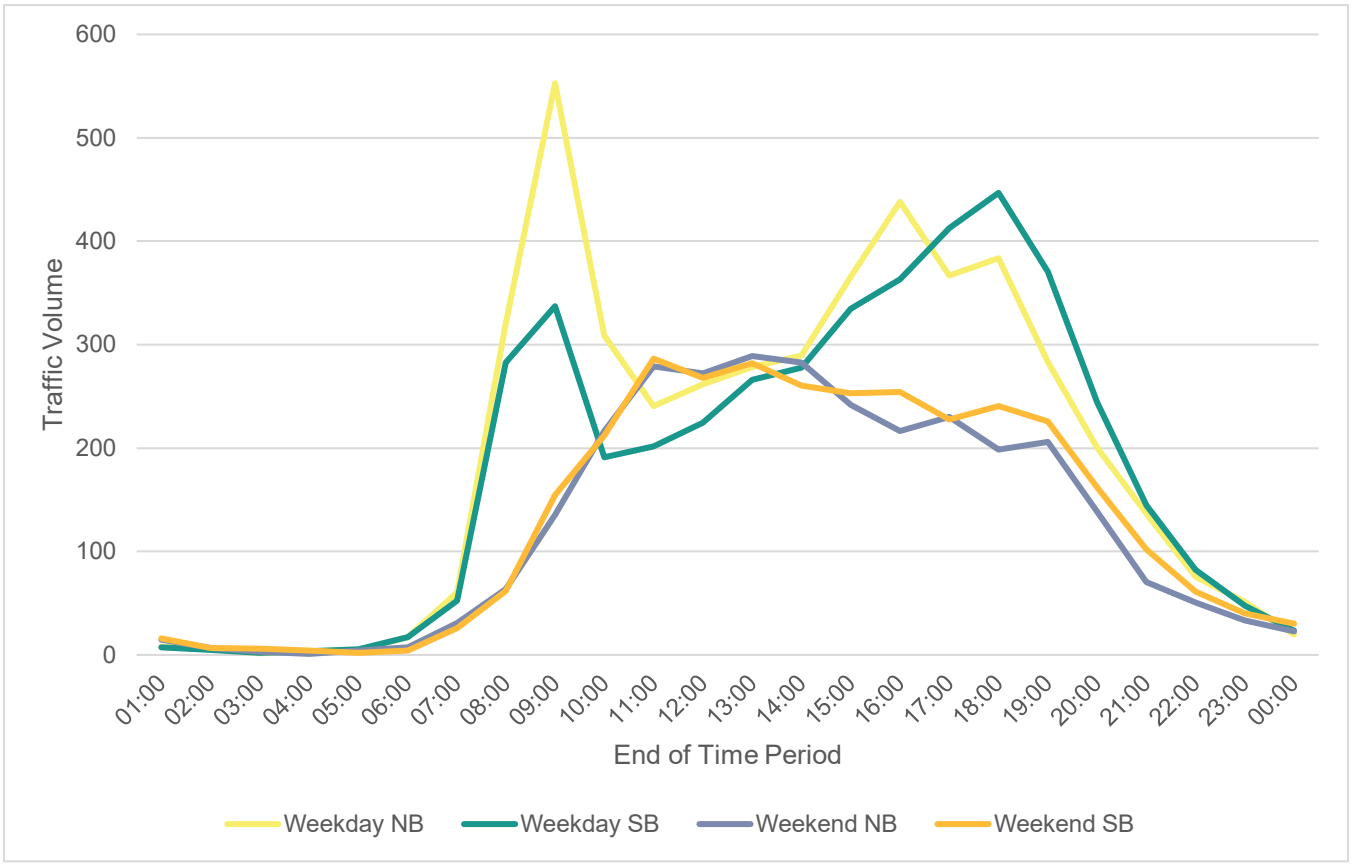
Weekday ADT in Segment C is approximately 9,000. Weekend traffic is approximately 69% of weekday traffic – approximately 6,200 vehicles.

The weekday AM peak hour is between 8AM and 9AM with up to 1,040 vehicles traveling in both directions. The weekday PM peak hour is between 5PM and 6PM with up to 914 vehicles traveling in both directions.

During the weekend, the peak hour occurs at midday with up to 573 vehicles traveling in both directions.

Figure 2 shows hourly volumes on Segment C of Miramonte Avenue.

Figure 2: Traffic Volumes on Segment C of Miramonte Avenue



Speed Surveys

Near Trophy Dr (Segment A), the 85th percentile northbound speed was 38mph, 13mph over the posted speed limit of 25mph.

The 85th percentile southbound speed was 36mph, 1mph over the posted speed limit of 35mph at that location. Further north, near Park Drive, the posted speed limit reduces to 25mph.

The maximum speed recorded at this location was 40mph which occurred in the northbound direction.

Near Madison Dr (Segment C), the 85th percentile northbound speed was 37mph, the 85th percentile southbound speed was 39mph, and the 85th percentile bidirectional speed was 38mph. The 85th percentile speed was at most 4mph over the posted speed limit of 35mph. The maximum speed recorded at this location was 43mph which occurred in the southbound direction.

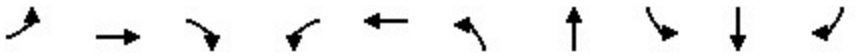
Parking Utilization

There are 161 on-street parking spaces in Segment A and 154 on-street parking spaces in Segment C. Parking utilization is generally higher in the morning. In Segment A, less than a quarter of parking spaces are occupied at any given time with only 6AM on a Saturday seeing higher levels of parking utilization (27%). Parking utilization in Segment C does not exceed 8% at any time, which occurs at 9AM on a weekday. Table 1 summarizes the parking utilization data.

Table 1: Summary of Parking Utilization Data

	Segment A	Segment C
Number of on-street parking spaces	161	154
Maximum number of occupied spaces – weekday	36	12
Maximum percentage of occupied space – weekday	22%	8%
Maximum number of occupied spaces – weekend	43	4
Maximum percentage of occupied space – weekend	27%	3%

Appendix B: Detailed Synchro Reports



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	343	995	152	107	1285	164	450	217	452	274
v/c Ratio	0.81	0.54	0.18	0.59	0.51	0.80	0.84	0.86	0.71	0.55
Control Delay (s/veh)	92.6	32.4	8.5	91.9	33.5	103.1	87.5	104.4	76.2	10.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	92.6	32.4	8.5	91.9	33.5	103.1	87.5	104.4	76.2	10.2
Queue Length 50th (ft)	207	414	23	123	375	192	272	254	267	0
Queue Length 95th (ft)	240	494	63	197	493	240	288	311	291	50
Internal Link Dist (ft)		343			461		677		208	
Turn Bay Length (ft)	190			200		225				
Base Capacity (vph)	505	1845	853	180	2515	280	692	310	762	548
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.54	0.18	0.59	0.51	0.59	0.65	0.70	0.59	0.50

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	288	836	128	103	1133	101	133	318	46	178	371	225
Future Volume (vph)	288	836	128	103	1133	101	133	318	46	178	371	225
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.1	4.6	4.6	4.1	4.6		4.5	4.5		4.5	4.5	4.5
Lane Util. Factor	0.97	0.95	1.00	1.00	0.91		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.97	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		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3502	3610	1562	1805	5114		1805	3524		1805	3610	1573
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3502	3610	1562	1805	5114		1805	3524		1805	3610	1573
Peak-hour factor, PHF	0.84	0.84	0.84	0.96	0.96	0.96	0.81	0.81	0.81	0.82	0.82	0.82
Adj. Flow (vph)	343	995	152	107	1180	105	164	393	57	217	452	274
RTOR Reduction (vph)	0	0	55	0	5	0	0	7	0	0	0	226
Lane Group Flow (vph)	343	995	97	107	1280	0	164	443	0	217	452	48
Confl. Peds. (#/hr)	5		10	10		5	8		8	8		8
Confl. Bikes (#/hr)			5			7			9			2
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2									4
Actuated Green, G (s)	21.7	92.0	92.0	18.0	88.3		20.6	27.0		25.3	31.7	31.7
Effective Green, g (s)	21.7	92.0	92.0	18.0	88.3		20.6	27.0		25.3	31.7	31.7
Actuated g/C Ratio	0.12	0.51	0.51	0.10	0.49		0.11	0.15		0.14	0.18	0.18
Clearance Time (s)	4.1	4.6	4.6	4.1	4.6		4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	2.0	4.0	4.0	2.0	4.0		2.0	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	422	1845	798	180	2508		206	528		253	635	277
v/s Ratio Prot	c0.10	c0.28		c0.06	0.25		0.09	c0.13		c0.12	0.13	
v/s Ratio Perm			0.06									0.03
v/c Ratio	0.81	0.54	0.12	0.59	0.51		0.80	0.84		0.86	0.71	0.17
Uniform Delay, d1	77.2	29.7	22.9	77.5	31.2		77.7	74.4		75.6	69.8	63.0
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	10.8	1.1	0.3	3.5	0.7		17.7	10.8		23.0	3.1	0.1
Delay (s)	88.0	30.8	23.2	81.0	31.9		95.4	85.2		98.6	73.0	63.1
Level of Service	F	C	C	F	C		F	F		F	E	E
Approach Delay (s/veh)		43.2			35.7			87.9			76.0	
Approach LOS		D			D			F			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	54.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	17.7
Intersection Capacity Utilization	75.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	14	546	0	0	566
Future Volume (Veh/h)	0	14	546	0	0	566
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.88	0.88	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	0	16	728	0	0	755
Pedestrians	2					3
Lane Width (ft)	12.0					12.0
Walking Speed (ft/s)	3.5					3.5
Percent Blockage	0					0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						757
pX, platoon unblocked	0.88					
vC, conflicting volume	1108	369			730	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	860	369			730	
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	97			100	
cM capacity (veh/h)	264	631			882	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	16	364	364	0	378	378
Volume Left	0	0	0	0	0	0
Volume Right	16	0	0	0	0	0
cSH	631	1700	1700	1700	1700	1700
Volume to Capacity	0.03	0.21	0.21	0.00	0.22	0.22
Queue Length 95th (ft)	2	0	0	0	0	0
Control Delay (s/veh)	10.9	0.0	0.0	0.0	0.0	0.0
Lane LOS	B					
Approach Delay (s/veh)	10.9	0.0			0.0	
Approach LOS	B					

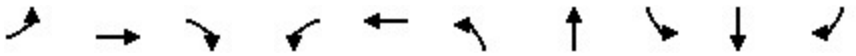
Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	26.6%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	55	64	63	6	759	121	519
v/c Ratio	0.19	0.23	0.23	0.02	0.59	0.38	0.24
Control Delay (s/veh)	31.3	35.2	35.2	34.0	20.9	35.6	11.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	31.3	35.2	35.2	34.0	20.9	35.6	11.1
Queue Length 50th (ft)	20	29	28	3	144	53	63
Queue Length 95th (ft)	40	64	63	13	192	101	120
Internal Link Dist (ft)	129		279		2529		1804
Turn Bay Length (ft)		155		70		100	
Base Capacity (vph)	942	893	891	341	1842	570	2290
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.07	0.07	0.02	0.41	0.21	0.23

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	17	7	87	6	4	5	409	206	97	410	5
Future Volume (vph)	11	17	7	87	6	4	5	409	206	97	410	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.2	5.2		4.6	4.6		4.6	4.6	
Lane Util. Factor		1.00		0.95	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		0.99		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		0.97		1.00	0.99		1.00	0.95		1.00	1.00	
Flt Protected		0.98		0.95	0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1803		1715	1712		1805	3394		1805	3602	
Flt Permitted		0.98		0.95	0.96		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1803		1715	1712		1805	3394		1805	3602	
Peak-hour factor, PHF	0.63	0.63	0.63	0.76	0.76	0.76	0.81	0.81	0.81	0.80	0.80	0.80
Adj. Flow (vph)	17	27	11	114	8	5	6	505	254	121	512	6
RTOR Reduction (vph)	0	7	0	0	0	0	0	36	0	0	0	0
Lane Group Flow (vph)	0	48	0	64	63	0	6	723	0	121	519	0
Confl. Peds. (#/hr)	7		28	28		7	10		7	7		10
Confl. Bikes (#/hr)			8			5			24			4
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)		7.2		7.4	7.4		1.6	30.4		12.6	41.4	
Effective Green, g (s)		7.2		7.4	7.4		1.6	30.4		12.6	41.4	
Actuated g/C Ratio		0.09		0.10	0.10		0.02	0.39		0.16	0.54	
Clearance Time (s)		5.0		5.2	5.2		4.6	4.6		4.6	4.6	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	4.0		3.0	4.0	
Lane Grp Cap (vph)		168		164	164		37	1339		295	1936	
v/s Ratio Prot		c0.03		c0.04	0.04		0.00	c0.21		c0.07	0.14	
v/s Ratio Perm												
v/c Ratio		0.28		0.39	0.38		0.16	0.54		0.41	0.27	
Uniform Delay, d1		32.5		32.7	32.7		37.0	17.9		28.9	9.6	
Progression Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.9		1.5	1.5		2.1	0.5		0.9	0.1	
Delay (s)		33.4		34.2	34.2		39.1	18.5		29.8	9.7	
Level of Service		C		C	C		D	B		C	A	
Approach Delay (s/veh)		33.4			34.2			18.6			13.5	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	18.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	77.0	Sum of lost time (s)	19.4
Intersection Capacity Utilization	60.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	343	995	152	107	1285	164	450	217	452	274
v/c Ratio	0.81	0.54	0.18	0.59	0.51	0.80	0.84	0.86	0.71	0.55
Control Delay (s/veh)	92.6	32.4	8.6	91.9	33.5	103.1	87.5	104.4	76.2	10.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	92.6	32.4	8.6	91.9	33.5	103.1	87.5	104.4	76.2	10.2
Queue Length 50th (ft)	207	414	23	123	375	192	272	254	267	0
Queue Length 95th (ft)	240	494	63	197	493	240	288	311	291	50
Internal Link Dist (ft)		343			461		677		208	
Turn Bay Length (ft)	190			200		225				
Base Capacity (vph)	505	1845	834	180	2515	280	692	310	762	548
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.54	0.18	0.59	0.51	0.59	0.65	0.70	0.59	0.50

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	288	836	128	103	1133	101	133	318	46	178	371	225
Future Volume (vph)	288	836	128	103	1133	101	133	318	46	178	371	225
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.1	4.6	4.6	4.1	4.6		4.5	4.5		4.5	4.5	4.5
Lane Util. Factor	0.97	0.95	1.00	1.00	0.91		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.94	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		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3502	3610	1526	1805	5114		1805	3524		1805	3610	1573
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3502	3610	1526	1805	5114		1805	3524		1805	3610	1573
Peak-hour factor, PHF	0.84	0.84	0.84	0.96	0.96	0.96	0.81	0.81	0.81	0.82	0.82	0.82
Adj. Flow (vph)	343	995	152	107	1180	105	164	393	57	217	452	274
RTOR Reduction (vph)	0	0	55	0	5	0	0	7	0	0	0	226
Lane Group Flow (vph)	343	995	97	107	1280	0	164	443	0	217	452	48
Confl. Peds. (#/hr)	5		10	10		5	8		8	8		8
Confl. Bikes (#/hr)			5			7			9			2
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2									4
Actuated Green, G (s)	21.7	92.0	92.0	18.0	88.3		20.6	27.0		25.3	31.7	31.7
Effective Green, g (s)	21.7	92.0	92.0	18.0	88.3		20.6	27.0		25.3	31.7	31.7
Actuated g/C Ratio	0.12	0.51	0.51	0.10	0.49		0.11	0.15		0.14	0.18	0.18
Clearance Time (s)	4.1	4.6	4.6	4.1	4.6		4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	2.0	4.0	4.0	2.0	4.0		2.0	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	422	1845	779	180	2508		206	528		253	635	277
v/s Ratio Prot	c0.10	c0.28		c0.06	0.25		0.09	c0.13		c0.12	0.13	
v/s Ratio Perm			0.06									0.03
v/c Ratio	0.81	0.54	0.12	0.59	0.51		0.80	0.84		0.86	0.71	0.17
Uniform Delay, d1	77.2	29.7	23.0	77.5	31.2		77.7	74.4		75.6	69.8	63.0
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	10.8	1.1	0.3	3.5	0.7		17.7	10.8		23.0	3.1	0.1
Delay (s)	88.0	30.8	23.3	81.0	31.9		95.4	85.2		98.6	73.0	63.1
Level of Service	F	C	C	F	C		F	F		F	E	E
Approach Delay (s/veh)		43.2			35.7			87.9			76.0	
Approach LOS		D			D			F			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	54.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	17.7
Intersection Capacity Utilization	75.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	14	546	0	0	566
Future Volume (Veh/h)	0	14	546	0	0	566
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.88	0.88	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	0	16	728	0	0	755
Pedestrians	2					3
Lane Width (ft)	12.0					12.0
Walking Speed (ft/s)	3.5					3.5
Percent Blockage	0					0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						757
pX, platoon unblocked	0.85					
vC, conflicting volume	1485	733			730	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1482	733			730	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	96			100	
cM capacity (veh/h)	117	422			882	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1
Volume Total	16	728	0	755
Volume Left	0	0	0	0
Volume Right	16	0	0	0
cSH	422	1700	1700	1700
Volume to Capacity	0.04	0.43	0.00	0.44
Queue Length 95th (ft)	3	0	0	0
Control Delay (s/veh)	13.9	0.0	0.0	0.0
Lane LOS	B			
Approach Delay (s/veh)	13.9	0.0		0.0
Approach LOS	B			

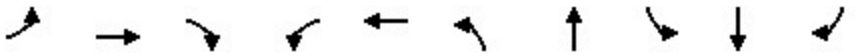
Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	40.7%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	55	64	63	6	759	121	519
v/c Ratio	0.19	0.23	0.23	0.02	0.59	0.38	0.24
Control Delay (s/veh)	31.3	35.2	35.2	34.0	20.9	35.6	11.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	31.3	35.2	35.2	34.0	20.9	35.6	11.1
Queue Length 50th (ft)	20	29	28	3	144	53	63
Queue Length 95th (ft)	40	64	63	13	192	101	120
Internal Link Dist (ft)	129		279		2529		1804
Turn Bay Length (ft)		155		70		100	
Base Capacity (vph)	942	893	890	341	1842	570	2290
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.07	0.07	0.02	0.41	0.21	0.23

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	17	7	87	6	4	5	409	206	97	410	5
Future Volume (vph)	11	17	7	87	6	4	5	409	206	97	410	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.2	5.2		4.6	4.6		4.6	4.6	
Lane Util. Factor		1.00		0.95	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		0.99		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		0.97		1.00	0.99		1.00	0.95		1.00	1.00	
Flt Protected		0.98		0.95	0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1803		1715	1709		1805	3394		1805	3602	
Flt Permitted		0.98		0.95	0.96		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1803		1715	1709		1805	3394		1805	3602	
Peak-hour factor, PHF	0.63	0.63	0.63	0.76	0.76	0.76	0.81	0.81	0.81	0.80	0.80	0.80
Adj. Flow (vph)	17	27	11	114	8	5	6	505	254	121	512	6
RTOR Reduction (vph)	0	7	0	0	0	0	0	36	0	0	0	0
Lane Group Flow (vph)	0	48	0	64	63	0	6	723	0	121	519	0
Confl. Peds. (#/hr)	7		28	28		7	10		7	7		10
Confl. Bikes (#/hr)			8			5			24			4
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)		7.2		7.4	7.4		1.6	30.4		12.6	41.4	
Effective Green, g (s)		7.2		7.4	7.4		1.6	30.4		12.6	41.4	
Actuated g/C Ratio		0.09		0.10	0.10		0.02	0.39		0.16	0.54	
Clearance Time (s)		5.0		5.2	5.2		4.6	4.6		4.6	4.6	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	4.0		3.0	4.0	
Lane Grp Cap (vph)		168		164	164		37	1339		295	1936	
v/s Ratio Prot		c0.03		c0.04	0.04		0.00	c0.21		c0.07	0.14	
v/s Ratio Perm												
v/c Ratio		0.28		0.39	0.38		0.16	0.54		0.41	0.27	
Uniform Delay, d1		32.5		32.7	32.7		37.0	17.9		28.9	9.6	
Progression Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.9		1.5	1.5		2.1	0.5		0.9	0.1	
Delay (s)		33.4		34.2	34.2		39.1	18.5		29.8	9.7	
Level of Service		C		C	C		D	B		C	A	
Approach Delay (s/veh)		33.4			34.2			18.6			13.5	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	18.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	77.0	Sum of lost time (s)	19.4
Intersection Capacity Utilization	60.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	348	1152	124	129	1473	179	323	189	389	362
v/c Ratio	0.84	0.60	0.14	0.68	0.55	0.95	0.78	0.76	0.72	0.79
Control Delay (s/veh)	91.8	29.6	6.7	91.2	29.1	126.0	85.0	89.1	76.2	31.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	91.8	29.6	6.7	91.2	29.1	126.0	85.0	89.1	76.2	31.4
Queue Length 50th (ft)	197	442	14	141	390	201	184	208	223	110
Queue Length 95th (ft)	255	600	56	#227	512	#282	200	289	261	224
Internal Link Dist (ft)		343			461		677		208	
Turn Bay Length (ft)	190			200		225				
Base Capacity (vph)	453	1933	888	191	2674	191	717	329	998	620
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.60	0.14	0.68	0.55	0.94	0.45	0.57	0.39	0.58

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	334	1106	119	119	1231	124	140	235	17	172	354	329
Future Volume (vph)	334	1106	119	119	1231	124	140	235	17	172	354	329
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.1	4.6	4.6	4.1	4.6		4.5	4.5		4.5	4.5	4.5
Lane Util. Factor	0.97	0.95	1.00	1.00	0.91		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	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		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3502	3610	1576	1805	5101		1805	3569		1805	3610	1549
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3502	3610	1576	1805	5101		1805	3569		1805	3610	1549
Peak-hour factor, PHF	0.96	0.96	0.96	0.92	0.92	0.92	0.78	0.78	0.78	0.91	0.91	0.91
Adj. Flow (vph)	348	1152	124	129	1338	135	179	301	22	189	389	362
RTOR Reduction (vph)	0	0	45	0	5	0	0	4	0	0	0	225
Lane Group Flow (vph)	348	1152	79	129	1468	0	179	319	0	189	389	137
Confl. Peds. (#/hr)	12		4	4		12	15					15
Confl. Bikes (#/hr)			12						2			6
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2									4
Actuated Green, G (s)	20.1	90.9	90.9	18.1	88.9		17.9	19.6		23.7	25.4	25.4
Effective Green, g (s)	20.1	90.9	90.9	18.1	88.9		17.9	19.6		23.7	25.4	25.4
Actuated g/C Ratio	0.12	0.53	0.53	0.11	0.52		0.11	0.12		0.14	0.15	0.15
Clearance Time (s)	4.1	4.6	4.6	4.1	4.6		4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	2.0	4.0	4.0	2.0	4.0		2.0	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	414	1930	842	192	2667		190	411		251	539	231
v/s Ratio Prot	c0.10	c0.32		c0.07	0.29		c0.10	0.09		0.10	c0.11	
v/s Ratio Perm			0.05									0.09
v/c Ratio	0.84	0.60	0.09	0.67	0.55		0.94	0.78		0.75	0.72	0.59
Uniform Delay, d1	73.4	27.0	19.4	73.1	27.2		75.5	73.1		70.3	68.9	67.5
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	13.7	1.4	0.2	7.1	0.8		48.2	8.2		10.8	4.0	2.7
Delay (s)	87.1	28.4	19.6	80.2	28.0		123.8	81.3		81.1	73.0	70.2
Level of Service	F	C	B	F	C		F	F		F	E	E
Approach Delay (s/veh)		40.3			32.2			96.4			73.5	
Approach LOS		D			C			F			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	50.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	17.7
Intersection Capacity Utilization	81.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	5	456	1	0	514
Future Volume (Veh/h)	0	5	456	1	0	514
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.62	0.62	0.90	0.90	0.84	0.84
Hourly flow rate (vph)	0	8	507	1	0	612
Pedestrians	5					1
Lane Width (ft)	12.0					12.0
Walking Speed (ft/s)	3.5					3.5
Percent Blockage	0					0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						757
pX, platoon unblocked	0.90					
vC, conflicting volume	818	260			512	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	586	260			512	
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	99			100	
cM capacity (veh/h)	401	741			1059	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	8	254	254	1	306	306
Volume Left	0	0	0	0	0	0
Volume Right	8	0	0	1	0	0
cSH	741	1700	1700	1700	1700	1700
Volume to Capacity	0.01	0.15	0.15	0.00	0.18	0.18
Queue Length 95th (ft)	1	0	0	0	0	0
Control Delay (s/veh)	9.9	0.0	0.0	0.0	0.0	0.0
Lane LOS	A					
Approach Delay (s/veh)	9.9	0.0			0.0	
Approach LOS	A					

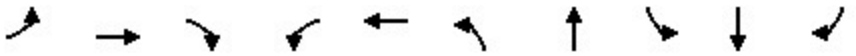
Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	24.5%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	23	91	90	8	599	23	490
v/c Ratio	0.04	0.17	0.17	0.01	0.35	0.04	0.26
Control Delay (s/veh)	21.6	23.8	23.8	26.3	14.0	26.0	11.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	21.6	23.8	23.8	26.3	14.0	26.0	11.6
Queue Length 50th (ft)	2	15	15	1	34	4	28
Queue Length 95th (ft)	21	74	73	15	156	31	137
Internal Link Dist (ft)	129		279		2529		1804
Turn Bay Length (ft)		155		70		100	
Base Capacity (vph)	1330	1282	1278	654	2619	973	2965
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.07	0.07	0.01	0.23	0.02	0.17

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	8	6	132	6	6	7	380	141	21	432	14
Future Volume (vph)	3	8	6	132	6	6	7	380	141	21	432	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.2	5.2		4.6	4.6		4.6	4.6	
Lane Util. Factor		1.00		0.95	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		0.99		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		0.95		1.00	0.99		1.00	0.96		1.00	1.00	
Flt Protected		0.99		0.95	0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1773		1715	1708		1805	3448		1805	3590	
Flt Permitted		0.99		0.95	0.96		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1773		1715	1708		1805	3448		1805	3590	
Peak-hour factor, PHF	0.71	0.71	0.71	0.80	0.80	0.80	0.87	0.87	0.87	0.91	0.91	0.91
Adj. Flow (vph)	4	11	8	165	8	8	8	437	162	23	475	15
RTOR Reduction (vph)	0	8	0	0	0	0	0	22	0	0	1	0
Lane Group Flow (vph)	0	15	0	91	90	0	8	577	0	23	489	0
Confl. Peds. (#/hr)	5		11	11		5	6		5	5		6
Confl. Bikes (#/hr)			4			2			4			4
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)		2.5		8.4	8.4		1.2	20.9		2.5	22.2	
Effective Green, g (s)		2.5		8.4	8.4		1.2	20.9		2.5	22.2	
Actuated g/C Ratio		0.05		0.16	0.16		0.02	0.39		0.05	0.41	
Clearance Time (s)		5.0		5.2	5.2		4.6	4.6		4.6	4.6	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	4.0		3.0	4.0	
Lane Grp Cap (vph)		82		268	267		40	1341		84	1484	
v/s Ratio Prot		c0.01		c0.05	0.05		0.00	c0.17		c0.01	0.14	
v/s Ratio Perm												
v/c Ratio		0.19		0.34	0.34		0.20	0.43		0.27	0.33	
Uniform Delay, d1		24.6		20.2	20.2		25.8	12.0		24.7	10.7	
Progression Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.1		0.8	0.8		2.5	0.3		1.8	0.2	
Delay (s)		25.7		20.9	20.9		28.2	12.3		26.5	10.9	
Level of Service		C		C	C		C	B		C	B	
Approach Delay (s/veh)		25.7			20.9			12.5			11.6	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	13.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	53.7	Sum of lost time (s)	19.4
Intersection Capacity Utilization	41.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	348	1152	124	129	1473	179	323	189	389	362
v/c Ratio	0.84	0.60	0.14	0.68	0.55	0.95	0.78	0.76	0.72	0.79
Control Delay (s/veh)	91.8	29.6	6.8	91.2	29.1	126.0	85.0	89.1	76.2	31.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	91.8	29.6	6.8	91.2	29.1	126.0	85.0	89.1	76.2	31.4
Queue Length 50th (ft)	197	442	14	141	390	201	184	208	223	110
Queue Length 95th (ft)	255	600	56	#227	512	#282	200	289	261	224
Internal Link Dist (ft)		343			461		677		208	
Turn Bay Length (ft)	190			200		225				
Base Capacity (vph)	453	1933	872	191	2674	191	717	329	998	620
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.60	0.14	0.68	0.55	0.94	0.45	0.57	0.39	0.58

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	334	1106	119	119	1231	124	140	235	17	172	354	329
Future Volume (vph)	334	1106	119	119	1231	124	140	235	17	172	354	329
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.1	4.6	4.6	4.1	4.6		4.5	4.5		4.5	4.5	4.5
Lane Util. Factor	0.97	0.95	1.00	1.00	0.91		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.96	1.00	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		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3502	3610	1550	1805	5101		1805	3569		1805	3610	1549
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3502	3610	1550	1805	5101		1805	3569		1805	3610	1549
Peak-hour factor, PHF	0.96	0.96	0.96	0.92	0.92	0.92	0.78	0.78	0.78	0.91	0.91	0.91
Adj. Flow (vph)	348	1152	124	129	1338	135	179	301	22	189	389	362
RTOR Reduction (vph)	0	0	45	0	5	0	0	4	0	0	0	225
Lane Group Flow (vph)	348	1152	79	129	1468	0	179	319	0	189	389	137
Confl. Peds. (#/hr)	12		4	4		12	15					15
Confl. Bikes (#/hr)			12						2			6
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2									4
Actuated Green, G (s)	20.1	90.9	90.9	18.1	88.9		17.9	19.6		23.7	25.4	25.4
Effective Green, g (s)	20.1	90.9	90.9	18.1	88.9		17.9	19.6		23.7	25.4	25.4
Actuated g/C Ratio	0.12	0.53	0.53	0.11	0.52		0.11	0.12		0.14	0.15	0.15
Clearance Time (s)	4.1	4.6	4.6	4.1	4.6		4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	2.0	4.0	4.0	2.0	4.0		2.0	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	414	1930	828	192	2667		190	411		251	539	231
v/s Ratio Prot	c0.10	c0.32		c0.07	0.29		c0.10	0.09		0.10	c0.11	
v/s Ratio Perm			0.05									0.09
v/c Ratio	0.84	0.60	0.10	0.67	0.55		0.94	0.78		0.75	0.72	0.59
Uniform Delay, d1	73.4	27.0	19.4	73.1	27.2		75.5	73.1		70.3	68.9	67.5
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	13.7	1.4	0.2	7.1	0.8		48.2	8.2		10.8	4.0	2.7
Delay (s)	87.1	28.4	19.6	80.2	28.0		123.8	81.3		81.1	73.0	70.2
Level of Service	F	C	B	F	C		F	F		F	E	E
Approach Delay (s/veh)		40.3			32.2			96.4			73.5	
Approach LOS		D			C			F			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	50.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	17.7
Intersection Capacity Utilization	81.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	5	456	1	0	514
Future Volume (Veh/h)	0	5	456	1	0	514
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.62	0.62	0.90	0.90	0.84	0.84
Hourly flow rate (vph)	0	8	507	1	0	612
Pedestrians	5					1
Lane Width (ft)	12.0					12.0
Walking Speed (ft/s)	3.5					3.5
Percent Blockage	0					0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						757
pX, platoon unblocked	0.86					
vC, conflicting volume	1124	513			512	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1065	513			512	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	99			100	
cM capacity (veh/h)	214	562			1059	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1
Volume Total	8	507	1	612
Volume Left	0	0	0	0
Volume Right	8	0	1	0
cSH	562	1700	1700	1700
Volume to Capacity	0.01	0.30	0.00	0.36
Queue Length 95th (ft)	1	0	0	0
Control Delay (s/veh)	11.5	0.0	0.0	0.0
Lane LOS	B			
Approach Delay (s/veh)	11.5	0.0		0.0
Approach LOS	B			

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	37.4%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	23	91	90	8	599	23	490
v/c Ratio	0.04	0.17	0.17	0.01	0.35	0.04	0.26
Control Delay (s/veh)	21.6	23.8	23.8	26.3	14.0	26.0	11.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	21.6	23.8	23.8	26.3	14.0	26.0	11.6
Queue Length 50th (ft)	2	15	15	1	34	4	28
Queue Length 95th (ft)	21	74	73	15	156	31	137
Internal Link Dist (ft)	129		279		2529		1804
Turn Bay Length (ft)		155		70		100	
Base Capacity (vph)	1330	1282	1276	654	2619	973	2965
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.07	0.07	0.01	0.23	0.02	0.17

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	8	6	132	6	6	7	380	141	21	432	14
Future Volume (vph)	3	8	6	132	6	6	7	380	141	21	432	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.2	5.2		4.6	4.6		4.6	4.6	
Lane Util. Factor		1.00		0.95	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		0.99		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		0.95		1.00	0.99		1.00	0.96		1.00	1.00	
Flt Protected		0.99		0.95	0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1773		1715	1706		1805	3448		1805	3590	
Flt Permitted		0.99		0.95	0.96		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1773		1715	1706		1805	3448		1805	3590	
Peak-hour factor, PHF	0.71	0.71	0.71	0.80	0.80	0.80	0.87	0.87	0.87	0.91	0.91	0.91
Adj. Flow (vph)	4	11	8	165	8	8	8	437	162	23	475	15
RTOR Reduction (vph)	0	8	0	0	0	0	0	22	0	0	1	0
Lane Group Flow (vph)	0	15	0	91	90	0	8	577	0	23	489	0
Confl. Peds. (#/hr)	5		11	11		5	6		5	5		6
Confl. Bikes (#/hr)			4			2			4			4
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Split	NA		Split	NA		Prot	NA		Prot	NA	
Protected Phases	4	4		3	3		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)		2.5		8.4	8.4		1.2	20.9		2.5	22.2	
Effective Green, g (s)		2.5		8.4	8.4		1.2	20.9		2.5	22.2	
Actuated g/C Ratio		0.05		0.16	0.16		0.02	0.39		0.05	0.41	
Clearance Time (s)		5.0		5.2	5.2		4.6	4.6		4.6	4.6	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	4.0		3.0	4.0	
Lane Grp Cap (vph)		82		268	266		40	1341		84	1484	
v/s Ratio Prot		c0.01		c0.05	0.05		0.00	c0.17		c0.01	0.14	
v/s Ratio Perm												
v/c Ratio		0.19		0.34	0.34		0.20	0.43		0.27	0.33	
Uniform Delay, d1		24.6		20.2	20.2		25.8	12.0		24.7	10.7	
Progression Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.1		0.8	0.8		2.5	0.3		1.8	0.2	
Delay (s)		25.7		20.9	20.9		28.2	12.3		26.5	10.9	
Level of Service		C		C	C		C	B		C	B	
Approach Delay (s/veh)		25.7			20.9			12.5			11.6	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	13.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	53.7	Sum of lost time (s)	19.4
Intersection Capacity Utilization	41.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			