APPENDIX A: CONCEPTUAL LAYOUT PLANS

SAN DIEGO

ASSOCIATION OF GOVERNMENTS

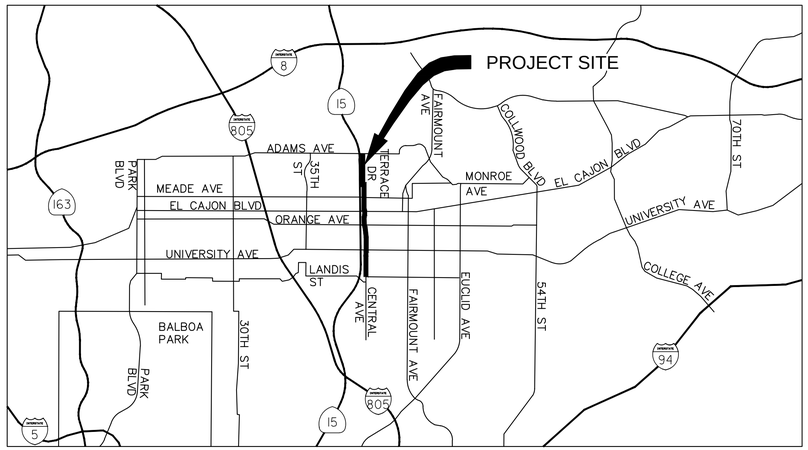
CONCEPTUAL LAYOUT PLANS FOR CENTRAL AVENUE BIKEWAY

SANDAG

OCTOBER 2017

CONCEPTUAL LAYOUT PLANS FOR CENTRAL AVENUE BIKEWAY

CENTRAL AVENUE BIKEWAY



VICINITY MAP

NOT TO SCALE

SHEET INDEX	
Sheet Num	Sheet Title
1	TITLE SHEET
2	KEY MAP
3–5	TYPICAL CROSS SECTIONS
6–10	CONCEPTUAL LAYOUT PLANS

CONCEPTUAL LAYOUT PLANS

ENGINEERING DEPARTMENT

AS-BUILT

REVISIONS	BY	APPROVED	DATE

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CENTRAL AVENUE BIKEWAY

REGISTERED PROFESSIONAL ENGINEER — EDWARD E. ESPELETA — No. 71532 — CIVIL — STATE OF CALIFORNIA

CONCEPTUAL LAYOUT PLANS FOR:

CENTRAL AVENUE BIKEWAY

TITLE SHEET

XXXXXX
ASSISTANT DIRECTOR OF
ENGINEERING AND PUBLIC WORKS

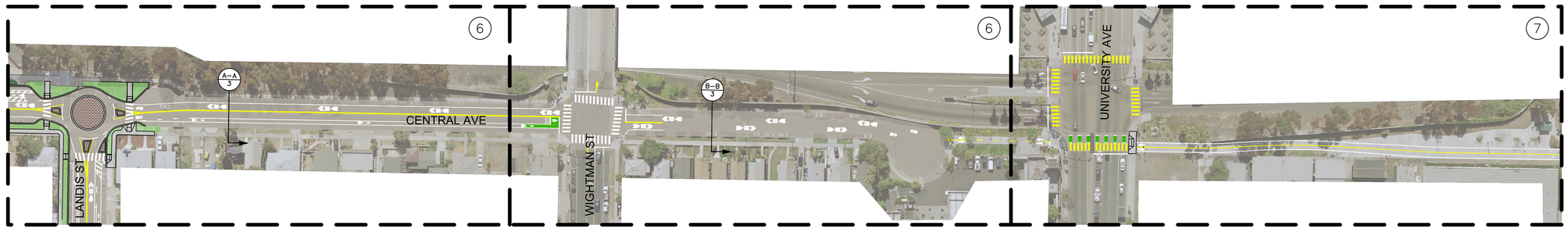
DATE

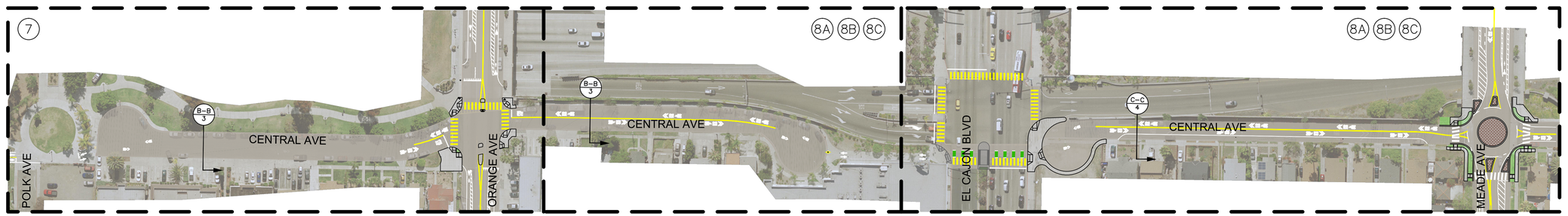
PROJECT NO. 095811049	SPECIFICATION NO.
SHEET 1 OF 10 SHEETS	XXXXXX D

KEY MAP

LEGEND

- (X) SHEET NUMBER IDENTIFICATION
- (X / XX) SECTION LETTER / SHEET NUMBER

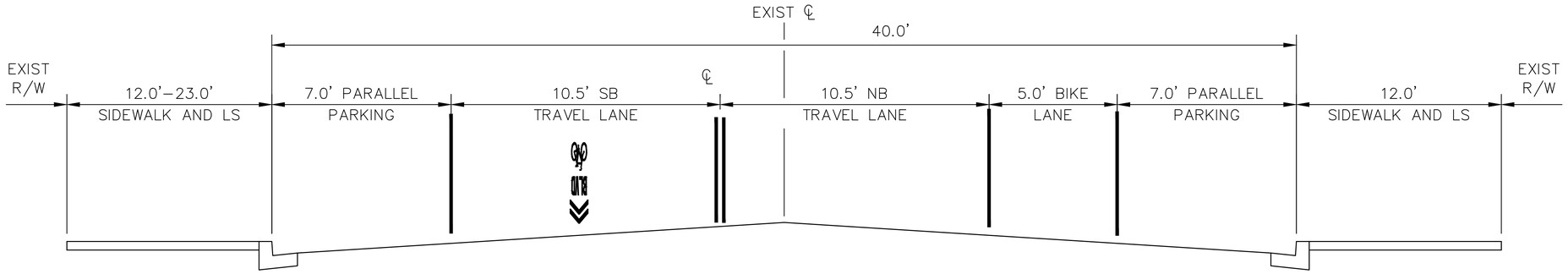




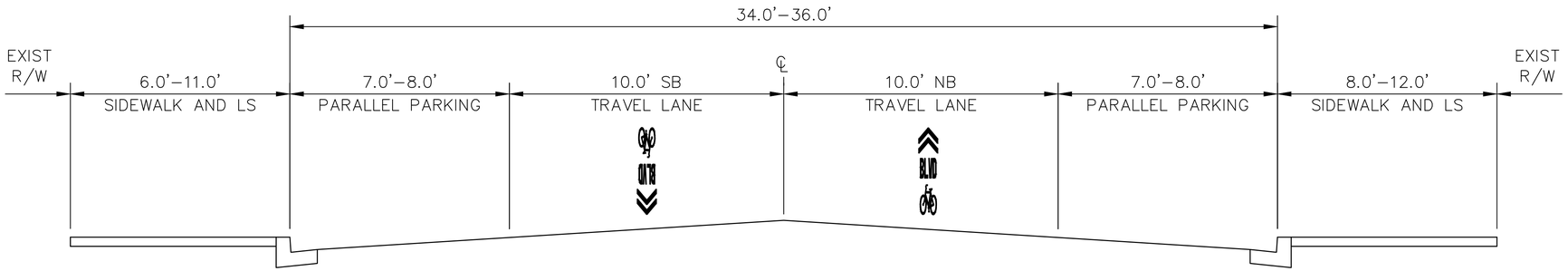
NORTH

GRAPHIC SCALE IN FEET
0 40 80 160

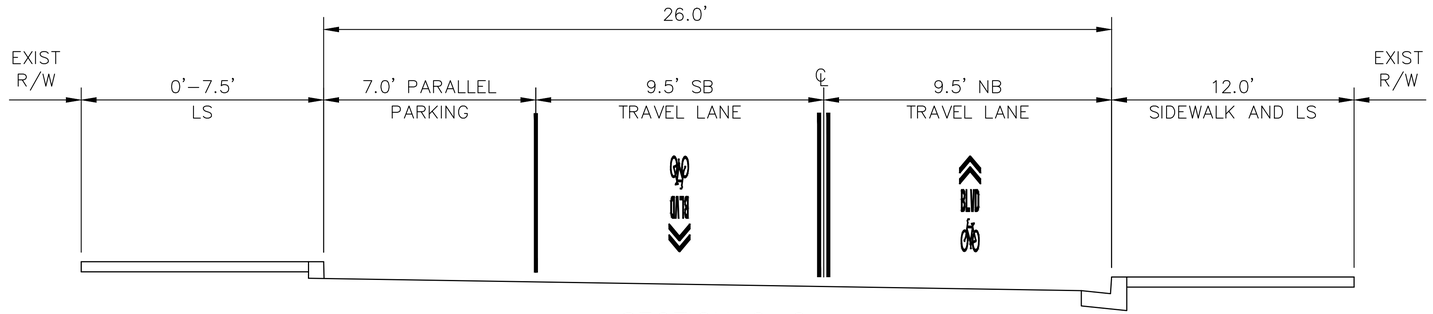
CENTRAL AVENUE BIKEWAY



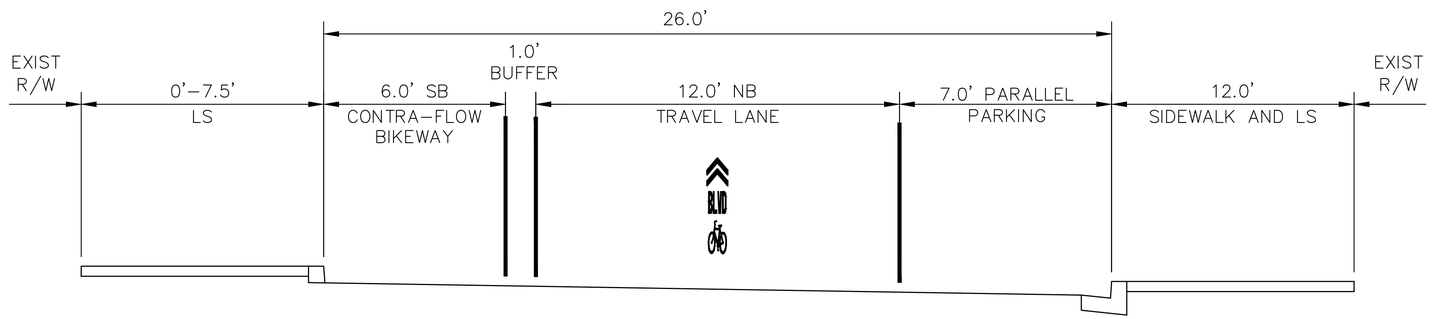
SECTION A–A:
PROPOSED BIKE BOULEVARD ON CENTRAL AVE BETWEEN LANDIS ST AND WIGHTMAN ST (CLASS II/III)



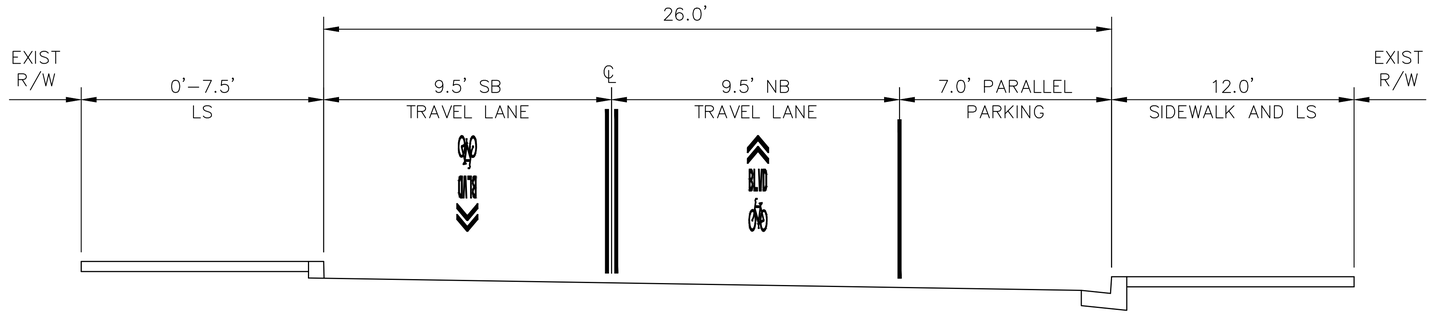
SECTION B–B:
PROPOSED BIKE BOULEVARD ON CENTRAL AVE AND TERRACE DR (CLASS III)



SECTION C–C:
PROPOSED BIKE BOULEVARD ON CENTRAL AVE BETWEEN EL CAJON BLVD AND MEADE AVE (CLASS III)
OPTION 1



SECTION C–C:
PROPOSED BIKE BOULEVARD ON CENTRAL AVE BETWEEN EL CAJON BLVD AND MEADE AVE (CONTRA–FLOW PROTECTED BIKEWAY/CLASS III)
OPTION 2



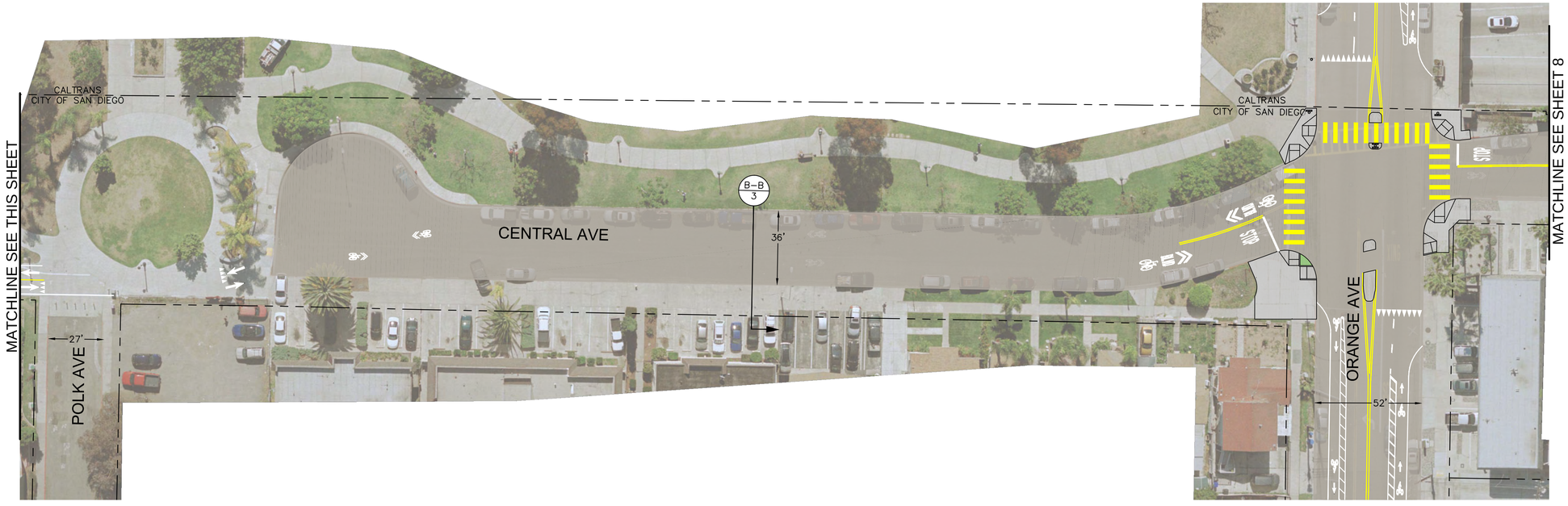
SECTION C–C:
PROPOSED BIKE BOULEVARD ON CENTRAL AVE BETWEEN EL CAJON BLVD AND MEADE AVE (CLASS III)
OPTION 3

NORTH

GRAPHIC SCALE IN FEET
0 15 30 60

GO byBIKE

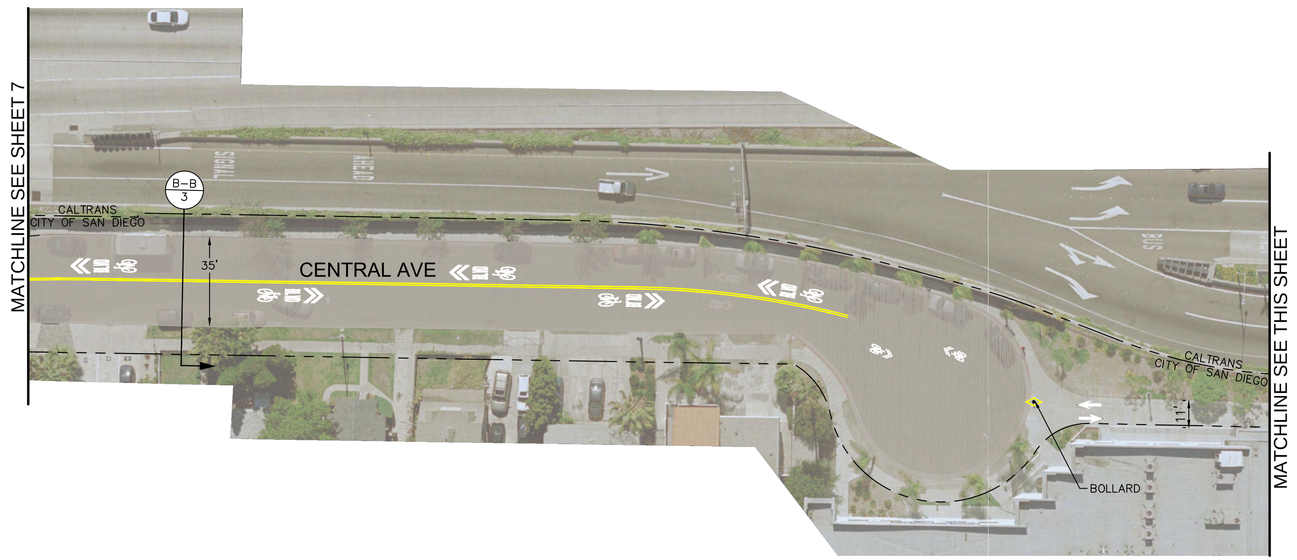
CENTRAL AVENUE BIKEWAY



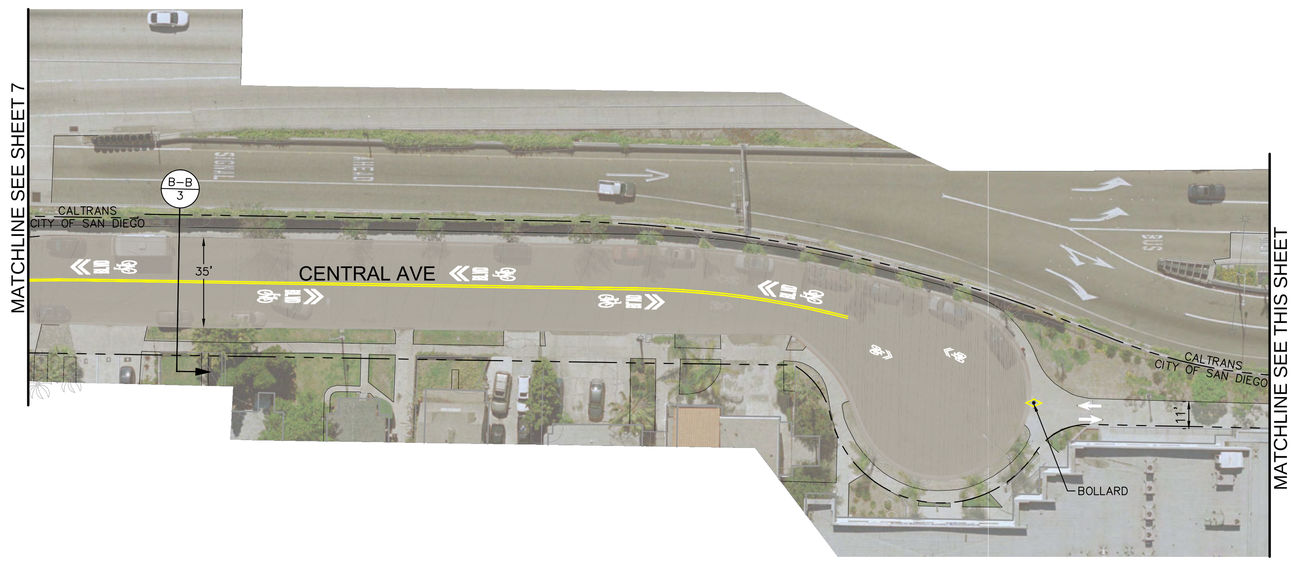
NORTH

GRAPHIC SCALE IN FEET
0 15 30 60

CENTRAL AVENUE BIKEWAY



CENTRAL AVENUE BIKEWAY



CENTRAL AVENUE BIKEWAY

CENTRAL AVENUE BIKEWAY

NORTH

GRAPHIC SCALE IN FEET
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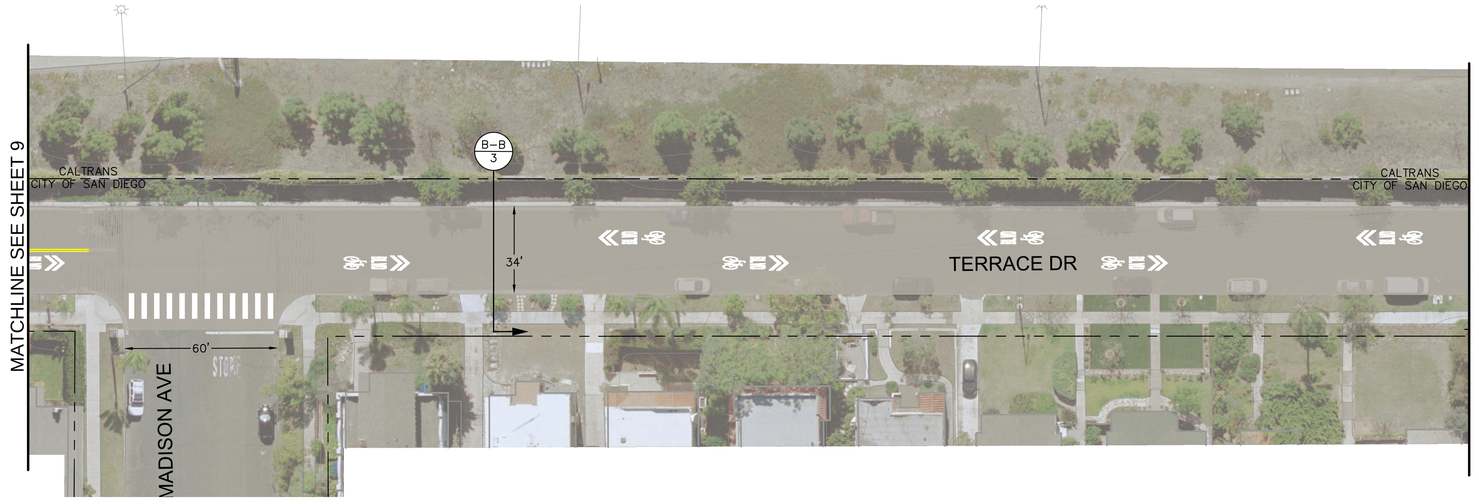
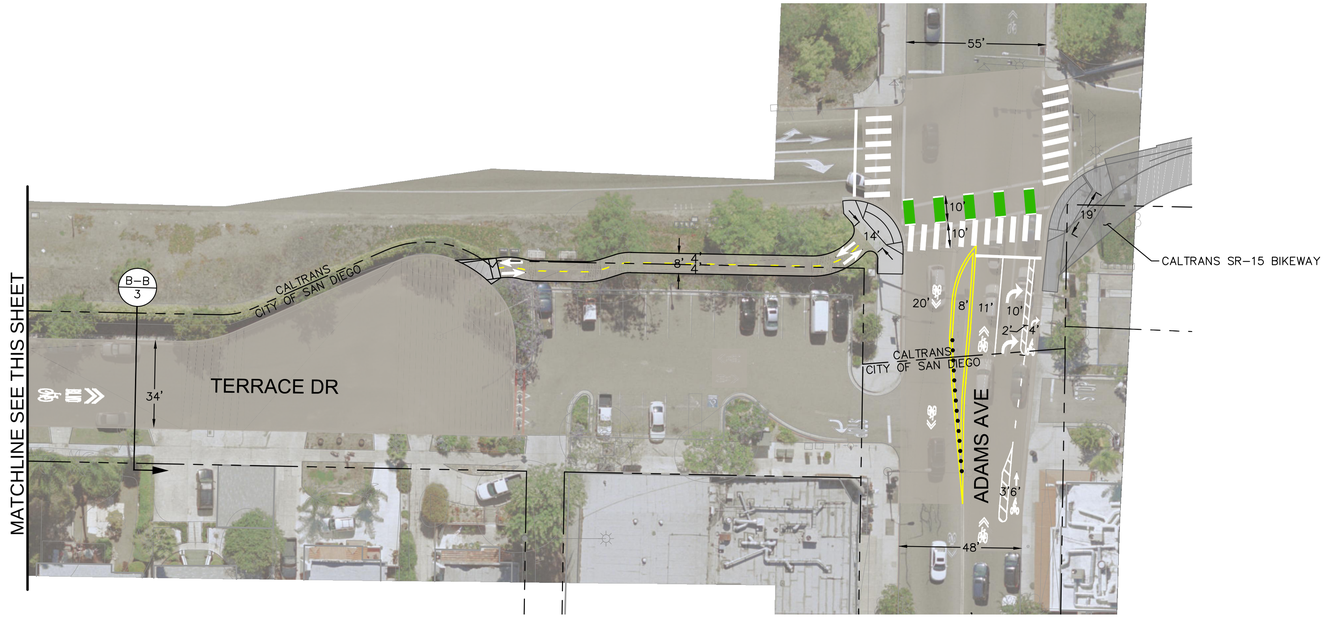




NORTH

GRAPHIC SCALE IN FEET
0 15 30 60

CENTRAL AVENUE BIKEWAY

APPENDIX B: TRAFFIC COUNTS

FEHR PEERS

Turn Count Summary

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136

Location: Adams Ave @ SR-15 NB Ramps

Date of Count: *Tuesday, December 15, 2015*

Analysts: *LV/CD*

Weather: *Sunny*

AVC Proj No: *15-0462*

FEHR PEERS

Turn Count Summary

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136

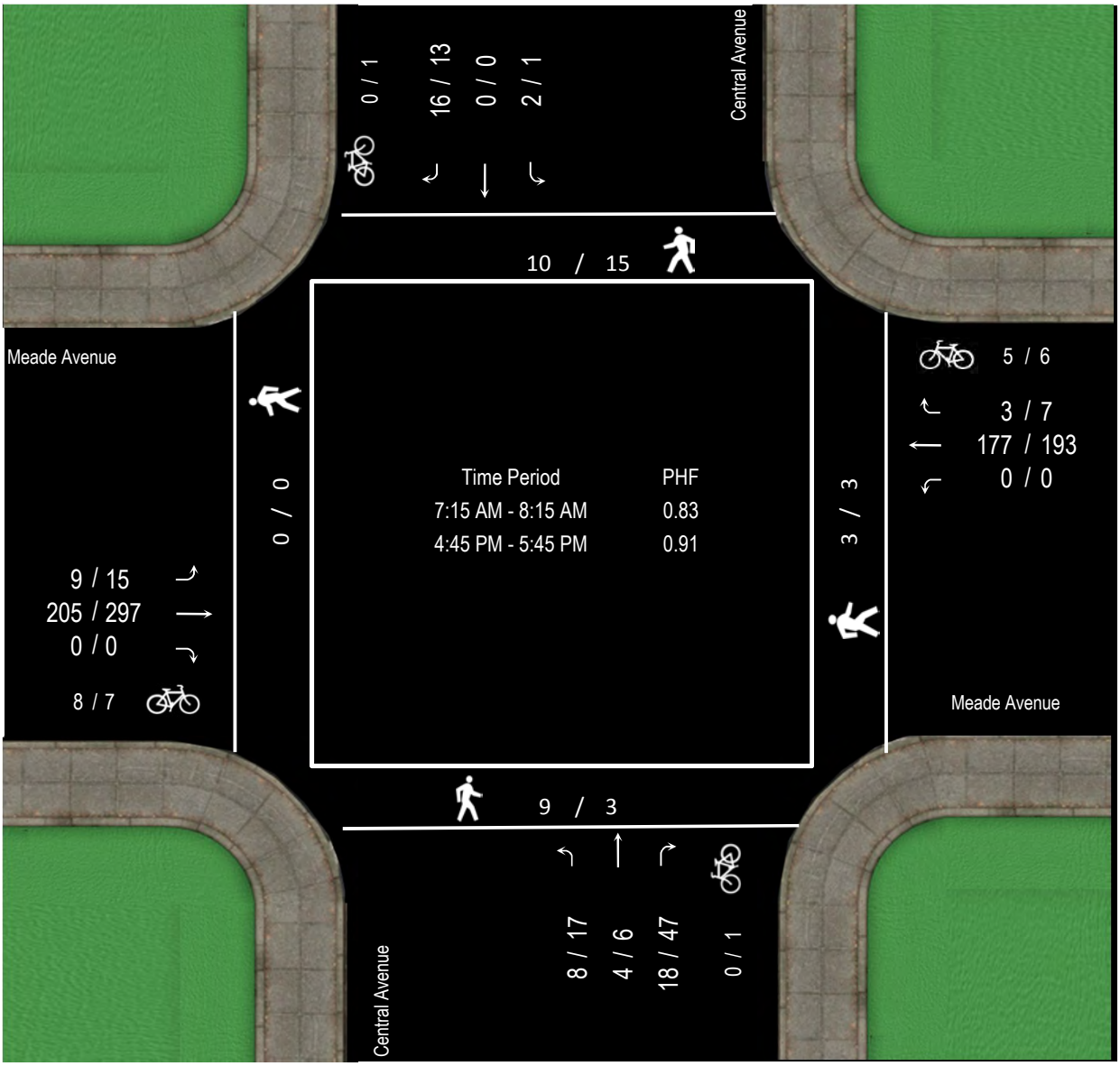
Location: Meade Avenue @ Central Avenue

Date of Count: *Tuesday, December 15, 2015*

Analysts: *LV/CD*

Weather: *Sunny*

AVC Proj No: *15-0462*



FEHR PEERS

Turn Count Summary

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136

Location: El Cajon Blvd @ SR-15 NB Ramps-Central Avenue

Date of Count: *Tuesday, December 15, 2015*

Analysts: *LV/CD*

Weather: *Sunny*

AVC Proj No: *15-0462*

FEHR PEERS

Turn Count Summary

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136

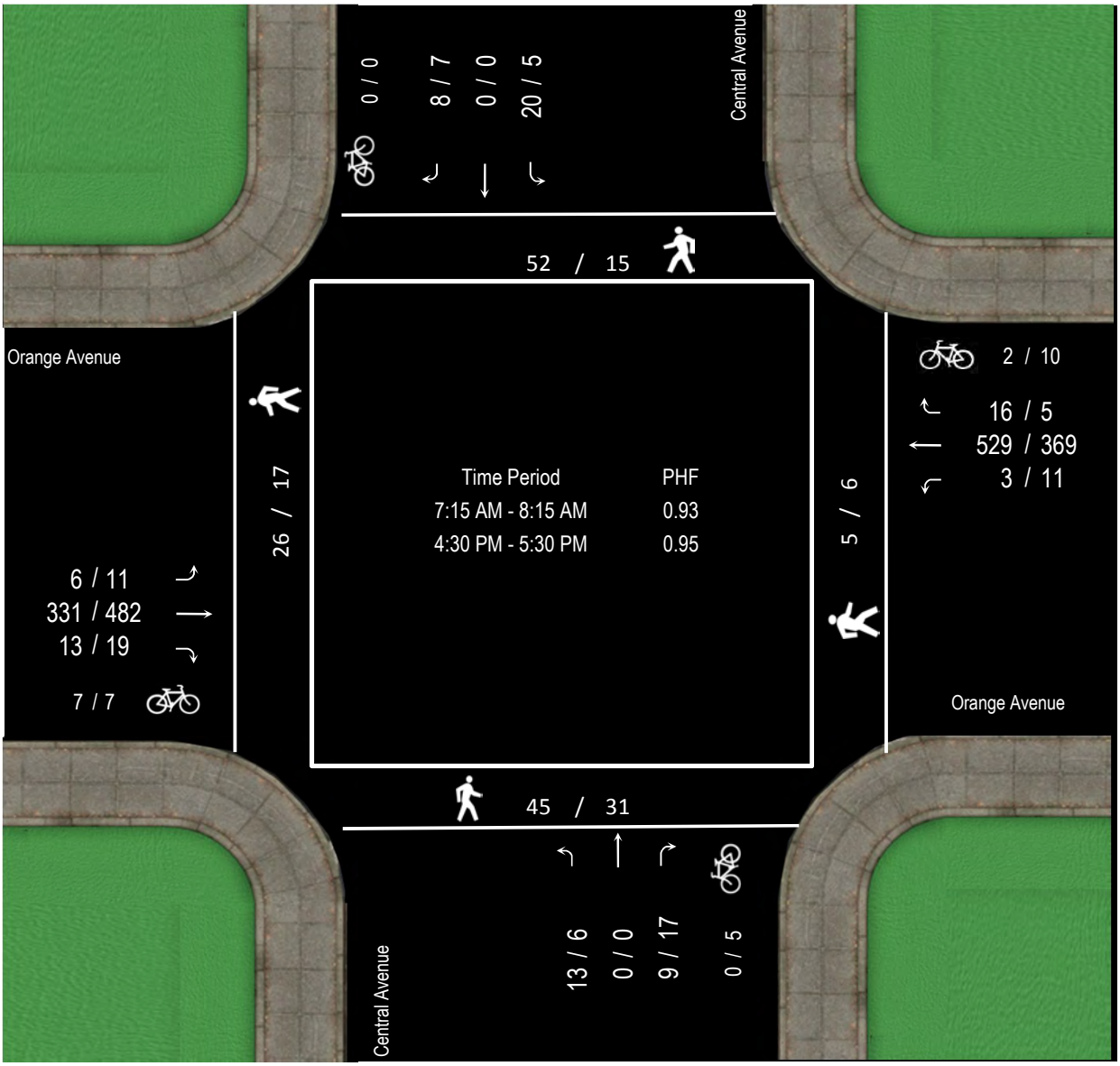
Location: Orange Avenue @ Central Avenue

Date of Count: *Tuesday, December 15, 2015*

Analysts: *LV/CD*

Weather: *Sunny*

AVC Proj No: *15-0462*



FEHR PEERS

Turn Count Summary

Accurate Video Counts Inc
info@accuratevideocounts.com
(619) 987-5136

Location: University Avenue @ SR-15 NB Ramps

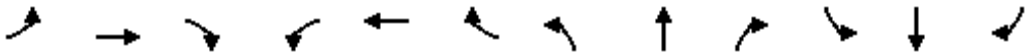
Date of Count: *Tuesday, December 15, 2015*

Analysts: *LV/CD*

Weather: *Sunny*

AVC Proj No: *15-0462*

APPENDIX C: LEVEL OF SERVICE CALCULATION SHEETS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	408	262	0	0	473	421	149	0	89	0	0	0
Future Volume (vph)	408	262	0	0	473	421	149	0	89	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	6.0			6.0	6.0		5.1	5.1			
Lane Util. Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Frpb, ped/bikes	1.00	1.00			1.00	0.95		1.00	1.00			
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)	1770	1863			1863	1501		1770	1583			
Flt Permitted	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (perm)	1770	1863			1863	1501		1770	1583			
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)	434	279	0	0	503	448	159	0	95	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	81	0	0	0
Lane Group Flow (vph)	434	279	0	0	503	448	0	159	14	0	0	0
Confl. Peds. (#/hr)	1		1			11	1					
Confl. Bikes (#/hr)			9			4						
Turn Type	Prot	NA			NA	Perm	Split	NA	Perm			
Protected Phases	5	2			6		4	4				
Permitted Phases						6			4			
Actuated Green, G (s)	30.1	73.5			38.7	38.7		14.4	14.4			
Effective Green, g (s)	30.1	73.5			38.7	38.7		14.4	14.4			
Actuated g/C Ratio	0.30	0.74			0.39	0.39		0.15	0.15			
Clearance Time (s)	4.7	6.0			6.0	6.0		5.1	5.1			
Vehicle Extension (s)	3.0	2.0			2.0	2.0		2.0	2.0			
Lane Grp Cap (vph)	538	1383			728	586		257	230			
v/s Ratio Prot	c0.25	0.15			0.27			c0.09				
v/s Ratio Perm						c0.30			0.01			
v/c Ratio	0.81	0.20			0.69	0.76		0.62	0.06			
Uniform Delay, d1	31.8	3.9			25.2	26.2		39.7	36.5			
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Incremental Delay, d2	8.6	0.0			2.3	5.3		3.1	0.0			
Delay (s)	40.4	3.9			27.5	31.5		42.8	36.5			
Level of Service	D	A			C	C		D	D			
Approach Delay (s)		26.1			29.4			40.5			0.0	
Approach LOS		C			C			D			A	

Intersection Summary			
HCM 2000 Control Delay	29.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	99.0	Sum of lost time (s)	15.8
Intersection Capacity Utilization	71.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

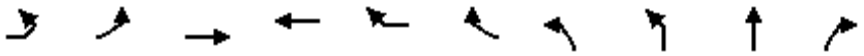
Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	205	0	0	193	7	8	4	18	1	0	3
Future Vol, veh/h	9	205	0	0	193	7	8	4	18	1	0	3
Conflicting Peds, #/hr	10	0	9	9	0	10	0	0	3	3	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	125	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	247	0	0	233	8	10	5	22	1	0	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	251	0	-	-	-	0	508	520	250	532	516	247
Stage 1	-	-	-	-	-	-	269	269	-	247	247	-
Stage 2	-	-	-	-	-	-	239	251	-	285	269	-
Critical Hdwy	4.12	-	-	-	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1314	-	0	0	-	-	475	461	789	458	463	792
Stage 1	-	-	0	0	-	-	737	687	-	757	702	-
Stage 2	-	-	0	0	-	-	764	699	-	722	687	-
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	1314	-	-	-	-	-	470	453	787	434	455	785
Mov Cap-2 Maneuver	-	-	-	-	-	-	470	453	-	434	455	-
Stage 1	-	-	-	-	-	-	731	681	-	744	696	-
Stage 2	-	-	-	-	-	-	760	693	-	690	681	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0	11.2	10.6
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	616	1314	-	-	-	653
HCM Lane V/C Ratio	0.059	0.008	-	-	-	0.007
HCM Control Delay (s)	11.2	7.8	-	-	-	10.6
HCM Lane LOS	B	A	-	-	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	-	0



Movement	EBL2	EBL	EBT	WBT	WBR	WBR2	NBL2	NBL	NBT	NBR
Lane Configurations										
Traffic Volume (vph)	257	16	362	766	293	2	223	15	54	223
Future Volume (vph)	257	16	362	766	293	2	223	15	54	223
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.7	5.5	5.5	5.5		6.1	6.1	6.1	6.1
Lane Util. Factor		1.00	0.91	0.86	1.00		0.97	1.00	0.95	0.95
Frpb, ped/bikes		1.00	1.00	1.00	0.81		1.00	1.00	0.94	0.90
Flpb, ped/bikes		1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00
Frt		1.00	1.00	1.00	0.85		1.00	1.00	0.91	0.85
Flt Protected		0.95	1.00	1.00	1.00		0.95	0.95	1.00	1.00
Satd. Flow (prot)		1770	5085	6408	1153		3433	1770	1508	1359
Flt Permitted		0.95	1.00	1.00	1.00		0.95	0.95	1.00	1.00
Satd. Flow (perm)		1770	5085	6408	1153		3433	1770	1508	1359
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	279	17	393	833	318	2	242	16	59	242
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	46	130
Lane Group Flow (vph)	0	296	393	833	320	0	242	16	110	15
Confl. Peds. (#/hr)					38	38				29
Confl. Bikes (#/hr)					4	4				
Parking (#/hr)					0					
Turn Type	Prot	Prot	NA	NA	Perm		Split	Split	NA	Perm
Protected Phases	5	5	2	6			8	8	8	
Permitted Phases					6					8
Actuated Green, G (s)		26.0	64.3	33.6	33.6		13.1	13.1	13.1	13.1
Effective Green, g (s)		26.0	64.3	33.6	33.6		13.1	13.1	13.1	13.1
Actuated g/C Ratio		0.20	0.49	0.26	0.26		0.10	0.10	0.10	0.10
Clearance Time (s)		4.7	5.5	5.5	5.5		6.1	6.1	6.1	6.1
Vehicle Extension (s)		2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0
Lane Grp Cap (vph)		354	2515	1656	298		345	178	151	136
v/s Ratio Prot		c0.17	0.08	0.13			0.07	0.01	c0.07	
v/s Ratio Perm					c0.28					0.01
v/c Ratio		0.84	0.16	0.50	1.07		0.70	0.09	0.73	0.11
Uniform Delay, d1		50.0	18.0	41.1	48.2		56.6	53.0	56.7	53.1
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2		15.0	0.1	1.1	73.1		5.2	0.1	13.8	0.1
Delay (s)		64.9	18.1	42.2	121.3		61.8	53.1	70.6	53.3
Level of Service		E	B	D	F		E	D	E	D
Approach Delay (s)			38.2	64.1					61.8	
Approach LOS			D	E					E	

Intersection Summary			
HCM 2000 Control Delay	56.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.3
Intersection Capacity Utilization	62.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

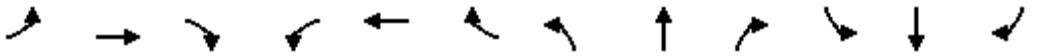
Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	331	13	3	529	16	13	0	9	20	0	8
Future Vol, veh/h	6	331	13	3	529	16	13	0	9	20	0	8
Conflicting Peds, #/hr	52	0	45	45	0	52	26	0	5	5	0	26
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	125	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	356	14	3	569	17	14	0	10	22	0	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	638	0	0	415	0	0	1035	1065	413	1022	1064	655
Stage 1	-	-	-	-	-	-	421	421	-	636	636	-
Stage 2	-	-	-	-	-	-	614	644	-	386	428	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	946	-	-	1144	-	-	210	223	639	214	223	466
Stage 1	-	-	-	-	-	-	610	589	-	466	472	-
Stage 2	-	-	-	-	-	-	479	468	-	637	585	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	926	-	-	1139	-	-	192	203	612	199	203	436
Mov Cap-2 Maneuver	-	-	-	-	-	-	192	203	-	199	203	-
Stage 1	-	-	-	-	-	-	583	563	-	443	450	-
Stage 2	-	-	-	-	-	-	458	447	-	620	559	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0	19.8	22.5
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	267	926	-	-	1139	-	-	236
HCM Lane V/C Ratio	0.089	0.007	-	-	0.003	-	-	0.128
HCM Control Delay (s)	19.8	8.9	-	-	8.2	-	-	22.5
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	0.4



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	250	441	0	0	527	514	231	6	278	0	0	0
Future Volume (vph)	250	441	0	0	527	514	231	6	278	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1200	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	5.5			5.5	5.5	5.1	5.1	5.1			
Lane Util. Factor	1.00	0.95			0.86	0.86	0.97	1.00	0.88			
Frpb, ped/bikes	1.00	1.00			0.97	0.90	1.00	1.00	0.65			
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Frt	1.00	1.00			0.95	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	1770	3539			2795	1231	3433	1863	1817			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	1770	3539			2795	1231	3433	1863	1817			
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	253	445	0	0	532	519	233	6	281	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	251	0	0	0
Lane Group Flow (vph)	253	445	0	0	792	259	233	6	30	0	0	0
Confl. Peds. (#/hr)			70	70		57			70	70		
Confl. Bikes (#/hr)			1						1			1
Turn Type	Prot	NA			NA	Perm	Split	NA	Perm			
Protected Phases	5	2			6		8	8				
Permitted Phases						6			8			
Actuated Green, G (s)	31.0	68.7			33.0	33.0	13.7	13.7	13.7			
Effective Green, g (s)	31.0	68.7			33.0	33.0	13.7	13.7	13.7			
Actuated g/C Ratio	0.24	0.53			0.25	0.25	0.11	0.11	0.11			
Clearance Time (s)	4.7	5.5			5.5	5.5	5.1	5.1	5.1			
Vehicle Extension (s)	2.0	2.0			2.0	2.0	2.0	2.0	2.0			
Lane Grp Cap (vph)	422	1870			709	312	361	196	191			
v/s Ratio Prot	c0.14	0.13			c0.28		c0.07	0.00				
v/s Ratio Perm						0.21			0.02			
v/c Ratio	0.60	0.24			1.12	0.83	0.65	0.03	0.16			
Uniform Delay, d1	44.0	16.5			48.5	45.9	55.8	52.2	52.9			
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	1.5	0.3			70.7	21.9	3.0	0.0	0.1			
Delay (s)	45.5	16.8			119.2	67.8	58.8	52.2	53.0			
Level of Service	D	B			F	E	E	D	D			
Approach Delay (s)		27.2			106.5			55.6			0.0	
Approach LOS		C			F			E			A	

Intersection Summary			
HCM 2000 Control Delay	70.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	19.3
Intersection Capacity Utilization	56.4%	ICU Level of Service	B
Analysis Period (min)	15		

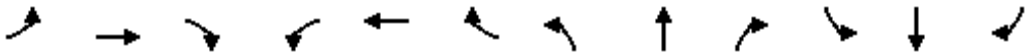
c Critical Lane Group

Intersection	
Intersection Delay, s/veh	14.3
Intersection LOS	B

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	42	72	366	144	48	180
Future Vol, veh/h	42	72	366	144	48	180
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	47	80	407	160	53	200
Number of Lanes	1	0	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	9.8	16.9	10.6
HCM LOS	A	C	B

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	37%	21%
Vol Thru, %	72%	0%	79%
Vol Right, %	28%	63%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	510	114	228
LT Vol	0	42	48
Through Vol	366	0	180
RT Vol	144	72	0
Lane Flow Rate	567	127	253
Geometry Grp	1	1	1
Degree of Util (X)	0.693	0.19	0.346
Departure Headway (Hd)	4.405	5.403	4.92
Convergence, Y/N	Yes	Yes	Yes
Cap	816	657	727
Service Time	2.454	3.49	2.985
HCM Lane V/C Ratio	0.695	0.193	0.348
HCM Control Delay	16.9	9.8	10.6
HCM Lane LOS	C	A	B
HCM 95th-tile Q	5.7	0.7	1.5



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	254	715	0	0	378	230	231	3	212	0	0	0
Future Volume (vph)	254	715	0	0	378	230	231	3	212	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	6.0			6.0	6.0		5.1	5.1			
Lane Util. Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Frpb, ped/bikes	1.00	1.00			1.00	0.94		1.00	0.96			
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)	1770	1863			1863	1492		1775	1525			
Flt Permitted	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (perm)	1770	1863			1863	1492		1775	1525			
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)	267	753	0	0	398	242	243	3	223	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	83	0	0	135	0	0	0
Lane Group Flow (vph)	267	753	0	0	398	159	0	246	88	0	0	0
Confl. Peds. (#/hr)			21			15			12			
Confl. Bikes (#/hr)			7			8						
Turn Type	Prot	NA			NA	Perm	Split	NA	Perm			
Protected Phases	5	2			6		4	4				
Permitted Phases						6			4			
Actuated Green, G (s)	18.2	46.0			23.1	23.1		16.7	16.7			
Effective Green, g (s)	18.2	46.0			23.1	23.1		16.7	16.7			
Actuated g/C Ratio	0.25	0.62			0.31	0.31		0.23	0.23			
Clearance Time (s)	4.7	6.0			6.0	6.0		5.1	5.1			
Vehicle Extension (s)	3.0	2.0			2.0	2.0		2.0	2.0			
Lane Grp Cap (vph)	436	1161			583	467		401	345			
v/s Ratio Prot	0.15	c0.40			0.21			c0.14				
v/s Ratio Perm						0.11			0.06			
v/c Ratio	0.61	0.65			0.68	0.34		0.61	0.26			
Uniform Delay, d1	24.7	8.8			22.1	19.5		25.7	23.4			
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Incremental Delay, d2	2.5	0.9			2.6	0.2		2.0	0.1			
Delay (s)	27.2	9.7			24.8	19.6		27.6	23.6			
Level of Service	C	A			C	B		C	C			
Approach Delay (s)		14.3			22.8			25.7			0.0	
Approach LOS		B			C			C			A	

Intersection Summary			
HCM 2000 Control Delay	19.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	73.8	Sum of lost time (s)	15.8
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

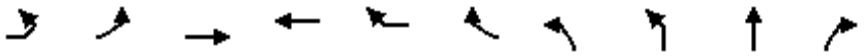
Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	297	0	0	193	7	17	6	47	1	0	13
Future Vol, veh/h	15	297	0	0	193	7	17	6	47	1	0	13
Conflicting Peds, #/hr	15	0	3	3	0	15	0	0	3	3	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	125	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	326	0	0	212	8	19	7	52	1	0	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	235	0	-	-	-	0	582	594	329	622	590	231
Stage 1	-	-	-	-	-	-	359	359	-	231	231	-
Stage 2	-	-	-	-	-	-	223	235	-	391	359	-
Critical Hdwy	4.12	-	-	-	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1332	-	0	0	-	-	424	418	712	399	420	808
Stage 1	-	-	0	0	-	-	659	627	-	772	713	-
Stage 2	-	-	0	0	-	-	780	710	-	633	627	-
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	1332	-	-	-	-	-	413	408	710	357	410	798
Mov Cap-2 Maneuver	-	-	-	-	-	-	413	408	-	357	410	-
Stage 1	-	-	-	-	-	-	651	619	-	753	704	-
Stage 2	-	-	-	-	-	-	766	701	-	572	619	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0	12.3	10
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	573	1332	-	-	-	733
HCM Lane V/C Ratio	0.134	0.012	-	-	-	0.021
HCM Control Delay (s)	12.3	7.7	-	-	-	10
HCM Lane LOS	B	A	-	-	-	B
HCM 95th %tile Q(veh)	0.5	0	-	-	-	0.1



Movement	EBL2	EBL	EBT	WBT	WBR	WBR2	NBL2	NBL	NBT	NBR
Lane Configurations										
Traffic Volume (vph)	169	69	362	644	244	7	127	12	49	364
Future Volume (vph)	169	69	362	644	244	7	127	12	49	364
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.7	5.5	5.5	5.5		6.1	6.1	6.1	6.1
Lane Util. Factor		1.00	0.91	0.86	1.00		0.97	1.00	0.95	0.95
Frpb, ped/bikes		1.00	1.00	1.00	0.82		1.00	1.00	0.91	0.89
Flpb, ped/bikes		1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00
Frt		1.00	1.00	1.00	0.85		1.00	1.00	0.89	0.85
Flt Protected		0.95	1.00	1.00	1.00		0.95	0.95	1.00	1.00
Satd. Flow (prot)		1770	5085	6408	1164		3433	1770	1432	1336
Flt Permitted		0.95	1.00	1.00	1.00		0.95	0.95	1.00	1.00
Satd. Flow (perm)		1770	5085	6408	1164		3433	1770	1432	1336
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	176	72	377	671	254	7	132	12	51	379
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	92	190
Lane Group Flow (vph)	0	248	377	671	261	0	132	13	126	22
Confl. Peds. (#/hr)					36	36				34
Confl. Bikes (#/hr)					5	5				1
Parking (#/hr)					0					
Turn Type	Prot	Prot	NA	NA	Perm		Split	Split	NA	Perm
Protected Phases	5	5	2	6			8	8	8	
Permitted Phases					6					8
Actuated Green, G (s)		20.0	63.1	38.4	38.4		13.3	13.3	13.3	13.3
Effective Green, g (s)		20.0	63.1	38.4	38.4		13.3	13.3	13.3	13.3
Actuated g/C Ratio		0.15	0.49	0.30	0.30		0.10	0.10	0.10	0.10
Clearance Time (s)		4.7	5.5	5.5	5.5		6.1	6.1	6.1	6.1
Vehicle Extension (s)		2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0
Lane Grp Cap (vph)		272	2468	1892	343		351	181	146	136
v/s Ratio Prot		c0.14	0.07	0.10			0.04	0.01	c0.09	
v/s Ratio Perm					c0.22					0.02
v/c Ratio		0.91	0.15	0.35	0.76		0.38	0.07	0.86	0.16
Uniform Delay, d1		54.1	18.6	36.0	41.6		54.5	52.8	57.4	53.2
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2		31.8	0.1	0.5	14.7		0.2	0.1	35.4	0.2
Delay (s)		85.9	18.7	36.6	56.3		54.7	52.8	92.8	53.4
Level of Service		F	B	D	E		D	D	F	D
Approach Delay (s)			45.4	42.1					68.6	
Approach LOS			D	D					E	

Intersection Summary			
HCM 2000 Control Delay	50.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.3
Intersection Capacity Utilization	64.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

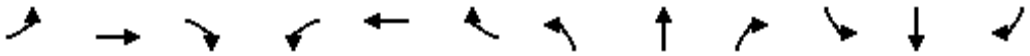
Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	482	19	11	369	5	6	0	17	5	0	7
Future Vol, veh/h	11	482	19	11	369	5	6	0	17	5	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	125	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	507	20	12	388	5	6	0	18	5	0	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	394	0	0	527	0	0	959	958	517	963	965	391
Stage 1	-	-	-	-	-	-	541	541	-	414	414	-
Stage 2	-	-	-	-	-	-	418	417	-	549	551	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1165	-	-	1040	-	-	237	257	558	235	255	658
Stage 1	-	-	-	-	-	-	525	521	-	616	593	-
Stage 2	-	-	-	-	-	-	612	591	-	520	515	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1165	-	-	1040	-	-	230	251	558	224	249	658
Mov Cap-2 Maneuver	-	-	-	-	-	-	230	251	-	224	249	-
Stage 1	-	-	-	-	-	-	520	516	-	610	586	-
Stage 2	-	-	-	-	-	-	598	584	-	498	510	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.2	14.4	15.2
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	407	1165	-	-	1040	-	-	364
HCM Lane V/C Ratio	0.059	0.01	-	-	0.011	-	-	0.035
HCM Control Delay (s)	14.4	8.1	-	-	8.5	-	-	15.2
HCM Lane LOS	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.1



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	206	1076	0	0	533	437	241	6	577	0	0	0
Future Volume (vph)	206	1076	0	0	533	437	241	6	577	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	5.5			5.5	5.5	5.1	5.1	5.1			
Lane Util. Factor	1.00	0.95			0.86	0.86	0.97	1.00	0.88			
Frpb, ped/bikes	1.00	1.00			0.99	0.97	1.00	1.00	0.86			
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Frt	1.00	1.00			0.96	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	1770	3539			4561	1322	3433	1863	2393			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	1770	3539			4561	1322	3433	1863	2393			
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	215	1121	0	0	555	455	251	6	601	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	523	0	0	0
Lane Group Flow (vph)	215	1121	0	0	778	232	251	6	78	0	0	0
Confl. Peds. (#/hr)			81	81		10			32			
Confl. Bikes (#/hr)			3			5						1
Turn Type	Prot	NA			NA	Perm	Split	NA	Perm			
Protected Phases	5	2			6		8	8				
Permitted Phases						6			8			
Actuated Green, G (s)	20.0	59.9			35.2	35.2	15.5	15.5	15.5			
Effective Green, g (s)	20.0	59.9			35.2	35.2	15.5	15.5	15.5			
Actuated g/C Ratio	0.17	0.50			0.29	0.29	0.13	0.13	0.13			
Clearance Time (s)	4.7	5.5			5.5	5.5	5.1	5.1	5.1			
Vehicle Extension (s)	2.0	2.0			2.0	2.0	2.0	2.0	2.0			
Lane Grp Cap (vph)	295	1766			1337	387	443	240	309			
v/s Ratio Prot	c0.12	c0.32			0.17		c0.07	0.00				
v/s Ratio Perm						0.18			0.03			
v/c Ratio	0.73	0.63			0.58	0.60	0.57	0.03	0.25			
Uniform Delay, d1	47.4	22.0			36.1	36.4	49.1	45.6	47.0			
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	7.4	1.8			1.9	6.7	1.0	0.0	0.2			
Delay (s)	54.8	23.8			38.0	43.1	50.1	45.7	47.2			
Level of Service	D	C			D	D	D	D	D			
Approach Delay (s)		28.8			39.2			48.0			0.0	
Approach LOS		C			D			D			A	

Intersection Summary			
HCM 2000 Control Delay	37.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.3
Intersection Capacity Utilization	61.6%	ICU Level of Service	B
Analysis Period (min)	15		

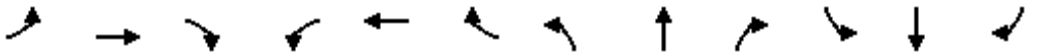
c Critical Lane Group

Intersection	
Intersection Delay, s/veh	13.5
Intersection LOS	B

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	54	48	162	54	150	336
Future Vol, veh/h	54	48	162	54	150	336
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	58	52	174	58	161	361
Number of Lanes	1	0	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	9.6	9.7	16
HCM LOS	A	A	C

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	53%	31%
Vol Thru, %	75%	0%	69%
Vol Right, %	25%	47%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	216	102	486
LT Vol	0	54	150
Through Vol	162	0	336
RT Vol	54	48	0
Lane Flow Rate	232	110	523
Geometry Grp	1	1	1
Degree of Util (X)	0.3	0.165	0.66
Departure Headway (Hd)	4.652	5.424	4.55
Convergence, Y/N	Yes	Yes	Yes
Cap	769	657	789
Service Time	2.704	3.495	2.593
HCM Lane V/C Ratio	0.302	0.167	0.663
HCM Control Delay	9.7	9.6	16
HCM Lane LOS	A	A	C
HCM 95th-tile Q	1.3	0.6	5.1



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	408	262	0	0	473	421	149	0	89	0	0	0
Future Volume (vph)	408	262	0	0	473	421	149	0	89	0	0	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			1.00	1.00		1.00	1.00			
Frpb, ped/bikes	1.00	1.00			1.00	0.93		1.00	0.90			
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)	1770	1863			1863	1477		1770	1419			
Flt Permitted	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (perm)	1770	1863			1863	1477		1770	1419			
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)	434	279	0	0	503	448	159	0	95	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	434	279	0	0	503	448	0	159	95	0	0	0
Confl. Peds. (#/hr)	1		1			11	1		15			
Confl. Bikes (#/hr)						20			15			
Turn Type	Prot	NA			NA	Perm	Split	NA	Perm			
Protected Phases	5	2			6		4	4				
Permitted Phases						6			4			
Actuated Green, G (s)	23.0	59.8			32.1	32.1		13.3	13.3			
Effective Green, g (s)	23.7	61.8			34.1	34.1		14.4	14.4			
Actuated g/C Ratio	0.25	0.65			0.36	0.36		0.15	0.15			
Clearance Time (s)	4.7	6.0			6.0	6.0		5.1	5.1			
Vehicle Extension (s)	3.0	2.0			2.0	2.0		2.0	2.0			
Lane Grp Cap (vph)	439	1206			665	527		267	214			
v/s Ratio Prot	c0.25	0.15			0.27			c0.09				
v/s Ratio Perm						c0.30			0.07			
v/c Ratio	0.99	0.23			0.76	0.85		0.60	0.44			
Uniform Delay, d1	35.7	7.0			27.0	28.3		37.8	36.9			
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Incremental Delay, d2	39.5	0.0			4.4	12.0		2.4	0.5			
Delay (s)	75.3	7.0			31.4	40.3		40.2	37.4			
Level of Service	E	A			C	D		D	D			
Approach Delay (s)		48.5			35.6			39.1			0.0	
Approach LOS		D			D			D			A	

Intersection Summary			
HCM 2000 Control Delay	40.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	95.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	68.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Intersection Delay, s/veh	5.7
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	2	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	291	276	23	9
Demand Flow Rate, veh/h	297	282	23	9
Vehicles Circulating, veh/h	41	26	270	284
Vehicles Exiting, veh/h	252	267	68	24
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	3	9	10
Ped Cap Adj	1.000	1.000	0.999	0.999
Approach Delay, s/veh	5.8	5.8	4.4	4.4
Approach LOS	A	A	A	A

Lane	Left	Right	Left	Left	Left
Designated Moves	L	TR	TR	LTR	LR
Assumed Moves	L	TR	TR	LTR	LR
RT Channelized					
Lane Util	0.037	0.963	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193	5.193	5.193
Entry Flow, veh/h	11	286	282	23	9
Cap Entry Lane, veh/h	1085	1085	1101	863	851
Entry HV Adj Factor	1.000	0.979	0.980	0.996	0.991
Flow Entry, veh/h	11	280	276	23	9
Cap Entry, veh/h	1085	1062	1078	858	842
V/C Ratio	0.010	0.264	0.256	0.027	0.011
Control Delay, s/veh	3.4	5.9	5.8	4.4	4.4
LOS	A	A	A	A	A
95th %tile Queue, veh	0	1	1	0	0

Movement	EBL2	EBT	WBT	WBR	NBL2	NBL	NBR
Lane Configurations							
Traffic Volume (vph)	257	362	766	293	239	15	261
Future Volume (vph)	257	362	766	293	239	15	261
Ideal Flow (vphpl)	1900	1900	1200	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	0.86	1.00	0.97	1.00	0.88
Frpb, ped/bikes	1.00	1.00	1.00	0.89	1.00	1.00	0.91
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	0.95	1.00
Satd. Flow (prot)	1770	5085	4047	1274	3433	1770	2528
Flt Permitted	0.95	1.00	1.00	1.00	0.95	0.95	1.00
Satd. Flow (perm)	1770	5085	4047	1274	3433	1770	2528
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	279	393	833	318	260	16	284
RTOR Reduction (vph)	0	0	0	0	0	0	0
Lane Group Flow (vph)	279	393	833	318	260	16	284
Confl. Peds. (#/hr)				38			29
Confl. Bikes (#/hr)				4			10
Parking (#/hr)				0			
Turn Type	Prot	NA	NA	Perm	Prot	Prot	Perm
Protected Phases	5	2	6		8	8	
Permitted Phases				6			8
Actuated Green, G (s)	26.0	62.6	31.9	31.9	14.8	14.8	14.8
Effective Green, g (s)	26.7	64.1	33.4	33.4	16.9	16.9	16.9
Actuated g/C Ratio	0.21	0.49	0.26	0.26	0.13	0.13	0.13
Clearance Time (s)	4.7	5.5	5.5	5.5	6.1	6.1	6.1
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	363	2507	1039	327	446	230	328
v/s Ratio Prot	c0.16	0.08	0.21		0.08	0.01	
v/s Ratio Perm				c0.25			c0.11
v/c Ratio	0.77	0.16	0.80	0.97	0.58	0.07	0.87
Uniform Delay, d1	48.7	18.1	45.2	47.8	53.2	49.6	55.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.5	0.1	6.5	43.3	1.3	0.0	19.9
Delay (s)	57.3	18.2	51.7	91.1	54.5	49.7	75.4
Level of Service	E	B	D	F	D	D	E
Approach Delay (s)		34.4	62.6				
Approach LOS		C	E				

Intersection Summary			
HCM 2000 Control Delay	55.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	56.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL2	EBL	EBT	WBT	WBR	WBR2	NBL2	NBL	NBR
Lane Configurations									
Traffic Volume (vph)	257	16	362	766	293	2	239	15	261
Future Volume (vph)	257	16	362	766	293	2	239	15	261
Ideal Flow (vphpl)	1900	1900	1900	1200	1900	1900	1900	1900	1900
Total Lost time (s)		4.7	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor		1.00	0.91	0.86	1.00		0.97	1.00	0.88
Frpb, ped/bikes		1.00	1.00	1.00	0.81		1.00	1.00	0.91
Flpb, ped/bikes		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt		1.00	1.00	1.00	0.85		1.00	1.00	0.85
Flt Protected		0.95	1.00	1.00	1.00		0.95	0.95	1.00
Satd. Flow (prot)		1770	5085	4047	1153		3433	1770	2528
Flt Permitted		0.95	1.00	1.00	1.00		0.95	0.95	1.00
Satd. Flow (perm)		1770	5085	4047	1153		3433	1770	2528
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	279	17	393	833	318	2	260	16	284
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	296	393	833	320	0	260	16	284
Confl. Peds. (#/hr)					38	38			29
Confl. Bikes (#/hr)					4	4			10
Parking (#/hr)					0				
Turn Type	Prot	Prot	NA	NA	Perm		Prot	Prot	Perm
Protected Phases	5	5	2	6			8	8	
Permitted Phases					6				8
Actuated Green, G (s)		26.0	62.6	31.9	31.9		14.8	14.8	14.8
Effective Green, g (s)		26.0	64.1	33.4	33.4		16.9	16.9	16.9
Actuated g/C Ratio		0.20	0.49	0.26	0.26		0.13	0.13	0.13
Clearance Time (s)		4.7	5.5	5.5	5.5		6.1	6.1	6.1
Vehicle Extension (s)		2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)		354	2507	1039	296		446	230	328
v/s Ratio Prot		c0.17	0.08	0.21			0.08	0.01	
v/s Ratio Perm					c0.28				c0.11
v/c Ratio		0.84	0.16	0.80	1.08		0.58	0.07	0.87
Uniform Delay, d1		50.0	18.1	45.2	48.3		53.2	49.6	55.4
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		15.0	0.1	6.5	75.6		1.3	0.0	19.9
Delay (s)		64.9	18.2	51.7	123.9		54.5	49.7	75.4
Level of Service		E	B	D	F		D	D	E
Approach Delay (s)			38.3	71.8					
Approach LOS			D	E					

Intersection Summary			
HCM 2000 Control Delay	60.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.7
Intersection Capacity Utilization	57.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

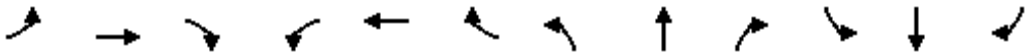
Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	331	13	3	529	16	13	0	9	20	0	8
Future Vol, veh/h	6	331	13	3	529	16	13	0	9	20	0	8
Conflicting Peds, #/hr	52	0	45	45	0	52	26	0	5	5	0	26
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	356	14	3	569	17	14	0	10	22	0	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	638	0	0	415	0	0	1035	1065	413	1022	1064	655
Stage 1	-	-	-	-	-	-	421	421	-	636	636	-
Stage 2	-	-	-	-	-	-	614	644	-	386	428	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	946	-	-	1144	-	-	210	223	639	214	223	466
Stage 1	-	-	-	-	-	-	610	589	-	466	472	-
Stage 2	-	-	-	-	-	-	479	468	-	637	585	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	926	-	-	1139	-	-	192	203	612	199	203	436
Mov Cap-2 Maneuver	-	-	-	-	-	-	192	203	-	199	203	-
Stage 1	-	-	-	-	-	-	582	562	-	442	450	-
Stage 2	-	-	-	-	-	-	458	446	-	619	559	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0	19.8	22.5
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	267	926	-	-	1139	-	-	236
HCM Lane V/C Ratio	0.089	0.007	-	-	0.003	-	-	0.128
HCM Control Delay (s)	19.8	8.9	0	-	8.2	0	-	22.5
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	0.4



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	250	441	0	0	527	514	231	6	278	0	0	0
Future Volume (vph)	250	441	0	0	527	514	231	6	278	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1200	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0			
Lane Util. Factor	1.00	0.95			0.86	0.86	0.97	1.00	0.88			
Frpb, ped/bikes	1.00	1.00			0.97	0.90	1.00	1.00	0.75			
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Frt	1.00	1.00			0.95	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	1770	3539			2795	1231	3433	1863	2092			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	1770	3539			2795	1231	3433	1863	2092			
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	253	445	0	0	532	519	233	6	281	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	253	445	0	0	792	259	233	6	281	0	0	0
Confl. Peds. (#/hr)			70	70		57			70	70		
Confl. Bikes (#/hr)			1						10			1
Turn Type	Prot	NA			NA	Perm	Split	NA	Perm			
Protected Phases	5	2			6		8	8				
Permitted Phases						6			8			
Actuated Green, G (s)	31.0	62.4			26.7	26.7	20.0	20.0	20.0			
Effective Green, g (s)	31.7	63.9			28.2	28.2	21.1	21.1	21.1			
Actuated g/C Ratio	0.24	0.49			0.22	0.22	0.16	0.16	0.16			
Clearance Time (s)	4.7	5.5			5.5	5.5	5.1	5.1	5.1			
Vehicle Extension (s)	2.0	2.0			2.0	2.0	2.0	2.0	2.0			
Lane Grp Cap (vph)	431	1739			606	267	557	302	339			
v/s Ratio Prot	c0.14	0.13			c0.28		0.07	0.00				
v/s Ratio Perm						0.21			c0.13			
v/c Ratio	0.59	0.26			1.31	0.97	0.42	0.02	0.83			
Uniform Delay, d1	43.4	19.2			50.9	50.5	48.9	45.8	52.7			
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	1.3	0.4			149.8	47.9	0.2	0.0	14.6			
Delay (s)	44.7	19.6			200.7	98.4	49.1	45.8	67.3			
Level of Service	D	B			F	F	D	D	E			
Approach Delay (s)		28.7			175.5			58.9			0.0	
Approach LOS		C			F			E			A	

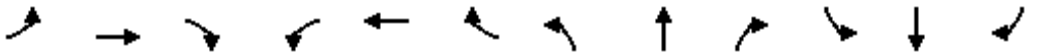
Intersection Summary			
HCM 2000 Control Delay	103.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	53.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Intersection Delay, s/veh	8.5
Intersection LOS	A

Approach	WB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	127	567	253
Demand Flow Rate, veh/h	130	578	258
Vehicles Circulating, veh/h	415	54	48
Vehicles Exiting, veh/h	217	252	497
Follow-Up Headway, s	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	42	15	0
Ped Cap Adj	0.994	0.998	1.000
Approach Delay, s/veh	6.9	10.1	5.7
Approach LOS	A	B	A

Lane	Left	Left	Left
Designated Moves	LR	TR	LT
Assumed Moves	LR	TR	LT
RT Channelized			
Lane Util	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193
Entry Flow, veh/h	130	578	258
Cap Entry Lane, veh/h	746	1071	1077
Entry HV Adj Factor	0.977	0.981	0.981
Flow Entry, veh/h	127	567	253
Cap Entry, veh/h	725	1048	1056
V/C Ratio	0.175	0.541	0.240
Control Delay, s/veh	6.9	10.1	5.7
LOS	A	B	A
95th %tile Queue, veh	1	3	1



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	254	715	0	0	378	230	231	3	212	0	0	0
Future Volume (vph)	254	715	0	0	378	230	231	3	212	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	6.0			6.0	6.0		5.1	5.1			
Lane Util. Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Frpb, ped/bikes	1.00	1.00			1.00	0.91		1.00	0.95			
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)	1770	1863			1863	1441		1775	1506			
Flt Permitted	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (perm)	1770	1863			1863	1441		1775	1506			
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)	267	753	0	0	398	242	243	3	223	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	267	753	0	0	398	242	0	246	223	0	0	0
Confl. Peds. (#/hr)			21			15			12			
Confl. Bikes (#/hr)			7			25						
Turn Type	Prot	NA			NA	Perm	Split	NA	Perm			
Protected Phases	5	2			6		4	4				
Permitted Phases						6			4			
Actuated Green, G (s)	20.8	53.0			27.5	27.5		20.1	20.1			
Effective Green, g (s)	20.8	53.0			27.5	27.5		20.1	20.1			
Actuated g/C Ratio	0.21	0.54			0.28	0.28		0.20	0.20			
Clearance Time (s)	4.7	6.0			6.0	6.0		5.1	5.1			
Vehicle Extension (s)	3.0	2.0			2.0	2.0		2.0	2.0			
Lane Grp Cap (vph)	373	1001			519	401		361	307			
v/s Ratio Prot	0.15	c0.40			0.21			0.14				
v/s Ratio Perm						0.17			c0.15			
v/c Ratio	0.72	0.75			0.77	0.60		0.68	0.73			
Uniform Delay, d1	36.2	17.7			32.6	30.8		36.3	36.7			
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Incremental Delay, d2	6.4	2.9			6.0	1.8		4.2	7.1			
Delay (s)	42.6	20.6			38.7	32.6		40.5	43.7			
Level of Service	D	C			D	C		D	D			
Approach Delay (s)		26.3			36.4			42.0			0.0	
Approach LOS		C			D			D			A	

Intersection Summary			
HCM 2000 Control Delay	32.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	98.6	Sum of lost time (s)	19.8
Intersection Capacity Utilization	61.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Intersection Delay, s/veh	6.4
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	2	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	412	254	67	28
Demand Flow Rate, veh/h	420	259	68	28
Vehicles Circulating, veh/h	49	42	373	270
Vehicles Exiting, veh/h	249	399	96	31
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	3	3	15
Ped Cap Adj	1.000	1.000	1.000	0.998
Approach Delay, s/veh	7.2	5.7	5.6	4.5
Approach LOS	A	A	A	A

Lane	Left	Right	Left	Left	Left
Designated Moves	L	TR	TR	LTR	LR
Assumed Moves	L	TR	TR	LTR	LR
RT Channelized					
Lane Util	0.038	0.962	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193	5.193	5.193
Entry Flow, veh/h	16	404	259	68	28
Cap Entry Lane, veh/h	1076	1076	1083	778	863
Entry HV Adj Factor	1.000	0.980	0.980	0.983	0.991
Flow Entry, veh/h	16	396	254	67	28
Cap Entry, veh/h	1076	1055	1061	765	853
V/C Ratio	0.015	0.375	0.239	0.087	0.033
Control Delay, s/veh	3.5	7.3	5.7	5.6	4.5
LOS	A	A	A	A	A
95th %tile Queue, veh	0	2	1	0	0

Movement	EBL2	EBT	WBT	WBR	NBL2	NBL	NBR
Lane Configurations							
Traffic Volume (vph)	169	362	644	244	142	12	398
Future Volume (vph)	169	362	644	244	142	12	398
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	5.5	5.5	5.5	6.1	6.1	6.1
Lane Util. Factor	1.00	0.91	0.86	1.00	0.97	1.00	0.88
Frpb, ped/bikes	1.00	1.00	1.00	0.90	1.00	1.00	0.90
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	0.95	1.00
Satd. Flow (prot)	1770	5085	6408	1279	3433	1770	2507
Flt Permitted	0.95	1.00	1.00	1.00	0.95	0.95	1.00
Satd. Flow (perm)	1770	5085	6408	1279	3433	1770	2507
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	176	377	671	254	148	12	415
RTOR Reduction (vph)	0	0	0	0	0	0	0
Lane Group Flow (vph)	176	377	671	254	148	13	415
Confl. Peds. (#/hr)				36			34
Confl. Bikes (#/hr)				5			1
Parking (#/hr)				0			
Turn Type	Prot	NA	NA	Perm	Prot	Prot	Perm
Protected Phases	5	2	6		8	8	
Permitted Phases				6			8
Actuated Green, G (s)	20.0	61.4	36.7	36.7	15.0	15.0	15.0
Effective Green, g (s)	20.0	61.4	36.7	36.7	15.0	15.0	15.0
Actuated g/C Ratio	0.15	0.47	0.28	0.28	0.12	0.12	0.12
Clearance Time (s)	4.7	5.5	5.5	5.5	6.1	6.1	6.1
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	272	2401	1809	361	396	204	289
v/s Ratio Prot	c0.10	0.07	0.10		0.04	0.01	
v/s Ratio Perm				c0.20			c0.17
v/c Ratio	0.65	0.16	0.37	0.70	0.37	0.06	1.44
Uniform Delay, d1	51.7	19.5	37.4	41.8	53.2	51.2	57.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.9	0.1	0.6	10.9	0.2	0.0	214.9
Delay (s)	55.6	19.7	38.0	52.7	53.4	51.3	272.4
Level of Service	E	B	D	D	D	D	F
Approach Delay (s)		31.1	42.0				
Approach LOS		C	D				

Intersection Summary			
HCM 2000 Control Delay	86.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.3
Intersection Capacity Utilization	56.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL2	EBL	EBT	WBT	WBR	WBR2	NBL2	NBL	NBR
Lane Configurations									
Traffic Volume (vph)	169	69	362	644	244	7	142	12	398
Future Volume (vph)	169	69	362	644	244	7	142	12	398
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.7	5.5	5.5	5.5		6.1	6.1	6.1
Lane Util. Factor		1.00	0.91	0.86	1.00		0.97	1.00	0.88
Frpb, ped/bikes		1.00	1.00	1.00	0.82		1.00	1.00	0.90
Flpb, ped/bikes		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt		1.00	1.00	1.00	0.85		1.00	1.00	0.85
Flt Protected		0.95	1.00	1.00	1.00		0.95	0.95	1.00
Satd. Flow (prot)		1770	5085	6408	1163		3433	1770	2507
Flt Permitted		0.95	1.00	1.00	1.00		0.95	0.95	1.00
Satd. Flow (perm)		1770	5085	6408	1163		3433	1770	2507
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	176	72	377	671	254	7	148	12	415
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	248	377	671	261	0	148	13	415
Confl. Peds. (#/hr)					36	36			34
Confl. Bikes (#/hr)					5	5			1
Parking (#/hr)					0				
Turn Type	Prot	Prot	NA	NA	Perm		Prot	Prot	Perm
Protected Phases	5	5	2	6			8	8	
Permitted Phases					6				8
Actuated Green, G (s)		20.0	61.4	36.7	36.7		15.0	15.0	15.0
Effective Green, g (s)		20.0	61.4	36.7	36.7		15.0	15.0	15.0
Actuated g/C Ratio		0.15	0.47	0.28	0.28		0.12	0.12	0.12
Clearance Time (s)		4.7	5.5	5.5	5.5		6.1	6.1	6.1
Vehicle Extension (s)		2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)		272	2401	1809	328		396	204	289
v/s Ratio Prot		c0.14	0.07	0.10			0.04	0.01	
v/s Ratio Perm					c0.22				c0.17
v/c Ratio		0.91	0.16	0.37	0.80		0.37	0.06	1.44
Uniform Delay, d1		54.1	19.5	37.4	43.2		53.2	51.2	57.5
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		31.8	0.1	0.6	17.9		0.2	0.0	214.9
Delay (s)		85.9	19.7	38.0	61.1		53.4	51.3	272.4
Level of Service		F	B	D	E		D	D	F
Approach Delay (s)			46.0	44.4					
Approach LOS			D	D					

Intersection Summary			
HCM 2000 Control Delay	89.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.3
Intersection Capacity Utilization	56.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

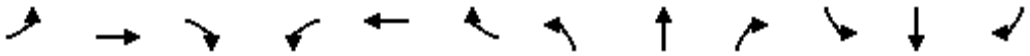
Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	11	482	19	11	369	5	6	0	17	5	0	7
Future Vol, veh/h	11	482	19	11	369	5	6	0	17	5	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	507	20	12	388	5	6	0	18	5	0	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	394	0	0	527	0	0	959	958	517	963	965	391
Stage 1	-	-	-	-	-	-	541	541	-	414	414	-
Stage 2	-	-	-	-	-	-	418	417	-	549	551	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1165	-	-	1040	-	-	237	257	558	235	255	658
Stage 1	-	-	-	-	-	-	525	521	-	616	593	-
Stage 2	-	-	-	-	-	-	612	591	-	520	515	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1165	-	-	1040	-	-	229	249	558	222	247	658
Mov Cap-2 Maneuver	-	-	-	-	-	-	229	249	-	222	247	-
Stage 1	-	-	-	-	-	-	517	513	-	607	584	-
Stage 2	-	-	-	-	-	-	596	582	-	496	507	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.2	14.4	15.3
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	406	1165	-	-	1040	-	-	362
HCM Lane V/C Ratio	0.06	0.01	-	-	0.011	-	-	0.035
HCM Control Delay (s)	14.4	8.1	0	-	8.5	0	-	15.3
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.1



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	206	1076	0	0	533	437	241	6	577	0	0	0
Future Volume (vph)	206	1076	0	0	533	437	241	6	577	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	5.5			5.5	5.5	5.1	5.1	5.1			
Lane Util. Factor	1.00	0.95			0.86	0.86	0.97	1.00	0.88			
Frpb, ped/bikes	1.00	1.00			0.99	0.97	1.00	1.00	0.89			
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Frt	1.00	1.00			0.96	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	1770	3539			4559	1320	3433	1863	2475			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	1770	3539			4559	1320	3433	1863	2475			
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	215	1121	0	0	555	455	251	6	601	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	215	1121	0	0	778	232	251	6	601	0	0	0
Confl. Peds. (#/hr)			81	81		10			32			
Confl. Bikes (#/hr)			3			5			10			1
Turn Type	Prot	NA			NA	Perm	Split	NA	Perm			
Protected Phases	5	2			6		8	8				
Permitted Phases						6			8			
Actuated Green, G (s)	20.0	50.4			25.7	25.7	25.0	25.0	25.0			
Effective Green, g (s)	20.0	50.4			25.7	25.7	25.0	25.0	25.0			
Actuated g/C Ratio	0.17	0.42			0.21	0.21	0.21	0.21	0.21			
Clearance Time (s)	4.7	5.5			5.5	5.5	5.1	5.1	5.1			
Vehicle Extension (s)	2.0	2.0			2.0	2.0	2.0	2.0	2.0			
Lane Grp Cap (vph)	295	1486			976	282	715	388	515			
v/s Ratio Prot	0.12	c0.32			0.17		0.07	0.00				
v/s Ratio Perm						0.18			c0.24			
v/c Ratio	0.73	0.75			0.80	0.82	0.35	0.02	1.17			
Uniform Delay, d1	47.4	29.5			44.7	45.0	40.6	37.7	47.5			
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	7.4	3.6			6.7	23.0	0.1	0.0	94.6			
Delay (s)	54.8	33.1			51.4	68.0	40.7	37.7	142.1			
Level of Service	D	C			D	E	D	D	F			
Approach Delay (s)		36.6			55.2			111.7			0.0	
Approach LOS		D			E			F			A	

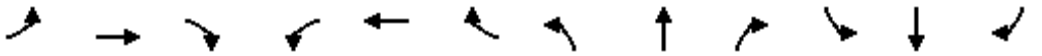
Intersection Summary			
HCM 2000 Control Delay	62.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.3
Intersection Capacity Utilization	61.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Intersection Delay, s/veh	8.0
Intersection LOS	A

Approach	WB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	110	232	522
Demand Flow Rate, veh/h	112	236	532
Vehicles Circulating, veh/h	177	164	59
Vehicles Exiting, veh/h	223	427	230
Follow-Up Headway, s	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	52	21	0
Ped Cap Adj	0.993	0.997	1.000
Approach Delay, s/veh	5.0	6.3	9.3
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	LR	TR	LT
Assumed Moves	LR	TR	LT
RT Channelized			
Lane Util	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193
Entry Flow, veh/h	112	236	532
Cap Entry Lane, veh/h	947	959	1065
Entry HV Adj Factor	0.982	0.981	0.981
Flow Entry, veh/h	110	232	522
Cap Entry, veh/h	923	938	1045
V/C Ratio	0.119	0.247	0.499
Control Delay, s/veh	5.0	6.3	9.3
LOS	A	A	A
95th %tile Queue, veh	0	1	3



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	425	275	0	0	480	430	155	0	90	0	0	0
Future Volume (vph)	425	275	0	0	480	430	155	0	90	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	6.0			6.0	6.0		5.1	5.1			
Lane Util. Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Frpb, ped/bikes	1.00	1.00			1.00	0.95		1.00	1.00			
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)	1770	1863			1863	1501		1770	1583			
Flt Permitted	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (perm)	1770	1863			1863	1501		1770	1583			
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)	452	293	0	0	511	457	165	0	96	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	82	0	0	0
Lane Group Flow (vph)	452	293	0	0	511	457	0	165	14	0	0	0
Confl. Peds. (#/hr)	1		1			11	1					
Confl. Bikes (#/hr)			9			4						
Turn Type	Prot	NA			NA	Perm	Split	NA	Perm			
Protected Phases	5	2			6		4	4				
Permitted Phases						6			4			
Actuated Green, G (s)	30.1	74.2			39.4	39.4		14.7	14.7			
Effective Green, g (s)	30.1	74.2			39.4	39.4		14.7	14.7			
Actuated g/C Ratio	0.30	0.74			0.39	0.39		0.15	0.15			
Clearance Time (s)	4.7	6.0			6.0	6.0		5.1	5.1			
Vehicle Extension (s)	3.0	2.0			2.0	2.0		2.0	2.0			
Lane Grp Cap (vph)	532	1382			734	591		260	232			
v/s Ratio Prot	c0.26	0.16			0.27			c0.09				
v/s Ratio Perm						c0.30			0.01			
v/c Ratio	0.85	0.21			0.70	0.77		0.63	0.06			
Uniform Delay, d1	32.8	3.9			25.3	26.4		40.1	36.7			
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Incremental Delay, d2	12.1	0.0			2.3	5.7		3.7	0.0			
Delay (s)	44.9	4.0			27.6	32.1		43.8	36.7			
Level of Service	D	A			C	C		D	D			
Approach Delay (s)		28.8			29.7			41.2			0.0	
Approach LOS		C			C			D			A	

Intersection Summary			
HCM 2000 Control Delay	30.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	15.8
Intersection Capacity Utilization	73.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

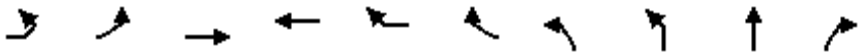
Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	220	0	0	205	10	10	5	20	5	0	5
Future Vol, veh/h	10	220	0	0	205	10	10	5	20	5	0	5
Conflicting Peds, #/hr	10	0	9	9	0	10	0	0	3	3	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	125	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	265	0	0	247	12	12	6	24	6	0	6

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	269	0	-	-	-	0	545	558	268	570	552	263
Stage 1	-	-	-	-	-	-	289	289	-	263	263	-
Stage 2	-	-	-	-	-	-	256	269	-	307	289	-
Critical Hdwy	4.12	-	-	-	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1295	-	0	0	-	-	449	438	771	432	442	776
Stage 1	-	-	0	0	-	-	719	673	-	742	691	-
Stage 2	-	-	0	0	-	-	749	687	-	703	673	-
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	1295	-	-	-	-	-	442	430	769	407	434	770
Mov Cap-2 Maneuver	-	-	-	-	-	-	442	430	-	407	434	-
Stage 1	-	-	-	-	-	-	712	667	-	729	685	-
Stage 2	-	-	-	-	-	-	743	681	-	667	667	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0	11.7	11.9
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	581	1295	-	-	-	533
HCM Lane V/C Ratio	0.073	0.009	-	-	-	0.023
HCM Control Delay (s)	11.7	7.8	-	-	-	11.9
HCM Lane LOS	B	A	-	-	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	-	0.1



Movement	EBL2	EBL	EBT	WBT	WBR	WBR2	NBL2	NBL	NBT	NBR
Lane Configurations										
Traffic Volume (vph)	265	20	375	795	305	5	235	20	60	235
Future Volume (vph)	265	20	375	795	305	5	235	20	60	235
Ideal Flow (vphpl)	1900	1900	1900	1200	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.7	5.5	5.5	5.5		6.1	6.1	6.1	6.1
Lane Util. Factor		1.00	0.91	0.86	1.00		0.97	1.00	0.95	0.95
Frpb, ped/bikes		1.00	1.00	1.00	0.81		1.00	1.00	0.94	0.91
Flpb, ped/bikes		1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00
Frt		1.00	1.00	1.00	0.85		1.00	1.00	0.91	0.85
Flt Protected		0.95	1.00	1.00	1.00		0.95	0.95	1.00	1.00
Satd. Flow (prot)		1770	5085	4047	1153		3433	1770	1517	1362
Flt Permitted		0.95	1.00	1.00	1.00		0.95	0.95	1.00	1.00
Satd. Flow (perm)		1770	5085	4047	1153		3433	1770	1517	1362
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	288	22	408	864	332	5	255	22	65	255
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	43	140
Lane Group Flow (vph)	0	310	408	864	337	0	255	22	121	16
Confl. Peds. (#/hr)					38	38				29
Confl. Bikes (#/hr)					4	4				
Parking (#/hr)					0					
Turn Type	Prot	Prot	NA	NA	Perm		Split	Split	NA	Perm
Protected Phases	5	5	2	6			8	8	8	
Permitted Phases					6					8
Actuated Green, G (s)		26.0	64.0	33.3	33.3		13.4	13.4	13.4	13.4
Effective Green, g (s)		26.0	64.0	33.3	33.3		13.4	13.4	13.4	13.4
Actuated g/C Ratio		0.20	0.49	0.26	0.26		0.10	0.10	0.10	0.10
Clearance Time (s)		4.7	5.5	5.5	5.5		6.1	6.1	6.1	6.1
Vehicle Extension (s)		2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0
Lane Grp Cap (vph)		354	2503	1036	295		353	182	156	140
v/s Ratio Prot		c0.18	0.08	0.21			0.07	0.01	c0.08	
v/s Ratio Perm					c0.29					0.01
v/c Ratio		0.88	0.16	0.83	1.14		0.72	0.12	0.78	0.11
Uniform Delay, d1		50.4	18.2	45.7	48.4		56.5	53.0	56.8	52.9
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2		20.2	0.1	7.9	96.6		6.1	0.1	19.4	0.1
Delay (s)		70.6	18.4	53.6	144.9		62.6	53.1	76.2	53.1
Level of Service		E	B	D	F		E	D	E	D
Approach Delay (s)			40.9	79.2					63.5	
Approach LOS			D	E					E	

Intersection Summary			
HCM 2000 Control Delay	64.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.3
Intersection Capacity Utilization	63.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

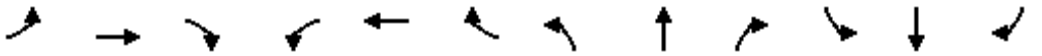
Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	365	15	5	580	20	15	0	10	25	0	10
Future Vol, veh/h	10	365	15	5	580	20	15	0	10	25	0	10
Conflicting Peds, #/hr	52	0	45	45	0	52	26	0	5	5	0	26
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	125	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	392	16	5	624	22	16	0	11	27	0	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	697	0	0	454	0	0	1144	1175	451	1129	1172	712
Stage 1	-	-	-	-	-	-	467	467	-	697	697	-
Stage 2	-	-	-	-	-	-	677	708	-	432	475	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	899	-	-	1107	-	-	177	192	608	181	192	432
Stage 1	-	-	-	-	-	-	576	562	-	431	443	-
Stage 2	-	-	-	-	-	-	443	438	-	602	557	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	880	-	-	1102	-	-	160	174	583	167	174	404
Mov Cap-2 Maneuver	-	-	-	-	-	-	160	174	-	167	174	-
Stage 1	-	-	-	-	-	-	547	534	-	407	422	-
Stage 2	-	-	-	-	-	-	420	417	-	581	529	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.1	23.2	27
HCM LOS			C	D

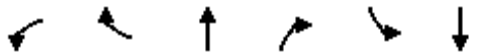
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	225	880	-	-	1102	-	-	201
HCM Lane V/C Ratio	0.119	0.012	-	-	0.005	-	-	0.187
HCM Control Delay (s)	23.2	9.1	-	-	8.3	-	-	27
HCM Lane LOS	C	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	0.4	0	-	-	0	-	-	0.7



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	260	455	0	0	540	525	240	10	290	0	0	0
Future Volume (vph)	260	455	0	0	540	525	240	10	290	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1200	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	5.5			5.5	5.5	5.1	5.1	5.1			
Lane Util. Factor	1.00	0.95			0.86	0.86	0.97	1.00	0.88			
Frpb, ped/bikes	1.00	1.00			0.97	0.90	1.00	1.00	0.66			
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Frt	1.00	1.00			0.95	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	1770	3539			2796	1231	3433	1863	1849			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	1770	3539			2796	1231	3433	1863	1849			
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	263	460	0	0	545	530	242	10	293	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	261	0	0	0
Lane Group Flow (vph)	263	460	0	0	810	265	242	10	32	0	0	0
Confl. Peds. (#/hr)			70	70		57			70	70		
Confl. Bikes (#/hr)			1						1			1
Turn Type	Prot	NA			NA	Perm	Split	NA	Perm			
Protected Phases	5	2			6		8	8				
Permitted Phases						6			8			
Actuated Green, G (s)	31.0	68.2			32.5	32.5	14.2	14.2	14.2			
Effective Green, g (s)	31.0	68.2			32.5	32.5	14.2	14.2	14.2			
Actuated g/C Ratio	0.24	0.52			0.25	0.25	0.11	0.11	0.11			
Clearance Time (s)	4.7	5.5			5.5	5.5	5.1	5.1	5.1			
Vehicle Extension (s)	2.0	2.0			2.0	2.0	2.0	2.0	2.0			
Lane Grp Cap (vph)	422	1856			699	307	374	203	201			
v/s Ratio Prot	c0.15	0.13			c0.29		c0.07	0.01				
v/s Ratio Perm						0.22			0.02			
v/c Ratio	0.62	0.25			1.16	0.86	0.65	0.05	0.16			
Uniform Delay, d1	44.3	16.9			48.8	46.6	55.5	51.9	52.5			
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	2.1	0.3			86.9	26.0	2.9	0.0	0.1			
Delay (s)	46.3	17.2			135.7	72.6	58.4	51.9	52.6			
Level of Service	D	B			F	E	E	D	D			
Approach Delay (s)		27.8			120.1			55.2			0.0	
Approach LOS		C			F			E			A	

Intersection Summary			
HCM 2000 Control Delay	76.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	19.3
Intersection Capacity Utilization	57.8%	ICU Level of Service	B
Analysis Period (min)	15		

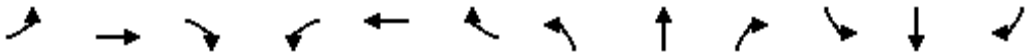
c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Stop			Stop
Traffic Volume (vph)	45	75	370	145	50	185
Future Volume (vph)	45	75	370	145	50	185
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	50	83	411	161	56	206

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total (vph)	133	572	262
Volume Left (vph)	50	0	56
Volume Right (vph)	83	161	0
Hadj (s)	-0.27	-0.13	0.08
Departure Headway (s)	5.5	4.5	5.0
Degree Utilization, x	0.20	0.71	0.36
Capacity (veh/h)	576	780	686
Control Delay (s)	9.9	17.8	10.9
Approach Delay (s)	9.9	17.8	10.9
Approach LOS	A	C	B

Intersection Summary			
Delay	14.8		
Level of Service	B		
Intersection Capacity Utilization	58.9%	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)	265	740	0	0	385	235	235	5	215	0	0	0
Future Volume (vph)	265	740	0	0	385	235	235	5	215	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	6.0			6.0	6.0		5.1	5.1			
Lane Util. Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Frpb, ped/bikes	1.00	1.00			1.00	0.94		1.00	0.96			
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)	1770	1863			1863	1491		1776	1524			
Flt Permitted	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (perm)	1770	1863			1863	1491		1776	1524			
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)	279	779	0	0	405	247	247	5	226	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	83	0	0	127	0	0	0
Lane Group Flow (vph)	279	779	0	0	405	164	0	252	99	0	0	0
Confl. Peds. (#/hr)			21			15			12			
Confl. Bikes (#/hr)			7			8						
Turn Type	Prot	NA			NA	Perm	Split	NA	Perm			
Protected Phases	5	2			6		4	4				
Permitted Phases						6			4			
Actuated Green, G (s)	19.0	47.6			23.9	23.9		17.3	17.3			
Effective Green, g (s)	19.0	47.6			23.9	23.9		17.3	17.3			
Actuated g/C Ratio	0.25	0.63			0.31	0.31		0.23	0.23			
Clearance Time (s)	4.7	6.0			6.0	6.0		5.1	5.1			
Vehicle Extension (s)	3.0	2.0			2.0	2.0		2.0	2.0			
Lane Grp Cap (vph)	442	1166			585	468		404	346			
v/s Ratio Prot	0.16	c0.42			0.22			c0.14				
v/s Ratio Perm						0.11			0.07			
v/c Ratio	0.63	0.67			0.69	0.35		0.62	0.29			
Uniform Delay, d1	25.4	9.1			22.8	20.1		26.4	24.3			
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Incremental Delay, d2	2.9	1.1			2.9	0.2		2.2	0.2			
Delay (s)	28.3	10.3			25.7	20.2		28.6	24.4			
Level of Service	C	B			C	C		C	C			
Approach Delay (s)		15.0			23.6			26.6			0.0	
Approach LOS		B			C			C			A	

Intersection Summary			
HCM 2000 Control Delay	20.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	76.0	Sum of lost time (s)	15.8
Intersection Capacity Utilization	65.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

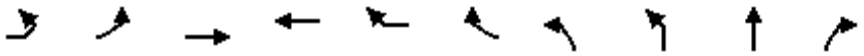
Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	320	0	0	205	10	20	10	50	5	0	15
Future Vol, veh/h	20	320	0	0	205	10	20	10	50	5	0	15
Conflicting Peds, #/hr	15	0	3	3	0	15	0	0	3	3	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	125	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	22	352	0	0	225	11	22	11	55	5	0	16

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	251	0	-	-	-	0	635	647	355	678	642	246
Stage 1	-	-	-	-	-	-	396	396	-	246	246	-
Stage 2	-	-	-	-	-	-	239	251	-	432	396	-
Critical Hdwy	4.12	-	-	-	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1314	-	0	0	-	-	391	390	689	366	392	793
Stage 1	-	-	0	0	-	-	629	604	-	758	703	-
Stage 2	-	-	0	0	-	-	764	699	-	602	604	-
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	1314	-	-	-	-	-	378	379	687	320	381	783
Mov Cap-2 Maneuver	-	-	-	-	-	-	378	379	-	320	381	-
Stage 1	-	-	-	-	-	-	618	594	-	736	694	-
Stage 2	-	-	-	-	-	-	748	690	-	533	594	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0	13.2	11.5
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	526	1314	-	-	-	575
HCM Lane V/C Ratio	0.167	0.017	-	-	-	0.038
HCM Control Delay (s)	13.2	7.8	-	-	-	11.5
HCM Lane LOS	B	A	-	-	-	B
HCM 95th %tile Q(veh)	0.6	0.1	-	-	-	0.1



Movement	EBL2	EBL	EBT	WBT	WBR	WBR2	NBL2	NBL	NBT	NBR
Lane Configurations										
Traffic Volume (vph)	175	75	375	670	255	10	135	15	55	380
Future Volume (vph)	175	75	375	670	255	10	135	15	55	380
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.7	5.5	5.5	5.5		6.1	6.1	6.1	6.1
Lane Util. Factor		1.00	0.91	0.86	1.00		0.97	1.00	0.95	0.95
Frpb, ped/bikes		1.00	1.00	1.00	0.82		1.00	1.00	0.92	0.90
Flpb, ped/bikes		1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00
Frt		1.00	1.00	1.00	0.85		1.00	1.00	0.89	0.85
Flt Protected		0.95	1.00	1.00	1.00		0.95	0.95	1.00	1.00
Satd. Flow (prot)		1770	5085	6408	1163		3433	1770	1446	1347
Flt Permitted		0.95	1.00	1.00	1.00		0.95	0.95	1.00	1.00
Satd. Flow (perm)		1770	5085	6408	1163		3433	1770	1446	1347
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	182	78	391	698	266	10	141	16	57	396
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	85	198
Lane Group Flow (vph)	0	260	391	698	276	0	141	16	146	24
Confl. Peds. (#/hr)					36	36				34
Confl. Bikes (#/hr)					5	5				1
Parking (#/hr)					0					
Turn Type	Prot	Prot	NA	NA	Perm		Split	Split	NA	Perm
Protected Phases	5	5	2	6			8	8	8	
Permitted Phases					6					8
Actuated Green, G (s)		20.0	62.1	37.4	37.4		14.3	14.3	14.3	14.3
Effective Green, g (s)		20.0	62.1	37.4	37.4		14.3	14.3	14.3	14.3
Actuated g/C Ratio		0.15	0.48	0.29	0.29		0.11	0.11	0.11	0.11
Clearance Time (s)		4.7	5.5	5.5	5.5		6.1	6.1	6.1	6.1
Vehicle Extension (s)		2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0
Lane Grp Cap (vph)		272	2429	1843	334		377	194	159	148
v/s Ratio Prot		c0.15	0.08	0.11			0.04	0.01	c0.10	
v/s Ratio Perm					c0.24					0.02
v/c Ratio		0.96	0.16	0.38	0.83		0.37	0.08	0.92	0.16
Uniform Delay, d1		54.6	19.2	37.0	43.3		53.7	52.0	57.3	52.4
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2		41.9	0.1	0.6	20.3		0.2	0.1	46.3	0.2
Delay (s)		96.5	19.4	37.6	63.6		53.9	52.0	103.6	52.6
Level of Service		F	B	D	E		D	D	F	D
Approach Delay (s)			50.2	45.0					72.2	
Approach LOS			D	D					E	

Intersection Summary			
HCM 2000 Control Delay	53.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.3
Intersection Capacity Utilization	65.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

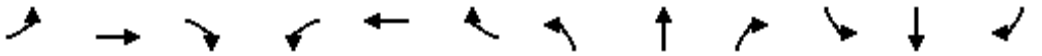
Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	530	25	15	405	10	10	0	20	10	0	10
Future Vol, veh/h	15	530	25	15	405	10	10	0	20	10	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	125	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	558	26	16	426	11	11	0	21	11	0	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	437	0	0	584	0	0	1071	1071	571	1076	1079	432
Stage 1	-	-	-	-	-	-	603	603	-	463	463	-
Stage 2	-	-	-	-	-	-	468	468	-	613	616	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1123	-	-	991	-	-	198	221	520	197	218	624
Stage 1	-	-	-	-	-	-	486	488	-	579	564	-
Stage 2	-	-	-	-	-	-	575	561	-	480	482	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1123	-	-	991	-	-	190	214	520	185	211	624
Mov Cap-2 Maneuver	-	-	-	-	-	-	190	214	-	185	211	-
Stage 1	-	-	-	-	-	-	479	481	-	571	555	-
Stage 2	-	-	-	-	-	-	556	552	-	454	475	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.3	17.1	18.6
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	329	1123	-	-	991	-	-	285
HCM Lane V/C Ratio	0.096	0.014	-	-	0.016	-	-	0.074
HCM Control Delay (s)	17.1	8.3	-	-	8.7	-	-	18.6
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	0.2



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	215	1100	0	0	545	445	250	10	595	0	0	0
Future Volume (vph)	215	1100	0	0	545	445	250	10	595	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	5.5			5.5	5.5	5.1	5.1	5.1			
Lane Util. Factor	1.00	0.95			0.86	0.86	0.97	1.00	0.88			
Frpb, ped/bikes	1.00	1.00			0.99	0.97	1.00	1.00	0.86			
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Frt	1.00	1.00			0.96	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	1770	3539			4562	1322	3433	1863	2403			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	1770	3539			4562	1322	3433	1863	2403			
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	224	1146	0	0	568	464	260	10	620	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	537	0	0	0
Lane Group Flow (vph)	224	1146	0	0	795	237	260	10	83	0	0	0
Confl. Peds. (#/hr)			81	81		10			32			
Confl. Bikes (#/hr)			3			5						1
Turn Type	Prot	NA			NA	Perm	Split	NA	Perm			
Protected Phases	5	2			6		8	8				
Permitted Phases						6			8			
Actuated Green, G (s)	20.0	59.4			34.7	34.7	16.0	16.0	16.0			
Effective Green, g (s)	20.0	59.4			34.7	34.7	16.0	16.0	16.0			
Actuated g/C Ratio	0.17	0.49			0.29	0.29	0.13	0.13	0.13			
Clearance Time (s)	4.7	5.5			5.5	5.5	5.1	5.1	5.1			
Vehicle Extension (s)	2.0	2.0			2.0	2.0	2.0	2.0	2.0			
Lane Grp Cap (vph)	295	1751			1319	382	457	248	320			
v/s Ratio Prot	c0.13	c0.32			0.17		c0.08	0.01				
v/s Ratio Perm						0.18			0.03			
v/c Ratio	0.76	0.65			0.60	0.62	0.57	0.04	0.26			
Uniform Delay, d1	47.7	22.6			36.7	36.9	48.8	45.3	46.7			
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	9.6	1.9			2.0	7.4	1.0	0.0	0.2			
Delay (s)	57.3	24.6			38.8	44.3	49.7	45.3	46.8			
Level of Service	E	C			D	D	D	D	D			
Approach Delay (s)		29.9			40.0			47.7			0.0	
Approach LOS		C			D			D			A	

Intersection Summary			
HCM 2000 Control Delay	37.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.3
Intersection Capacity Utilization	62.9%	ICU Level of Service	B
Analysis Period (min)	15		

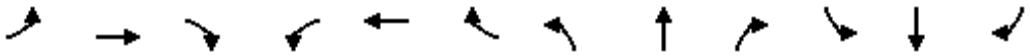
c Critical Lane Group

Intersection	
Intersection Delay, s/veh	13.9
Intersection LOS	B

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	55	50	165	55	155	340
Future Vol, veh/h	55	50	165	55	155	340
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	59	54	177	59	167	366
Number of Lanes	1	0	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	9.7	9.8	16.6
HCM LOS	A	A	C

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	52%	31%
Vol Thru, %	75%	0%	69%
Vol Right, %	25%	48%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	220	105	495
LT Vol	0	55	155
Through Vol	165	0	340
RT Vol	55	50	0
Lane Flow Rate	237	113	532
Geometry Grp	1	1	1
Degree of Util (X)	0.307	0.171	0.675
Departure Headway (Hd)	4.674	5.451	4.567
Convergence, Y/N	Yes	Yes	Yes
Cap	764	653	788
Service Time	2.731	3.527	2.612
HCM Lane V/C Ratio	0.31	0.173	0.675
HCM Control Delay	9.8	9.7	16.6
HCM Lane LOS	A	A	C
HCM 95th-tile Q	1.3	0.6	5.3



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	425	275	0	0	480	430	155	0	90	0	0	0
Future Volume (vph)	425	275	0	0	480	430	155	0	90	0	0	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			1.00	1.00		1.00	1.00			
Frpb, ped/bikes	1.00	1.00			1.00	0.93		1.00	0.90			
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)	1770	1863			1863	1477		1770	1422			
Flt Permitted	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (perm)	1770	1863			1863	1477		1770	1422			
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)	452	293	0	0	511	457	165	0	96	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	452	293	0	0	511	457	0	165	96	0	0	0
Confl. Peds. (#/hr)	1		1			11	1		15			
Confl. Bikes (#/hr)						20			15			
Turn Type	Prot	NA			NA	Perm	Split	NA	Perm			
Protected Phases	5	2			6		4	4				
Permitted Phases						6			4			
Actuated Green, G (s)	23.0	59.8			32.1	32.1		13.7	13.7			
Effective Green, g (s)	23.7	61.8			34.1	34.1		14.8	14.8			
Actuated g/C Ratio	0.25	0.65			0.36	0.36		0.15	0.15			
Clearance Time (s)	4.7	6.0			6.0	6.0		5.1	5.1			
Vehicle Extension (s)	3.0	2.0			2.0	2.0		2.0	2.0			
Lane Grp Cap (vph)	437	1201			663	525		273	219			
v/s Ratio Prot	c0.26	0.16			0.27			c0.09				
v/s Ratio Perm						c0.31			0.07			
v/c Ratio	1.03	0.24			0.77	0.87		0.60	0.44			
Uniform Delay, d1	36.0	7.2			27.4	28.8		37.8	36.7			
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Incremental Delay, d2	52.2	0.0			5.0	14.2		2.6	0.5			
Delay (s)	88.2	7.2			32.4	43.0		40.4	37.2			
Level of Service	F	A			C	D		D	D			
Approach Delay (s)		56.4			37.4			39.2			0.0	
Approach LOS		E			D			D			A	

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)	95.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	69.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Intersection Delay, s/veh	6.0
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	2	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	315	301	28	17
Demand Flow Rate, veh/h	321	307	28	17
Vehicles Circulating, veh/h	54	30	295	307
Vehicles Exiting, veh/h	270	293	80	30
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	3	9	10
Ped Cap Adj	1.000	1.000	0.999	0.999
Approach Delay, s/veh	6.2	6.0	4.6	4.6
Approach LOS	A	A	A	A

Lane	Left	Right	Left	Left	Left
Designated Moves	L	TR	TR	LTR	LR
Assumed Moves	L	TR	TR	LTR	LR
RT Channelized					
Lane Util	0.037	0.963	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193	5.193	5.193
Entry Flow, veh/h	12	309	307	28	17
Cap Entry Lane, veh/h	1071	1071	1097	841	831
Entry HV Adj Factor	1.000	0.979	0.981	0.996	0.994
Flow Entry, veh/h	12	303	301	28	17
Cap Entry, veh/h	1071	1048	1075	837	825
V/C Ratio	0.011	0.289	0.280	0.033	0.020
Control Delay, s/veh	3.5	6.3	6.0	4.6	4.6
LOS	A	A	A	A	A
95th %tile Queue, veh	0	1	1	0	0

Movement	EBL2	EBT	WBT	WBR	NBL2	NBL	NBR
Lane Configurations							
Traffic Volume (vph)	265	375	795	305	253	20	277
Future Volume (vph)	265	375	795	305	253	20	277
Ideal Flow (vphpl)	1900	1900	1200	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.91	0.86	1.00	0.97	1.00	0.88
Frpb, ped/bikes	1.00	1.00	1.00	0.89	1.00	1.00	0.91
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	0.95	1.00
Satd. Flow (prot)	1770	5085	4047	1274	3433	1770	2531
Flt Permitted	0.95	1.00	1.00	1.00	0.95	0.95	1.00
Satd. Flow (perm)	1770	5085	4047	1274	3433	1770	2531
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	288	408	864	332	275	22	301
RTOR Reduction (vph)	0	0	0	0	0	0	0
Lane Group Flow (vph)	288	408	864	332	275	22	301
Confl. Peds. (#/hr)				38			29
Confl. Bikes (#/hr)				4			10
Parking (#/hr)				0			
Turn Type	Prot	NA	NA	Perm	Prot	Prot	Perm
Protected Phases	5	2	6		8	8	
Permitted Phases				6			8
Actuated Green, G (s)	26.0	62.4	31.7	31.7	15.0	15.0	15.0
Effective Green, g (s)	26.7	63.9	33.2	33.2	17.1	17.1	17.1
Actuated g/C Ratio	0.21	0.49	0.26	0.26	0.13	0.13	0.13
Clearance Time (s)	4.7	5.5	5.5	5.5	6.1	6.1	6.1
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	363	2499	1033	325	451	232	332
v/s Ratio Prot	c0.16	0.08	0.21		0.08	0.01	
v/s Ratio Perm				c0.26			c0.12
v/c Ratio	0.79	0.16	0.84	1.02	0.61	0.09	0.91
Uniform Delay, d1	49.0	18.3	45.8	48.4	53.3	49.6	55.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.6	0.1	8.0	55.5	1.6	0.1	26.5
Delay (s)	59.6	18.4	53.9	103.9	54.9	49.7	82.1
Level of Service	E	B	D	F	D	D	F
Approach Delay (s)		35.5	67.8				
Approach LOS		D	E				

Intersection Summary			
HCM 2000 Control Delay	58.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	56.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL2	EBL	EBT	WBT	WBR	WBR2	NBL2	NBL	NBR
Lane Configurations									
Traffic Volume (vph)	265	20	375	795	305	5	253	20	277
Future Volume (vph)	265	20	375	795	305	5	253	20	277
Ideal Flow (vphpl)	1900	1900	1900	1200	1900	1900	1900	1900	1900
Total Lost time (s)		4.7	4.0	4.0	4.0		4.0	4.0	4.0
Lane Util. Factor		1.00	0.91	0.86	1.00		0.97	1.00	0.88
Frpb, ped/bikes		1.00	1.00	1.00	0.81		1.00	1.00	0.91
Flpb, ped/bikes		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt		1.00	1.00	1.00	0.85		1.00	1.00	0.85
Flt Protected		0.95	1.00	1.00	1.00		0.95	0.95	1.00
Satd. Flow (prot)		1770	5085	4047	1153		3433	1770	2531
Flt Permitted		0.95	1.00	1.00	1.00		0.95	0.95	1.00
Satd. Flow (perm)		1770	5085	4047	1153		3433	1770	2531
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	288	22	408	864	332	5	275	22	301
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	310	408	864	337	0	275	22	301
Confl. Peds. (#/hr)					38	38			29
Confl. Bikes (#/hr)					4	4			10
Parking (#/hr)					0				
Turn Type	Prot	Prot	NA	NA	Perm		Prot	Prot	Perm
Protected Phases	5	5	2	6			8	8	
Permitted Phases					6				8
Actuated Green, G (s)		26.0	62.4	31.7	31.7		15.0	15.0	15.0
Effective Green, g (s)		26.0	63.9	33.2	33.2		17.1	17.1	17.1
Actuated g/C Ratio		0.20	0.49	0.26	0.26		0.13	0.13	0.13
Clearance Time (s)		4.7	5.5	5.5	5.5		6.1	6.1	6.1
Vehicle Extension (s)		2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)		354	2499	1033	294		451	232	332
v/s Ratio Prot		c0.18	0.08	0.21			0.08	0.01	
v/s Ratio Perm					c0.29				c0.12
v/c Ratio		0.88	0.16	0.84	1.15		0.61	0.09	0.91
Uniform Delay, d1		50.4	18.3	45.8	48.4		53.3	49.6	55.7
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		20.2	0.1	8.0	98.0		1.6	0.1	26.5
Delay (s)		70.6	18.4	53.9	146.4		54.9	49.7	82.1
Level of Service		E	B	D	F		D	D	F
Approach Delay (s)			40.9	79.8					
Approach LOS			D	E					

Intersection Summary			
HCM 2000 Control Delay	66.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.7
Intersection Capacity Utilization	58.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

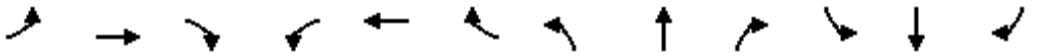
Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	365	15	5	580	20	15	0	10	25	0	10
Future Vol, veh/h	10	365	15	5	580	20	15	0	10	25	0	10
Conflicting Peds, #/hr	52	0	45	45	0	52	26	0	5	5	0	26
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	392	16	5	624	22	16	0	11	27	0	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	697	0	0	454	0	0	1144	1175	451	1129	1172	712
Stage 1	-	-	-	-	-	-	467	467	-	697	697	-
Stage 2	-	-	-	-	-	-	677	708	-	432	475	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	899	-	-	1107	-	-	177	192	608	181	192	432
Stage 1	-	-	-	-	-	-	576	562	-	431	443	-
Stage 2	-	-	-	-	-	-	443	438	-	602	557	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	880	-	-	1102	-	-	159	173	583	166	173	404
Mov Cap-2 Maneuver	-	-	-	-	-	-	159	173	-	166	173	-
Stage 1	-	-	-	-	-	-	546	532	-	406	421	-
Stage 2	-	-	-	-	-	-	419	416	-	579	528	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.1	23.3	27.1
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	224	880	-	-	1102	-	-	200
HCM Lane V/C Ratio	0.12	0.012	-	-	0.005	-	-	0.188
HCM Control Delay (s)	23.3	9.1	0	-	8.3	0	-	27.1
HCM Lane LOS	C	A	A	-	A	A	-	D
HCM 95th %tile Q(veh)	0.4	0	-	-	0	-	-	0.7



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	260	455	0	0	540	525	240	10	290	0	0	0
Future Volume (vph)	260	455	0	0	540	525	240	10	290	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1200	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0			
Lane Util. Factor	1.00	0.95			0.86	0.86	0.97	1.00	0.88			
Frpb, ped/bikes	1.00	1.00			0.97	0.90	1.00	1.00	0.75			
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Frt	1.00	1.00			0.95	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	1770	3539			2796	1231	3433	1863	2092			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	1770	3539			2796	1231	3433	1863	2092			
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	263	460	0	0	545	530	242	10	293	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	263	460	0	0	810	265	242	10	293	0	0	0
Confl. Peds. (#/hr)			70	70		57			70	70		
Confl. Bikes (#/hr)			1						10			1
Turn Type	Prot	NA			NA	Perm	Split	NA	Perm			
Protected Phases	5	2			6		8	8				
Permitted Phases						6			8			
Actuated Green, G (s)	31.0	62.4			26.7	26.7	20.0	20.0	20.0			
Effective Green, g (s)	31.7	63.9			28.2	28.2	21.1	21.1	21.1			
Actuated g/C Ratio	0.24	0.49			0.22	0.22	0.16	0.16	0.16			
Clearance Time (s)	4.7	5.5			5.5	5.5	5.1	5.1	5.1			
Vehicle Extension (s)	2.0	2.0			2.0	2.0	2.0	2.0	2.0			
Lane Grp Cap (vph)	431	1739			606	267	557	302	339			
v/s Ratio Prot	c0.15	0.13			c0.29		0.07	0.01				
v/s Ratio Perm						0.22			c0.14			
v/c Ratio	0.61	0.26			1.34	0.99	0.43	0.03	0.86			
Uniform Delay, d1	43.7	19.3			50.9	50.8	49.1	45.9	53.1			
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	1.8	0.4			162.5	53.2	0.2	0.0	19.2			
Delay (s)	45.5	19.7			213.4	104.0	49.3	45.9	72.3			
Level of Service	D	B			F	F	D	D	E			
Approach Delay (s)		29.1			186.4			61.6			0.0	
Approach LOS		C			F			E			A	

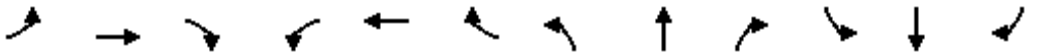
Intersection Summary			
HCM 2000 Control Delay	108.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	55.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Intersection Delay, s/veh	8.6
Intersection LOS	A

Approach	WB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	133	572	262
Demand Flow Rate, veh/h	136	583	267
Vehicles Circulating, veh/h	419	57	51
Vehicles Exiting, veh/h	221	261	504
Follow-Up Headway, s	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	42	15	0
Ped Cap Adj	0.994	0.998	1.000
Approach Delay, s/veh	7.0	10.3	5.8
Approach LOS	A	B	A

Lane	Left	Left	Left
Designated Moves	LR	TR	LT
Assumed Moves	LR	TR	LT
RT Channelized			
Lane Util	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193
Entry Flow, veh/h	136	583	267
Cap Entry Lane, veh/h	743	1067	1074
Entry HV Adj Factor	0.978	0.981	0.981
Flow Entry, veh/h	133	572	262
Cap Entry, veh/h	723	1045	1053
V/C Ratio	0.184	0.547	0.249
Control Delay, s/veh	7.0	10.3	5.8
LOS	A	B	A
95th %tile Queue, veh	1	3	1



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	265	740	0	0	385	235	235	5	215	0	0	0
Future Volume (vph)	265	740	0	0	385	235	235	5	215	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	6.0			6.0	6.0		5.1	5.1			
Lane Util. Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Frpb, ped/bikes	1.00	1.00			1.00	0.91		1.00	0.95			
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)	1770	1863			1863	1440		1776	1506			
Flt Permitted	0.95	1.00			1.00	1.00		0.95	1.00			
Satd. Flow (perm)	1770	1863			1863	1440		1776	1506			
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)	279	779	0	0	405	247	247	5	226	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	279	779	0	0	405	247	0	252	226	0	0	0
Confl. Peds. (#/hr)			21			15			12			
Confl. Bikes (#/hr)			7			25						
Turn Type	Prot	NA			NA	Perm	Split	NA	Perm			
Protected Phases	5	2			6		4	4				
Permitted Phases						6			4			
Actuated Green, G (s)	21.5	54.2			28.0	28.0		20.4	20.4			
Effective Green, g (s)	21.5	54.2			28.0	28.0		20.4	20.4			
Actuated g/C Ratio	0.21	0.54			0.28	0.28		0.20	0.20			
Clearance Time (s)	4.7	6.0			6.0	6.0		5.1	5.1			
Vehicle Extension (s)	3.0	2.0			2.0	2.0		2.0	2.0			
Lane Grp Cap (vph)	380	1008			521	402		361	306			
v/s Ratio Prot	0.16	c0.42			0.22			0.14				
v/s Ratio Perm						0.17			c0.15			
v/c Ratio	0.73	0.77			0.78	0.61		0.70	0.74			
Uniform Delay, d1	36.6	18.1			33.2	31.4		37.0	37.4			
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00			
Incremental Delay, d2	7.2	3.4			6.6	2.0		4.7	7.8			
Delay (s)	43.8	21.5			39.7	33.3		41.7	45.1			
Level of Service	D	C			D	C		D	D			
Approach Delay (s)		27.4			37.3			43.3			0.0	
Approach LOS		C			D			D			A	

Intersection Summary			
HCM 2000 Control Delay	33.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	100.1	Sum of lost time (s)	19.8
Intersection Capacity Utilization	62.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Intersection Delay, s/veh	6.9
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	2	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	451	277	76	36
Demand Flow Rate, veh/h	460	283	77	36
Vehicles Circulating, veh/h	62	55	412	293
Vehicles Exiting, veh/h	267	434	110	44
Follow-Up Headway, s	3.186	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	0	3	3	15
Ped Cap Adj	1.000	1.000	1.000	0.998
Approach Delay, s/veh	7.7	6.0	6.0	4.7
Approach LOS	A	A	A	A

Lane	Left	Right	Left	Left	Left
Designated Moves	L	TR	TR	LTR	LR
Assumed Moves	L	TR	TR	LTR	LR
RT Channelized					
Lane Util	0.048	0.952	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193	5.193	5.193
Entry Flow, veh/h	22	438	283	77	36
Cap Entry Lane, veh/h	1062	1062	1069	748	843
Entry HV Adj Factor	1.000	0.980	0.981	0.984	0.992
Flow Entry, veh/h	22	429	277	76	36
Cap Entry, veh/h	1062	1041	1048	736	834
V/C Ratio	0.021	0.412	0.265	0.103	0.043
Control Delay, s/veh	3.6	7.9	6.0	6.0	4.7
LOS	A	A	A	A	A
95th %tile Queue, veh	0	2	1	0	0

Movement	EBL2	EBT	WBT	WBR	NBL2	NBL	NBR
Lane Configurations							
Traffic Volume (vph)	175	375	670	255	152	15	418
Future Volume (vph)	175	375	670	255	152	15	418
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	5.5	5.5	5.5	6.1	6.1	6.1
Lane Util. Factor	1.00	0.91	0.86	1.00	0.97	1.00	0.88
Frpb, ped/bikes	1.00	1.00	1.00	0.90	1.00	1.00	0.88
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	0.95	1.00
Satd. Flow (prot)	1770	5085	6408	1279	3433	1770	2466
Flt Permitted	0.95	1.00	1.00	1.00	0.95	0.95	1.00
Satd. Flow (perm)	1770	5085	6408	1279	3433	1770	2466
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	182	391	698	266	158	16	435
RTOR Reduction (vph)	0	0	0	0	0	0	0
Lane Group Flow (vph)	182	391	698	266	158	16	435
Confl. Peds. (#/hr)				36			34
Confl. Bikes (#/hr)				5			10
Parking (#/hr)				0			
Turn Type	Prot	NA	NA	Perm	Prot	Prot	Perm
Protected Phases	5	2	6		8	8	
Permitted Phases				6			8
Actuated Green, G (s)	20.0	61.4	36.7	36.7	15.0	15.0	15.0
Effective Green, g (s)	20.0	61.4	36.7	36.7	15.0	15.0	15.0
Actuated g/C Ratio	0.15	0.47	0.28	0.28	0.12	0.12	0.12
Clearance Time (s)	4.7	5.5	5.5	5.5	6.1	6.1	6.1
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)	272	2401	1809	361	396	204	284
v/s Ratio Prot	c0.10	0.08	0.11		0.05	0.01	
v/s Ratio Perm				c0.21			c0.18
v/c Ratio	0.67	0.16	0.39	0.74	0.40	0.08	1.53
Uniform Delay, d1	51.9	19.6	37.6	42.3	53.3	51.3	57.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.8	0.1	0.6	12.6	0.2	0.1	256.3
Delay (s)	56.7	19.8	38.2	54.9	53.6	51.4	313.8
Level of Service	E	B	D	D	D	D	F
Approach Delay (s)		31.5	42.8				
Approach LOS		C	D				

Intersection Summary			
HCM 2000 Control Delay	95.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.3
Intersection Capacity Utilization	56.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL2	EBL	EBT	WBT	WBR	WBR2	NBL2	NBL	NBR
Lane Configurations									
Traffic Volume (vph)	175	75	375	670	255	10	152	15	418
Future Volume (vph)	175	75	375	670	255	10	152	15	418
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.7	5.5	5.5	5.5		6.1	6.1	6.1
Lane Util. Factor		1.00	0.91	0.86	1.00		0.97	1.00	0.88
Frpb, ped/bikes		1.00	1.00	1.00	0.82		1.00	1.00	0.88
Flpb, ped/bikes		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt		1.00	1.00	1.00	0.85		1.00	1.00	0.85
Flt Protected		0.95	1.00	1.00	1.00		0.95	0.95	1.00
Satd. Flow (prot)		1770	5085	6408	1163		3433	1770	2466
Flt Permitted		0.95	1.00	1.00	1.00		0.95	0.95	1.00
Satd. Flow (perm)		1770	5085	6408	1163		3433	1770	2466
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	182	78	391	698	266	10	158	16	435
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	260	391	698	276	0	158	16	435
Confl. Peds. (#/hr)					36	36			34
Confl. Bikes (#/hr)					5	5			10
Parking (#/hr)					0				
Turn Type	Prot	Prot	NA	NA	Perm		Prot	Prot	Perm
Protected Phases	5	5	2	6			8	8	
Permitted Phases					6				8
Actuated Green, G (s)		20.0	61.4	36.7	36.7		15.0	15.0	15.0
Effective Green, g (s)		20.0	61.4	36.7	36.7		15.0	15.0	15.0
Actuated g/C Ratio		0.15	0.47	0.28	0.28		0.12	0.12	0.12
Clearance Time (s)		4.7	5.5	5.5	5.5		6.1	6.1	6.1
Vehicle Extension (s)		2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)		272	2401	1809	328		396	204	284
v/s Ratio Prot		c0.15	0.08	0.11			0.05	0.01	
v/s Ratio Perm					c0.24				c0.18
v/c Ratio		0.96	0.16	0.39	0.84		0.40	0.08	1.53
Uniform Delay, d1		54.6	19.6	37.6	43.9		53.3	51.3	57.5
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		41.9	0.1	0.6	22.2		0.2	0.1	256.3
Delay (s)		96.5	19.8	38.2	66.1		53.6	51.4	313.8
Level of Service		F	B	D	E		D	D	F
Approach Delay (s)			50.4	46.1					
Approach LOS			D	D					

Intersection Summary			
HCM 2000 Control Delay	100.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.3
Intersection Capacity Utilization	56.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

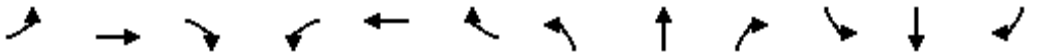
Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	15	530	25	15	405	10	10	0	20	10	0	10
Future Vol, veh/h	15	530	25	15	405	10	10	0	20	10	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	558	26	16	426	11	11	0	21	11	0	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	437	0	0	584	0	0	1071	1071	571	1076	1079	432
Stage 1	-	-	-	-	-	-	603	603	-	463	463	-
Stage 2	-	-	-	-	-	-	468	468	-	613	616	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1123	-	-	991	-	-	198	221	520	197	218	624
Stage 1	-	-	-	-	-	-	486	488	-	579	564	-
Stage 2	-	-	-	-	-	-	575	561	-	480	482	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1123	-	-	991	-	-	188	212	520	183	209	624
Mov Cap-2 Maneuver	-	-	-	-	-	-	188	212	-	183	209	-
Stage 1	-	-	-	-	-	-	476	478	-	567	552	-
Stage 2	-	-	-	-	-	-	553	549	-	451	472	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.3	17.2	18.7
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	327	1123	-	-	991	-	-	283
HCM Lane V/C Ratio	0.097	0.014	-	-	0.016	-	-	0.074
HCM Control Delay (s)	17.2	8.3	0	-	8.7	0	-	18.7
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	0.2



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	215	1100	0	0	545	445	250	10	595	0	0	0
Future Volume (vph)	215	1100	0	0	545	445	250	10	595	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	5.5			5.5	5.5	5.1	5.1	5.1			
Lane Util. Factor	1.00	0.95			0.86	0.86	0.97	1.00	0.88			
Frpb, ped/bikes	1.00	1.00			0.99	0.97	1.00	1.00	0.89			
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Frt	1.00	1.00			0.96	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)	1770	3539			4560	1320	3433	1863	2475			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)	1770	3539			4560	1320	3433	1863	2475			
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	224	1146	0	0	568	464	260	10	620	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	224	1146	0	0	795	237	260	10	620	0	0	0
Confl. Peds. (#/hr)			81	81		10			32			
Confl. Bikes (#/hr)			3			5			10			1
Turn Type	Prot	NA			NA	Perm	Split	NA	Perm			
Protected Phases	5	2			6		8	8				
Permitted Phases						6			8			
Actuated Green, G (s)	20.0	50.4			25.7	25.7	25.0	25.0	25.0			
Effective Green, g (s)	20.0	50.4			25.7	25.7	25.0	25.0	25.0			
Actuated g/C Ratio	0.17	0.42			0.21	0.21	0.21	0.21	0.21			
Clearance Time (s)	4.7	5.5			5.5	5.5	5.1	5.1	5.1			
Vehicle Extension (s)	2.0	2.0			2.0	2.0	2.0	2.0	2.0			
Lane Grp Cap (vph)	295	1486			976	282	715	388	515			
v/s Ratio Prot	0.13	c0.32			0.17		0.08	0.01				
v/s Ratio Perm						0.18			c0.25			
v/c Ratio	0.76	0.77			0.81	0.84	0.36	0.03	1.20			
Uniform Delay, d1	47.7	29.9			44.9	45.2	40.7	37.8	47.5			
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Incremental Delay, d2	9.6	3.9			7.4	24.9	0.1	0.0	109.1			
Delay (s)	57.3	33.8			52.3	70.1	40.8	37.8	156.6			
Level of Service	E	C			D	E	D	D	F			
Approach Delay (s)		37.6			56.4			121.4			0.0	
Approach LOS		D			E			F			A	

Intersection Summary			
HCM 2000 Control Delay	66.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	19.3
Intersection Capacity Utilization	62.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Intersection Delay, s/veh	8.1
Intersection LOS	A

Approach	WB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	113	236	533
Demand Flow Rate, veh/h	115	241	543
Vehicles Circulating, veh/h	181	170	60
Vehicles Exiting, veh/h	230	433	236
Follow-Up Headway, s	3.186	3.186	3.186
Ped Vol Crossing Leg, #/h	52	21	0
Ped Cap Adj	0.993	0.997	1.000
Approach Delay, s/veh	5.1	6.4	9.5
Approach LOS	A	A	A

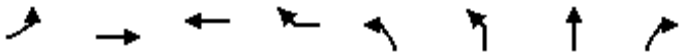
Lane	Left	Left	Left
Designated Moves	LR	TR	LT
Assumed Moves	LR	TR	LT
RT Channelized			
Lane Util	1.000	1.000	1.000
Critical Headway, s	5.193	5.193	5.193
Entry Flow, veh/h	115	241	543
Cap Entry Lane, veh/h	943	953	1064
Entry HV Adj Factor	0.983	0.981	0.981
Flow Entry, veh/h	113	236	533
Cap Entry, veh/h	920	933	1044
V/C Ratio	0.123	0.254	0.510
Control Delay, s/veh	5.1	6.4	9.5
LOS	A	A	A
95th %tile Queue, veh	0	1	3

APPENDIX D: QUEUING WORKSHEETS

Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Group Flow (vph)	434	279	503	448	159	95
v/c Ratio	0.81	0.20	0.69	0.77	0.62	0.31
Control Delay	46.3	5.0	32.4	38.3	50.2	10.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.3	5.0	32.4	38.3	50.2	10.2
Queue Length 50th (ft)	248	42	253	236	96	0
Queue Length 95th (ft)	#486	107	448	#474	159	41
Internal Link Dist (ft)		2732	1543		809	
Turn Bay Length (ft)	250			100		450
Base Capacity (vph)	538	1396	740	590	807	774
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.81	0.20	0.68	0.76	0.20	0.12

Intersection Summary

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



Lane Group	EBL	EBT	WBT	WBR	NBL2	NBL	NBT	NBR
Lane Group Flow (vph)	296	393	833	320	242	16	156	145
v/c Ratio	0.84	0.16	0.50	1.08	0.70	0.09	0.78	0.54
Control Delay	70.8	18.5	42.7	120.2	67.5	53.1	64.2	16.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.8	18.5	42.7	120.2	67.5	53.1	64.2	16.1
Queue Length 50th (ft)	242	65	176	~307	102	12	91	0
Queue Length 95th (ft)	#392	88	214	#503	146	36	#193	67
Internal Link Dist (ft)		1035	1229				325	
Turn Bay Length (ft)				100	150	150		
Base Capacity (vph)	354	2514	1655	297	396	204	220	286
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.84	0.16	0.50	1.08	0.61	0.08	0.71	0.51

Intersection Summary

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

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

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	253	445	792	259	233	6	281
v/c Ratio	0.60	0.24	1.12	0.83	0.65	0.03	0.62
Control Delay	50.9	17.4	115.0	69.1	63.8	49.8	11.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.9	17.4	115.0	69.1	63.8	49.8	11.9
Queue Length 50th (ft)	191	102	~293	239	99	5	0
Queue Length 95th (ft)	284	148	#428	#460	137	18	44
Internal Link Dist (ft)		1716	1031			829	
Turn Bay Length (ft)				250	250		250
Base Capacity (vph)	422	1870	709	312	437	237	493
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	0.60	0.24	1.12	0.83	0.53	0.03	0.57

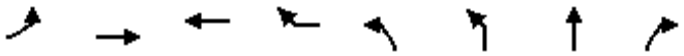
Intersection Summary

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

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

Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Group Flow (vph)	267	753	398	242	246	223
v/c Ratio	0.62	0.66	0.70	0.46	0.62	0.47
Control Delay	35.1	12.8	31.9	14.9	36.4	12.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.1	12.8	31.9	14.9	36.4	12.3
Queue Length 50th (ft)	105	187	153	40	98	17
Queue Length 95th (ft)	251	400	334	130	234	94
Internal Link Dist (ft)		2732	1543		809	
Turn Bay Length (ft)	250			100		450
Base Capacity (vph)	769	1691	1058	879	1157	1042
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.45	0.38	0.28	0.21	0.21

Intersection Summary



Lane Group	EBL	EBT	WBT	WBR	NBL2	NBL	NBT	NBR
Lane Group Flow (vph)	248	377	671	261	132	13	218	212
v/c Ratio	0.91	0.15	0.35	0.76	0.38	0.07	0.91	0.65
Control Delay	90.2	19.1	37.1	58.0	57.0	52.5	69.0	16.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	90.2	19.1	37.1	58.0	57.0	52.5	69.0	16.6
Queue Length 50th (ft)	208	64	132	204	53	10	103	0
Queue Length 95th (ft)	#367	86	162	#345	86	31	#250	82
Internal Link Dist (ft)		1035	1229				325	
Turn Bay Length (ft)				100	150	150		
Base Capacity (vph)	272	2468	1894	343	396	204	257	343
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.91	0.15	0.35	0.76	0.33	0.06	0.85	0.62

Intersection Summary

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

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	215	1121	778	232	251	6	601
v/c Ratio	0.73	0.63	0.58	0.60	0.57	0.03	0.71
Control Delay	62.8	24.8	39.0	45.3	53.5	42.8	8.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.8	24.8	39.0	45.3	53.5	42.8	8.6
Queue Length 50th (ft)	160	321	197	177	95	4	0
Queue Length 95th (ft)	#265	441	265	#319	131	16	53
Internal Link Dist (ft)		1716	1031			1275	
Turn Bay Length (ft)				250	250		250
Base Capacity (vph)	295	1766	1337	387	715	388	1001
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	0.73	0.63	0.58	0.60	0.35	0.02	0.60

Intersection Summary

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

Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Group Flow (vph)	434	279	503	448	159	95
v/c Ratio	0.96	0.23	0.74	0.85	0.58	0.41
Control Delay	72.5	10.2	37.4	47.4	47.5	43.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	72.5	10.2	37.4	47.4	47.5	43.9
Queue Length 50th (ft)	217	39	212	199	75	44
Queue Length 95th (ft)	#597	169	#574	#574	176	115
Internal Link Dist (ft)		2732	1543		809	
Turn Bay Length (ft)	250			100		450
Base Capacity (vph)	450	1237	680	529	705	589
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.96	0.23	0.74	0.85	0.23	0.16

Intersection Summary

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

Lane Group	EBL2	EBT	WBT	WBR	NBL2	NBL	NBR
Lane Group Flow (vph)	279	393	833	318	260	16	284
v/c Ratio	0.77	0.16	0.80	0.97	0.58	0.07	0.86
Control Delay	63.9	18.4	52.2	91.7	58.9	50.5	80.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.9	18.4	52.2	91.7	58.9	50.5	80.2
Queue Length 50th (ft)	224	65	192	267	107	12	135
Queue Length 95th (ft)	#351	86	235	#459	154	35	#219
Internal Link Dist (ft)		1035	1229				
Turn Bay Length (ft)				100	150	150	
Base Capacity (vph)	363	2505	1038	327	451	232	332
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	0.77	0.16	0.80	0.97	0.58	0.07	0.86

Intersection Summary

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

Lane Group	EBL	EBT	WBT	WBR	NBL2	NBL	NBR
Lane Group Flow (vph)	296	393	833	320	260	16	284
v/c Ratio	0.84	0.16	0.80	1.08	0.58	0.07	0.86
Control Delay	70.8	18.4	52.2	121.8	58.9	50.5	80.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.8	18.4	52.2	121.8	58.9	50.5	80.2
Queue Length 50th (ft)	242	65	192	~302	107	12	135
Queue Length 95th (ft)	#392	86	235	#492	154	35	#219
Internal Link Dist (ft)		1035	1229				
Turn Bay Length (ft)				100	150	150	
Base Capacity (vph)	354	2505	1038	295	451	232	332
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	0.84	0.16	0.80	1.08	0.58	0.07	0.86

Intersection Summary

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

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

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	253	445	792	259	233	6	281
v/c Ratio	0.59	0.26	0.82	0.97	0.42	0.02	0.89
Control Delay	49.8	19.7	56.9	98.6	51.6	46.2	82.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.8	19.7	56.9	98.6	51.6	46.2	82.5
Queue Length 50th (ft)	189	112	248	253	92	4	133
Queue Length 95th (ft)	282	147	304	#456	134	17	#223
Internal Link Dist (ft)		1716	1031			829	
Turn Bay Length (ft)				250	250		250
Base Capacity (vph)	431	1739	960	267	557	302	316
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	0.59	0.26	0.82	0.97	0.42	0.02	0.89

Intersection Summary

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

Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Group Flow (vph)	267	753	398	242	246	223
v/c Ratio	0.71	0.75	0.79	0.63	0.68	0.72
Control Delay	53.5	27.8	50.1	45.4	51.1	55.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.5	27.8	50.1	45.4	51.1	55.8
Queue Length 50th (ft)	196	468	288	166	181	166
Queue Length 95th (ft)	#341	725	#486	282	279	262
Internal Link Dist (ft)		2732	1543		809	
Turn Bay Length (ft)	250			100		450
Base Capacity (vph)	530	1295	728	554	628	535
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.58	0.55	0.44	0.39	0.42

Intersection Summary

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

Lane Group	EBL2	EBT	WBT	WBR	NBL2	NBL	NBR
Lane Group Flow (vph)	176	377	671	254	148	13	415
v/c Ratio	0.65	0.16	0.37	0.70	0.37	0.06	1.44
Control Delay	63.8	19.8	38.1	53.8	56.2	52.2	255.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.8	19.8	38.1	53.8	56.2	52.2	255.5
Queue Length 50th (ft)	141	64	132	192	60	10	~268
Queue Length 95th (ft)	222	86	162	296	95	31	#385
Internal Link Dist (ft)		1035	1229				
Turn Bay Length (ft)				100	150	150	
Base Capacity (vph)	272	2401	1809	361	396	204	289
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	0.65	0.16	0.37	0.70	0.37	0.06	1.44

Intersection Summary

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

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

Lane Group	EBL	EBT	WBT	WBR	NBL2	NBL	NBR
Lane Group Flow (vph)	248	377	671	261	148	13	415
v/c Ratio	0.91	0.16	0.37	0.80	0.37	0.06	1.44
Control Delay	90.2	19.8	38.1	62.1	56.2	52.2	255.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	90.2	19.8	38.1	62.1	56.2	52.2	255.5
Queue Length 50th (ft)	208	64	132	204	60	10	~268
Queue Length 95th (ft)	#367	86	162	#345	95	31	#385
Internal Link Dist (ft)		1035	1229				
Turn Bay Length (ft)				100	150	150	
Base Capacity (vph)	272	2401	1809	328	396	204	289
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	0.91	0.16	0.37	0.80	0.37	0.06	1.44

Intersection Summary

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

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

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	215	1121	778	232	251	6	601
v/c Ratio	0.73	0.75	0.80	0.82	0.35	0.02	1.17
Control Delay	62.8	33.5	51.7	68.9	42.2	38.0	136.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.8	33.5	51.7	68.9	42.2	38.0	136.8
Queue Length 50th (ft)	160	381	223	201	86	4	~314
Queue Length 95th (ft)	#265	466	276	#356	126	16	#441
Internal Link Dist (ft)		1716	1031			1275	
Turn Bay Length (ft)				250	250		250
Base Capacity (vph)	295	1486	976	282	715	388	515
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	0.73	0.75	0.80	0.82	0.35	0.02	1.17

Intersection Summary

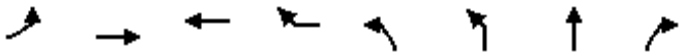
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Group Flow (vph)	452	293	511	457	165	96
v/c Ratio	0.85	0.21	0.70	0.78	0.63	0.31
Control Delay	50.3	5.1	32.7	38.9	51.0	10.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.3	5.1	32.7	38.9	51.0	10.1
Queue Length 50th (ft)	263	45	260	244	100	0
Queue Length 95th (ft)	#516	113	457	#489	165	42
Internal Link Dist (ft)		2732	1543		809	
Turn Bay Length (ft)	250			100		450
Base Capacity (vph)	532	1381	732	584	799	767
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.85	0.21	0.70	0.78	0.21	0.13

Intersection Summary

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



Lane Group	EBL	EBT	WBT	WBR	NBL2	NBL	NBT	NBR
Lane Group Flow (vph)	310	408	864	337	255	22	164	156
v/c Ratio	0.88	0.16	0.83	1.15	0.72	0.12	0.82	0.56
Control Delay	75.7	18.7	54.3	141.6	68.2	53.5	69.9	15.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	75.7	18.7	54.3	141.6	68.2	53.5	69.9	15.9
Queue Length 50th (ft)	256	69	204	~344	107	17	101	0
Queue Length 95th (ft)	#418	91	#260	#535	154	45	#216	70
Internal Link Dist (ft)		1035	1229				325	
Turn Bay Length (ft)				100	150	150		
Base Capacity (vph)	354	2501	1035	294	396	204	218	296
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.88	0.16	0.83	1.15	0.64	0.11	0.75	0.53

Intersection Summary

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

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

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	263	460	810	265	242	10	293
v/c Ratio	0.62	0.25	1.16	0.86	0.65	0.05	0.62
Control Delay	51.8	17.8	130.8	73.9	63.2	49.9	11.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.8	17.8	130.8	73.9	63.2	49.9	11.6
Queue Length 50th (ft)	200	108	~313	250	102	8	0
Queue Length 95th (ft)	295	154	#443	#477	141	24	45
Internal Link Dist (ft)		1716	1031			1275	
Turn Bay Length (ft)				250	250		250
Base Capacity (vph)	422	1856	698	307	439	238	504
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	0.62	0.25	1.16	0.86	0.55	0.04	0.58

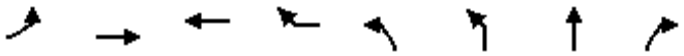
Intersection Summary

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

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

Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Group Flow (vph)	279	779	405	247	252	226
v/c Ratio	0.64	0.68	0.71	0.47	0.63	0.49
Control Delay	36.0	13.4	33.0	15.5	37.6	13.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.0	13.4	33.0	15.5	37.6	13.8
Queue Length 50th (ft)	113	203	161	43	103	23
Queue Length 95th (ft)	265	427	349	138	245	106
Internal Link Dist (ft)		2732	1543		809	
Turn Bay Length (ft)	250			100		450
Base Capacity (vph)	748	1674	1029	859	1125	1014
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.47	0.39	0.29	0.22	0.22

Intersection Summary



Lane Group	EBL	EBT	WBT	WBR	NBL2	NBL	NBT	NBR
Lane Group Flow (vph)	260	391	698	276	141	16	231	222
v/c Ratio	0.96	0.16	0.38	0.83	0.37	0.08	0.95	0.64
Control Delay	98.9	19.6	37.9	64.7	56.5	52.6	78.4	15.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	98.9	19.6	37.9	64.7	56.5	52.6	78.4	15.9
Queue Length 50th (ft)	220	67	138	220	57	12	123	0
Queue Length 95th (ft)	#392	89	168	#374	91	36	#291	85
Internal Link Dist (ft)		1035	1229				325	
Turn Bay Length (ft)				100	150	150		
Base Capacity (vph)	272	2429	1844	334	396	204	252	352
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.96	0.16	0.38	0.83	0.36	0.08	0.92	0.63

Intersection Summary

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

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	224	1146	795	237	260	10	620
v/c Ratio	0.76	0.65	0.60	0.62	0.57	0.04	0.71
Control Delay	65.1	25.6	39.8	46.6	53.1	42.9	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.1	25.6	39.8	46.6	53.1	42.9	8.4
Queue Length 50th (ft)	167	340	206	186	98	7	0
Queue Length 95th (ft)	#283	456	272	#336	135	22	53
Internal Link Dist (ft)		1716	1031			1275	
Turn Bay Length (ft)				250	250		250
Base Capacity (vph)	295	1751	1318	381	715	388	1016
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	0.76	0.65	0.60	0.62	0.36	0.03	0.61

Intersection Summary

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

Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Group Flow (vph)	452	293	511	457	165	96
v/c Ratio	1.01	0.24	0.75	0.87	0.59	0.41
Control Delay	82.7	10.5	38.3	49.9	47.5	43.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	82.7	10.5	38.3	49.9	47.5	43.5
Queue Length 50th (ft)	230	43	218	207	78	44
Queue Length 95th (ft)	#631	179	#591	#593	182	115
Internal Link Dist (ft)		2732	1543		809	
Turn Bay Length (ft)	250			100		450
Base Capacity (vph)	449	1233	678	527	702	587
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.01	0.24	0.75	0.87	0.24	0.16

Intersection Summary

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

Lane Group	EBL2	EBT	WBT	WBR	NBL2	NBL	NBR
Lane Group Flow (vph)	288	408	864	332	275	22	301
v/c Ratio	0.79	0.16	0.84	1.02	0.61	0.09	0.91
Control Delay	65.9	18.5	54.2	103.2	59.7	50.9	86.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.9	18.5	54.2	103.2	59.7	50.9	86.2
Queue Length 50th (ft)	232	67	201	~296	114	17	144
Queue Length 95th (ft)	#368	89	245	#487	162	44	#238
Internal Link Dist (ft)		1035	1229				
Turn Bay Length (ft)				100	150	150	
Base Capacity (vph)	363	2499	1033	325	451	232	332
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	0.79	0.16	0.84	1.02	0.61	0.09	0.91

Intersection Summary

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

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

Lane Group	EBL	EBT	WBT	WBR	NBL2	NBL	NBR
Lane Group Flow (vph)	310	408	864	337	275	22	301
v/c Ratio	0.88	0.16	0.84	1.15	0.61	0.09	0.91
Control Delay	75.7	18.5	54.2	141.5	59.7	50.9	86.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	75.7	18.5	54.2	141.5	59.7	50.9	86.2
Queue Length 50th (ft)	256	67	201	~332	114	17	144
Queue Length 95th (ft)	#418	89	245	#523	162	44	#238
Internal Link Dist (ft)		1035	1229				
Turn Bay Length (ft)				100	150	150	
Base Capacity (vph)	354	2499	1033	294	451	232	332
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	0.88	0.16	0.84	1.15	0.61	0.09	0.91

Intersection Summary

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

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

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	263	460	810	265	242	10	293
v/c Ratio	0.61	0.26	0.84	0.99	0.43	0.03	0.93
Control Delay	50.7	19.8	58.0	104.1	51.9	46.4	88.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.7	19.8	58.0	104.1	51.9	46.4	88.9
Queue Length 50th (ft)	198	116	255	261	95	7	140
Queue Length 95th (ft)	293	152	312	#470	138	24	#237
Internal Link Dist (ft)		1716	1031			829	
Turn Bay Length (ft)				250	250		250
Base Capacity (vph)	431	1739	960	267	557	302	316
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	0.61	0.26	0.84	0.99	0.43	0.03	0.93

Intersection Summary

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

Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Group Flow (vph)	279	779	405	247	252	226
v/c Ratio	0.73	0.77	0.80	0.64	0.69	0.73
Control Delay	54.5	28.7	50.8	45.9	52.2	56.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.5	28.7	50.8	45.9	52.2	56.8
Queue Length 50th (ft)	210	499	300	174	191	173
Queue Length 95th (ft)	#367	#819	#498	288	285	265
Internal Link Dist (ft)		2732	1543		809	
Turn Bay Length (ft)	250			100		450
Base Capacity (vph)	517	1277	710	540	612	521
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.54	0.61	0.57	0.46	0.41	0.43

Intersection Summary

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

Lane Group	EBL2	EBT	WBT	WBR	NBL2	NBL	NBR
Lane Group Flow (vph)	182	391	698	266	158	16	435
v/c Ratio	0.67	0.16	0.39	0.74	0.40	0.08	1.53
Control Delay	65.0	19.8	38.3	55.9	56.6	52.5	294.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.0	19.8	38.3	55.9	56.6	52.5	294.4
Queue Length 50th (ft)	147	67	138	204	64	12	~290
Queue Length 95th (ft)	229	89	168	#317	100	36	#409
Internal Link Dist (ft)		1035	1229				
Turn Bay Length (ft)				100	150	150	
Base Capacity (vph)	272	2401	1809	361	396	204	284
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	0.67	0.16	0.39	0.74	0.40	0.08	1.53

Intersection Summary

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

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

Lane Group	EBL	EBT	WBT	WBR	NBL2	NBL	NBR
Lane Group Flow (vph)	260	391	698	276	158	16	435
v/c Ratio	0.96	0.16	0.39	0.84	0.40	0.08	1.53
Control Delay	98.9	19.8	38.3	67.1	56.6	52.5	294.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	98.9	19.8	38.3	67.1	56.6	52.5	294.4
Queue Length 50th (ft)	220	67	138	220	64	12	~290
Queue Length 95th (ft)	#392	89	168	#374	100	36	#409
Internal Link Dist (ft)		1035	1229				
Turn Bay Length (ft)				100	150	150	
Base Capacity (vph)	272	2401	1809	328	396	204	284
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	0.96	0.16	0.39	0.84	0.40	0.08	1.53

Intersection Summary

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

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

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR
Lane Group Flow (vph)	224	1146	795	237	260	10	620
v/c Ratio	0.76	0.77	0.81	0.84	0.36	0.03	1.20
Control Delay	65.1	34.2	52.6	71.1	42.4	38.2	150.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.1	34.2	52.6	71.1	42.4	38.2	150.3
Queue Length 50th (ft)	167	394	229	205	89	6	~331
Queue Length 95th (ft)	#283	481	283	#368	130	21	#459
Internal Link Dist (ft)		1716	1031			1275	
Turn Bay Length (ft)				250	250		250
Base Capacity (vph)	295	1486	976	282	715	388	515
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	0.76	0.77	0.81	0.84	0.36	0.03	1.20

Intersection Summary

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

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

APPENDIX E: ROADWAY SEGMENT VOLUME GROWTH CALCULATIONS APPENDIX

Using Series 13 SANDAG Model

ROADWAY SEGMENT TRAFFIC VOLUMES GROWTH			
Roadway	**2012**	**2035**	**CAGR**
Landis - 41st to Central	3,100	3,200	0.14%
Central - Landis to Witman	3,100	3,200	0.14%
SR-15 NB Ramps @ University	8,000	9,200	0.61%
University - SR-15 SB to NB	20,200	22,200	0.41%
University - SR-15 NB to 41st	27,300	29,400	0.32%
Orange - SR 15 to Marlborough	7,300	11,200	1.88%
SR-15 NB Ramps @ El Cajon	6,400	7,600	0.75%
El Cajon - SR 15 SB to NB	22,600	25,500	0.53%
El Cajon - SR 15 to Marlborough	26,100	30,600	0.69%
Central - El Cajon to Meade	500	300	-2.20%
Meade - SR 15 SB to NB	5,300	7,300	1.40%
Meade - SR 15 SB to Marlborough	5,700	7,500	1.20%
SR 15 NB @ Adams	4,400	4,600	0.19%
Adams - SR 15 SB to NB	13,200	15,400	0.67%
Adams - SR 15 SB to Marlborough	12,400	13,200	0.27%
TOTAL	**69,000**	**78,400**	**0.56%**

Source: Fehr & Peers, 2017

Volumes obtained from SANDAG Series 13: 2050 Regional Growth Forecast Model