Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 2 of 5)

INTERSECTION #14 : I-15 SB RAMPS / GOPHER CANYON ROAD - EXISTING + PHASE C

WARRANT 2 - Four Hour Vehicular Volume **SATISFIED* YES ☐ NO ☐**

Record hourly vehicular volumes for any four hours of an average day.

APPROACH LANES	One	2 or More					Hour
Both Approaches - Major Street							
Higher Approach - Minor Street							

*All plotted points fall above the applicable curve in Figure 4C-1. (URBAN AREAS)	Yes ☐	No ☐
OR, All plotted points fall above the applicable curve in Figure 4C-2. (RURAL AREAS)	Yes ☐	No ☐

WARRANT 3 - Peak Hour **SATISFIED YES ☒ NO ☐**
(Part A or Part B must be satisfied)

PART A **SATISFIED YES ☒ NO ☐**

(All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods)

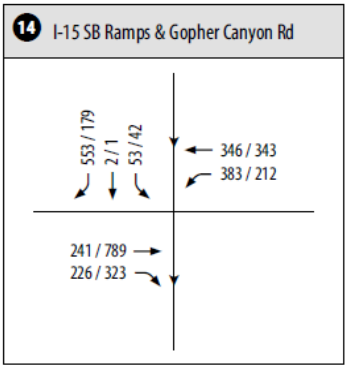
1. The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach; AND	Yes ☒	No ☐
2. The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND	Yes ☒ 608 / 222	No ☐
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches.	Yes ☒ 1,804 / 1,889	No ☐

PART B **SATISFIED YES ☒ NO ☐**

APPROACH LANES	One	2 or More		Hour
Both Approaches - Major Street		X		1,196 / 1,667
Higher Approach - Minor Street	X			608 / 222

The plotted point falls above the applicable curve in Figure 4C-3. (URBAN AREAS)	Yes ☐	No ☐
OR, The plotted point falls above the applicable curve in Figure 4C-4. (RURAL AREAS)	Yes ☒	No ☐

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.



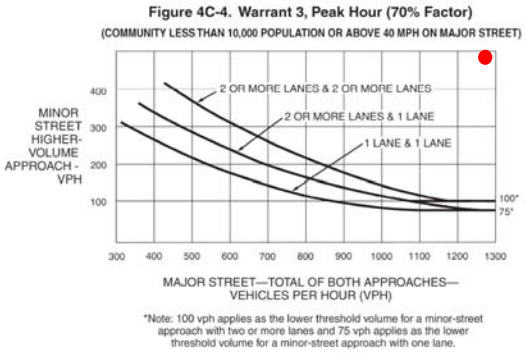


Figure 4C-103 (CA). Traffic Signal Warrants Worksheet (Average Traffic Estimate Form)

COUNT DATE Existing + Phase C

DIST ____ CO ____ RTE ____ PM ____

CALC ____ DATE ____
CHK ____ DATE ____

Major St: Gopher Canyon Rd
Minor St: I-15 NB Ramps

Critical Approach Speed ____ mph
Critical Approach Speed ____ mph

Speed limit or critical speed on major street traffic > 40 mph..... ☒
or
In built up area of isolated community of < 10,000 population..... ☐
} RURAL (R)

☐ URBAN (U)

(Based on Estimated Average Daily Traffic - See Note)

URBAN..... RURAL.....X.....

	Minimum Requirements EADT			
	Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
	Urban	Rural	Urban	Rural
CONDITION A - Minimum Vehicular Volume Satisfied X Not Satisfied ____ Number of lanes for moving traffic on each approach Major Street / Minor Street				
1 / 1	8,000	5,600	2,400	1,680
2 or More 12,700 / 1 7,250	9,600	6,720	2,400	1,680
2 or More / 2 or More	9,600	6,720	3,200	2,240
1 / 2 or More	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic Satisfied X Not Satisfied ____ Number of lanes for moving traffic on each approach Major Street / Minor Street	Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
	Urban	Rural	Urban	Rural
1 / 1	12,000	8,400	1,200	850
2 or More 12,700 / 1 7,250	14,400	10,080	1,200	850
2 or More / 2 or More	14,400	10,080	1,600	1,120
1 / 2 or More	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B Satisfied X Not Satisfied ____ No one condition satisfied, but following conditions fulfilled 80% or more..... ____ A ____ B	2 CONDITIONS 80%		2 CONDITIONS 80%	

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 2 of 5)

INTERSECTION #15 : I-15 NB RAMPS / GOPHER CANYON ROAD - EXISTING + PHASE C

WARRANT 2 - Four Hour Vehicular Volume **SATISFIED* YES ☐ NO ☐**

Record hourly vehicular volumes for any four hours of an average day.

APPROACH LANES	One	2 or More					Hour
Both Approaches - Major Street							
Higher Approach - Minor Street							

*All plotted points fall above the applicable curve in Figure 4C-1. (URBAN AREAS)	Yes ☐ No ☐
OR, All plotted points fall above the applicable curve in Figure 4C-2. (RURAL AREAS)	Yes ☐ No ☐

WARRANT 3 - Peak Hour
(Part A or Part B must be satisfied) **SATISFIED YES ☒ NO ☐**

PART A **SATISFIED YES ☒ NO ☐**

(All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods)

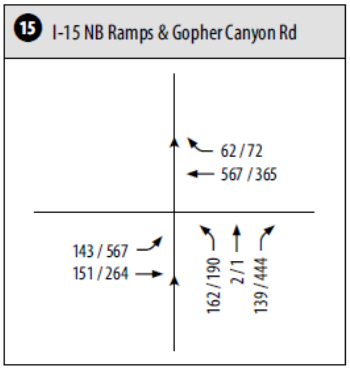
1. The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach; AND	Yes ☒ No ☐
2. The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND	Yes ☒ No ☐ 303 / 635
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches.	Yes ☒ No ☐ 1,226 / 1,903

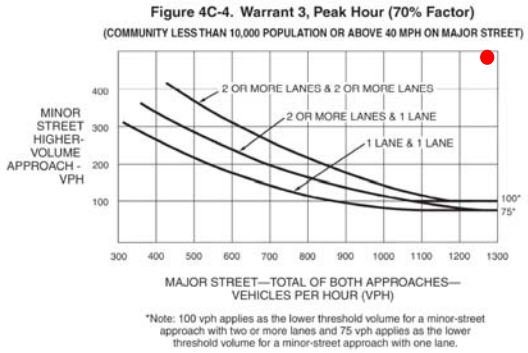
PART B **SATISFIED YES ☒ NO ☐**

APPROACH LANES	One	2 or More		Hour
Both Approaches - Major Street		X		923 / 1,268
Higher Approach - Minor Street	X			303 / 635

The plotted point falls above the applicable curve in Figure 4C-3. (URBAN AREAS)	Yes ☐ No ☐
OR, The plotted point falls above the applicable curve in Figure 4C-4. (RURAL AREAS)	Yes ☒ No ☐

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.





Appendix AC

Mitigated Peak Hour Intersection Capacity Worksheets – Existing Plus Project (Phases C) Conditions

EXISTING + PHASE C – PFFP REPORT

Phase C Mitigation Implementation Triggers by Building Permit

<u>Existing Plus Project (Phases C) Conditions</u>

Intersection #9: Old Highway 395 / W. Lilac Road

Mitigation Measure = Signalization

Worst Case = PM Peak Hour

- Phases 1 & 2 PM Peak Hour Trip Generation: 585 (396 in / 189 out)

Signalization would be required (by 585 EDU or 585 PM peak hour project trips since PM intersection operations would dictate the need for signalization) at this intersection to mitigate direct project impacts.

Intersection	
Intersection Delay (sec/veh):	11.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Volume (vph)	49	40	37	100	23	61	72	205	221	117	60	22
Conflicting Peds.(#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
Right Turn Channelized	Free	Free	Free	Free	Free	Free	None	None	None	None	None	None
Storage Length	0		50	200		50	200		0	200		0
Median Width		0			0			12			12	
Grade (%)		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.92	0.92
Heavy Vehicles(%)	2	2	2	2	2	2	2	2	2	2	2	2
Movement Flow Rate	53	43	40	105	24	64	76	216	233	127	65	24
Number of Lanes	0	1	1	0	1	1	1	1	0	1	2	0

Major/Minor		Minor 2			Minor 1			Major 1			Major 2	
Conflicting Flow Rate - All	860	932	45	793	828	225	89	0	0	449	0	0
Stage 1	331	331	-	485	485	-	-	-	-	-	-	-
Stage 2	529	601	-	308	343	-	-	-	-	-	-	-
Follow-up Headway	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Capacity-1 Maneuver	250	265	1015	279	305	778	1504	-	-	1108	-	-
Stage 1	656	644	-	532	550	-	-	-	-	-	-	-
Stage 2	501	488	-	677	636	-	-	-	-	-	-	-
Time blocked-Platoon(%)	0	0	0	0	0	0	0	-	-	0	-	-
Mov Capacity-1 Maneuver	187	223	1015	201	256	778	1504	-	-	1108	-	-
Mov Capacity-2 Maneuver	187	223	-	201	256	-	-	-	-	-	-	-
Stage 1	623	570	-	505	522	-	-	-	-	-	-	-
Stage 2	416	463	-	532	563	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay (s)	29.5	34.6	1.1	5.1
HCM LOS	D	D	A	A

Lane	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (vph)				202	1015	209	778			
HCM Control Delay (s)	7.521	0	-	38.2	8.7	46.8	10	8.67	0	-
HCM Lane VC Ratio	0.05	-	-	0.479	0.04	0.619	0.083	0.115	-	-
HCM Lane LOS	A	A	-	E	A	E	B	A	A	-
HCM 95th Percentile Queue (veh)	0.159	-	-	2.341	0.124	3.589	0.269	0.388	-	-

Phase C Mitigation Implementation Triggers by Building Permit

<u>Existing Plus Project (Phases C) Conditions</u>

Intersection #1: East Vista Way / Gopher Canyon Road

Mitigation Measure = +1 NBR (in addition to the +1 WBR constructed in Phase A)

East Vista Way between Gopher Canyon Road & Osborne Street - existing ADT / LOS : 21,020 / **F**

Allowable increased based upon County Standard (Table 2.8 of the TIS): 100 ADT

Percentage of project trips on East Vista Way between Gopher Canyon Road & Osborne Street: 2.1%

Project Trips Generation Phase B: 4,745 ADT (Table 4.5 of the TIS)

Trips Assignment to East Vista Way between Gopher Canyon Road & Osborne Street @ end of Phase B = 99.6 ADT (or at 475th EDU)

EDU when mitigation is triggered = 476th EDU or 100th ADT on East Vista Way

A dedicated right-turn lane at the northbound E. Vista Way approach of the East Vista Way / Gopher Canyon Road intersection, the constraining intersection along the impacted segment would be requied by the 476th EDU

EXISTING + PHASE C – MITIGATION SYNCHRO REPORTS

HCM 2010 Signalized Intersection Summary
1: East Vista Way & Gopher Canyon Road

5/18/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	1	1	0	811	1	279	0	291	348	154	460	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	1	1	0	911	1	257	0	327	211	181	541	0
Adj No. of Lanes	0	1	0	0	1	1	1	1	1	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.89	0.89	0.89	0.89	0.89	0.89	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	2	2	0	946	1	845	2	373	317	209	660	0
Arrive On Green	0.00	0.00	0.00	0.53	0.53	0.53	0.00	0.20	0.20	0.12	0.35	0.00
Sat Flow, veh/h	909	909	0	1772	2	1583	1774	1863	1583	1774	1863	0
Grp Volume(v), veh/h	2	0	0	912	0	257	0	327	211	181	541	0
Grp Sat Flow(s),veh/h/ln	1817	0	0	1774	0	1583	1774	1863	1583	1774	1863	0
Q Serve(g_s), s	0.1	0.0	0.0	54.2	0.0	9.9	0.0	18.7	13.5	11.0	29.0	0.0
Cycle Q Clear(g_c), s	0.1	0.0	0.0	54.2	0.0	9.9	0.0	18.7	13.5	11.0	29.0	0.0
Prop In Lane	0.50		0.00	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	5	0	0	947	0	845	2	373	317	209	660	0
V/C Ratio(X)	0.41	0.00	0.00	0.96	0.00	0.30	0.00	0.88	0.67	0.86	0.82	0.00
Avail Cap(c_a), veh/h	83	0	0	969	0	865	65	441	375	210	660	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	54.7	0.0	0.0	24.6	0.0	14.3	0.0	42.6	40.5	47.6	32.3	0.0
Incr Delay (d2), s/veh	46.6	0.0	0.0	20.3	0.0	0.2	0.0	16.0	3.5	29.2	8.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.0	31.7	0.0	4.3	0.0	11.3	6.2	7.1	16.4	0.0
LnGrp Delay(d),s/veh	101.3	0.0	0.0	44.9	0.0	14.5	0.0	58.6	44.0	76.8	40.3	0.0
LnGrp LOS	F			D		B		E	D	E	D	
Approach Vol, veh/h		2			1169			538			722	
Approach Delay, s/veh		101.3			38.2			52.9			49.5	
Approach LOS		F			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	17.0	26.0		4.3	0.0	42.9		62.6
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	13.0	26.0		5.0	4.0	35.0		60.0
Max Q Clear Time (g_c+I1), s	13.0	20.7		2.1	0.0	31.0		56.2
Green Ext Time (p_c), s	0.0	1.3		0.0	0.0	2.1		2.4

Intersection Summary	
HCM 2010 Ctrl Delay	44.8
HCM 2010 LOS	D

HCM 2010 Signalized Intersection Summary
1: East Vista Way & Gopher Canyon Road

5/18/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	408	0	190	0	379	881	319	380	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1863	1863	1863	1863	1863	1863	0
Adj Flow Rate, veh/h	0	0	0	434	0	149	0	499	470	347	413	0
Adj No. of Lanes	0	1	0	0	1	1	1	1	1	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.94	0.92	0.94	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	0
Cap, veh/h	0	2	0	467	0	417	2	661	562	375	1147	0
Arrive On Green	0.00	0.00	0.00	0.26	0.00	0.26	0.00	0.35	0.35	0.21	0.62	0.00
Sat Flow, veh/h	0	1863	0	1774	0	1583	1774	1863	1583	1774	1863	0
Grp Volume(v), veh/h	0	0	0	434	0	149	0	499	470	347	413	0
Grp Sat Flow(s),veh/h/ln	0	1863	0	1774	0	1583	1774	1863	1583	1774	1863	0
Q Serve(g_s), s	0.0	0.0	0.0	26.9	0.0	8.6	0.0	26.6	30.7	21.6	12.3	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	26.9	0.0	8.6	0.0	26.6	30.7	21.6	12.3	0.0
Prop In Lane	0.00		0.00	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	0	2	0	467	0	417	2	661	562	375	1147	0
V/C Ratio(X)	0.00	0.00	0.00	0.93	0.00	0.36	0.00	0.75	0.84	0.93	0.36	0.00
Avail Cap(c_a), veh/h	0	264	0	494	0	441	63	893	759	400	1273	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	40.5	0.0	33.7	0.0	32.0	33.4	43.6	10.7	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	23.4	0.0	0.5	0.0	2.5	6.1	26.4	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	16.2	0.0	3.8	0.0	14.2	14.4	13.4	6.4	0.0
LnGrp Delay(d),s/veh	0.0	0.0	0.0	63.9	0.0	34.3	0.0	34.6	39.5	70.0	10.9	0.0
LnGrp LOS				E		C		C	D	E	B	
Approach Vol, veh/h		0			583			969			760	
Approach Delay, s/veh		0.0			56.3			36.9			37.9	
Approach LOS					E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	29.4	48.0		0.0	0.0	77.4		35.3
Change Period (Y+Rc), s	5.6	8.0		4.0	4.0	* 8		5.6
Max Green Setting (Gmax), s	25.4	54.0		16.0	4.0	* 77		31.4
Max Q Clear Time (g_c+I1), s	23.6	32.7		0.0	0.0	14.3		28.9
Green Ext Time (p_c), s	0.2	7.3		0.0	0.0	8.8		0.8

Intersection Summary	
HCM 2010 Ctrl Delay	42.1
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

HCM 2010 Signalized Intersection Summary
8: Old Highway 395 & W Lilac Rd

2/1/2013

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	49	61	37	223	40	114	72	205	375	184	60	22
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Queue, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking, Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow Rate	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Lanes	0	1	0	1	1	0	1	1	0	1	2	0
Capacity, veh/h	156	180	86	340	116	330	96	229	419	246	1247	434
Arriving On Green	0.27	0.27	0.27	0.27	0.27	0.27	0.05	0.39	0.39	0.14	0.47	0.47
Sat Flow, veh/h	418.8	486.6	316.3	1221.5	427.9	1219.6	1774.0	591.0	1081.0	1774.0	2643.1	920.0
Grp Volume(v), veh/h	159.8	0.0	0.0	234.7	0.0	162.1	75.8	0.0	610.5	200.0	44.9	44.2
Grp Sat Flow(s),veh/h/ln	1256.5	0.0	0.0	1221.5	0.0	1647.5	1774.0	0.0	1672.0	1774.0	1862.7	1700.4
Q Serve(g_s), s	0.8	0.0	0.0	10.5	0.0	4.7	2.5	0.0	20.8	6.5	0.8	0.8
Cycle Q Clear(g_c), s	5.5	0.0	0.0	16.0	0.0	4.7	2.5	0.0	20.8	6.5	0.8	0.8
Proportion In Lane	0.333		0.252	1.000		0.740	1.000		0.647	1.000		0.541
Lane Grp Cap(c), veh/h	421.6	0.0	0.0	339.6	0.0	446.2	96.4	0.0	648.1	245.6	878.7	802.1
V/C Ratio(X)	0.379	0.000	0.000	0.691	0.000	0.363	0.786	0.000	0.942	0.814	0.051	0.055
Avail Cap(c_a), veh/h	421.6	0.0	0.0	339.6	0.0	446.2	180.2	0.0	650.9	270.3	878.7	802.1
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.000	0.000	0.000	1.000	0.000	1.000	1.000	0.000	1.000	1.000	1.000	1.000
Uniform Delay (d), s/veh	17.3	0.0	0.0	24.7	0.0	17.4	27.6	0.0	17.4	24.7	8.4	8.5
Incr Delay (d2), s/veh	0.6	0.0	0.0	5.9	0.0	0.5	13.1	0.0	22.1	16.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane Group Delay (d), s/veh	17.8	0.0	0.0	30.5	0.0	17.9	40.7	0.0	39.5	40.7	8.5	8.5
Lane Group LOS	B			C		B	D		D	D	A	A
Approach Volume, veh/h		160			397			686			289	
Approach Delay, s/veh		17.8			25.4			39.6			30.8	
Approach LOS		B			C			D			C	

Timer								
Assigned Phase		4			8		5	2		1	6	
Phase Duration (G+Y+Rc), s		20.00			20.00		7.21	26.90		12.18	31.87	
Change Period (Y+Rc), s		4.00			4.00		4.00	4.00		4.00	4.00	
Max Green Setting (Gmax), s		16.00			16.00		6.00	23.00		9.00	26.00	
Max Q Clear Time (g_c+I1), s		7.47			18.00		4.49	22.81		8.47	2.83	
Green Extension Time (p_c)		1.86			0.00		0.02	0.09		0.03	4.44	

Intersection Summary	
HCM 2010 Control Delay	32.0
HCM 2010 Level of Service	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	59	27	57	296	58	145	32	31	158	73	205	145
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Queue, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking, Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow Rate	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Lanes	0	1	0	1	1	0	1	1	0	1	2	0
Capacity, veh/h	144	66	115	348	175	348	55	60	247	112	411	349
Arriving On Green	0.19	0.19	0.19	0.31	0.31	0.31	0.03	0.19	0.19	0.06	0.22	0.22
Sat Flow, veh/h	761.9	348.7	607.0	1108.8	558.9	1108.2	1774.0	318.0	1313.0	1774.0	1862.7	1583.3
Grp Volume(v), veh/h	266.0	0.0	0.0	321.7	0.0	188.0	44.4	0.0	220.8	86.9	244.0	136.9
Grp Sat Flow(s),veh/h/ln	1717.5	0.0	0.0	1108.8	0.0	1667.2	1774.0	0.0	1631.0	1774.0	1862.7	1583.3
Q Serve(g_s), s	9.7	0.0	0.0	18.3	0.0	5.7	1.6	0.0	8.3	3.1	7.7	4.8
Cycle Q Clear(g_c), s	9.7	0.0	0.0	18.3	0.0	5.7	1.6	0.0	8.3	3.1	7.7	4.8
Proportion In Lane	0.444		0.353	1.000		0.665	1.000		0.805	1.000		1.000
Lane Grp Cap(c), veh/h	325.2	0.0	0.0	348.1	0.0	523.3	54.7	0.0	307.4	111.6	410.9	349.2
V/C Ratio(X)	0.818	0.000	0.000	0.924	0.000	0.359	0.813	0.000	0.718	0.779	0.594	0.392
Avail Cap(c_a), veh/h	474.1	0.0	0.0	357.1	0.0	536.9	163.2	0.0	450.3	190.5	542.8	461.4
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.000	0.000	0.000	1.000	0.000	1.000	1.000	0.000	1.000	1.000	1.000	1.000
Uniform Delay (d), s/veh	25.4	0.0	0.0	21.6	0.0	17.3	31.4	0.0	24.8	30.1	22.8	21.7
Incr Delay (d2), s/veh	7.1	0.0	0.0	28.9	0.0	0.4	24.0	0.0	3.1	11.0	1.4	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane Group Delay (d), s/veh	32.5	0.0	0.0	50.5	0.0	17.7	55.4	0.0	28.0	41.2	24.2	22.4
Lane Group LOS	C			D		B	E		C	D	C	C
Approach Volume, veh/h		266			510			265			468	
Approach Delay, s/veh		32.5			38.4			32.6			26.8	
Approach LOS		C			D			C			C	

Timer							
Assigned Phase	4	8	5	2	1	6	
Phase Duration (G+Y+Rc), s	16.34	24.47	6.01	16.29	8.10	18.38	
Change Period (Y+Rc), s	4.00	4.00	4.00	4.00	4.00	4.00	
Max Green Setting (Gmax), s	18.00	21.00	6.00	18.00	7.00	19.00	
Max Q Clear Time (g_c+I1), s	11.69	20.29	3.62	10.29	5.15	9.66	
Green Extension Time (p_c)	0.76	0.18	0.01	2.00	0.03	2.25	

Intersection Summary	
HCM 2010 Control Delay	32.7
HCM 2010 Level of Service	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	241	226	383	346	0	0	0	0	53	2	553
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1863	1863	0				1900	1863	1900
Adj Flow Rate, veh/h	0	313	0	445	402	0				56	2	350
Adj No. of Lanes	0	1	0	1	2	0				0	1	0
Peak Hour Factor	0.90	0.77	0.77	0.86	0.86	0.86				0.95	0.95	0.95
Percent Heavy Veh, %	0	2	2	2	2	0				0	2	0
Cap, veh/h	0	451	0	502	2091	0				61	2	384
Arrive On Green	0.00	0.24	0.00	0.28	0.59	0.00				0.28	0.28	0.28
Sat Flow, veh/h	0	1863	0	1774	3632	0				221	8	1380
Grp Volume(v), veh/h	0	313	0	445	402	0				408	0	0
Grp Sat Flow(s),veh/h/ln	0	1863	0	1774	1770	0				1608	0	0
Q Serve(g_s), s	0.0	9.3	0.0	14.7	3.2	0.0				15.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	9.3	0.0	14.7	3.2	0.0				15.0	0.0	0.0
Prop In Lane	0.00		0.00	1.00		0.00				0.14		0.86
Lane Grp Cap(c), veh/h	0	451	0	502	2091	0				447	0	0
V/C Ratio(X)	0.00	0.69	0.00	0.89	0.19	0.00				0.91	0.00	0.00
Avail Cap(c_a), veh/h	0	732	0	610	2841	0				474	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	1.00	1.00	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	21.1	0.0	20.9	5.8	0.0				21.3	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.9	0.0	12.9	0.0	0.0				21.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.0	0.0	9.0	1.6	0.0				9.2	0.0	0.0
LnGrp Delay(d),s/veh	0.0	23.0	0.0	33.8	5.8	0.0				42.5	0.0	0.0
LnGrp LOS		C		C	A					D		
Approach Vol, veh/h		313			847						408	
Approach Delay, s/veh		23.0			20.5						42.5	
Approach LOS		C			C						D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	21.3	18.8		21.0		40.1		
Change Period (Y+Rc), s	4.0	4.0		4.0		4.0		
Max Green Setting (Gmax), s	21.0	24.0		18.0		49.0		
Max Q Clear Time (g_c+I1), s	16.7	11.3		17.0		5.2		
Green Ext Time (p_c), s	0.6	3.5		0.0		4.8		

Intersection Summary	
HCM 2010 Ctrl Delay	26.7
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	143	151	0	0	567	62	162	2	139	0	0	0
Number	5	2	12	1	6	16	3	8	18			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900	1900	1863	1900			
Adj Flow Rate, veh/h	146	154	0	0	616	0	182	2	134			
Adj No. of Lanes	1	2	0	0	2	0	0	1	0			
Peak Hour Factor	0.98	0.98	0.98	0.92	0.92	0.92	0.89	0.89	0.89			
Percent Heavy Veh, %	2	2	0	0	2	2	0	2	0			
Cap, veh/h	192	1949	0	0	1181	0	225	2	165			
Arrive On Green	0.11	0.55	0.00	0.00	0.33	0.00	0.23	0.23	0.23			
Sat Flow, veh/h	1774	3632	0	0	3725	0	967	11	712			
Grp Volume(v), veh/h	146	154	0	0	616	0	318	0	0			
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1770	0	1689	0	0			
Q Serve(g_s), s	2.9	0.8	0.0	0.0	5.2	0.0	6.6	0.0	0.0			
Cycle Q Clear(g_c), s	2.9	0.8	0.0	0.0	5.2	0.0	6.6	0.0	0.0			
Prop In Lane	1.00		0.00	0.00		0.00	0.57		0.42			
Lane Grp Cap(c), veh/h	192	1949	0	0	1181	0	392	0	0			
V/C Ratio(X)	0.76	0.08	0.00	0.00	0.52	0.00	0.81	0.00	0.00			
Avail Cap(c_a), veh/h	626	4706	0	0	3073	0	825	0	0			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	16.0	3.9	0.0	0.0	9.9	0.0	13.4	0.0	0.0			
Incr Delay (d2), s/veh	6.0	0.0	0.0	0.0	0.4	0.0	4.0	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	1.7	0.4	0.0	0.0	2.5	0.0	3.4	0.0	0.0			
LnGrp Delay(d),s/veh	22.0	3.9	0.0	0.0	10.3	0.0	17.4	0.0	0.0			
LnGrp LOS	C	A			B		B					
Approach Vol, veh/h		300			616			318				
Approach Delay, s/veh		12.7			10.3			17.4				
Approach LOS		B			B			B				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		24.3			8.0	16.3		12.6
Change Period (Y+Rc), s		4.0			4.0	4.0		4.0
Max Green Setting (Gmax), s		49.0			13.0	32.0		18.0
Max Q Clear Time (g_c+I1), s		2.8			4.9	7.2		8.6
Green Ext Time (p_c), s		5.6			0.2	5.1		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	12.7
HCM 2010 LOS	B

HCM 2010 Signalized Intersection Summary
14: I-15 SB Ramps & Gopher Canyon Road

3/31/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	789	323	212	343	0	0	0	0	42	1	179
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1863	1863	0				1900	1863	1900
Adj Flow Rate, veh/h	0	839	0	219	354	0				44	1	186
Adj No. of Lanes	0	1	0	1	2	0				0	1	0
Peak Hour Factor	0.99	0.94	0.94	0.97	0.97	0.99				0.96	0.96	0.96
Percent Heavy Veh, %	0	2	2	2	2	0				0	2	0
Cap, veh/h	0	998	0	260	2595	0				51	1	215
Arrive On Green	0.00	0.54	0.00	0.15	0.73	0.00				0.16	0.16	0.16
Sat Flow, veh/h	0	1863	0	1774	3632	0				308	7	1302
Grp Volume(v), veh/h	0	839	0	219	354	0				231	0	0
Grp Sat Flow(s),veh/h/ln	0	1863	0	1774	1770	0				1618	0	0
Q Serve(g_s), s	0.0	29.8	0.0	9.4	2.3	0.0				10.9	0.0	0.0
Cycle Q Clear(g_c), s	0.0	29.8	0.0	9.4	2.3	0.0				10.9	0.0	0.0
Prop In Lane	0.00		0.00	1.00		0.00				0.19		0.81
Lane Grp Cap(c), veh/h	0	998	0	260	2595	0				266	0	0
V/C Ratio(X)	0.00	0.84	0.00	0.84	0.14	0.00				0.87	0.00	0.00
Avail Cap(c_a), veh/h	0	1618	0	317	3888	0				331	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.00	1.00	1.00	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	15.4	0.0	32.5	3.1	0.0				31.9	0.0	0.0
Incr Delay (d2), s/veh	0.0	2.3	0.0	15.7	0.0	0.0				17.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	15.8	0.0	5.8	1.1	0.0				6.2	0.0	0.0
LnGrp Delay(d),s/veh	0.0	17.6	0.0	48.2	3.1	0.0				49.8	0.0	0.0
LnGrp LOS		B		D	A					D		
Approach Vol, veh/h		839			573						231	
Approach Delay, s/veh		17.6			20.4						49.8	
Approach LOS		B			C						D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	15.5	45.9		16.9		61.4		
Change Period (Y+Rc), s	4.0	4.0		4.0		4.0		
Max Green Setting (Gmax), s	14.0	68.0		16.0		86.0		
Max Q Clear Time (g_c+I1), s	11.4	31.8		12.9		4.3		
Green Ext Time (p_c), s	0.2	10.1		0.0		11.1		

Intersection Summary	
HCM 2010 Ctrl Delay	23.1
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	567	264	0	0	365	72	190	1	444	0	0	0
Number	5	2	12	1	6	16	3	8	18			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900	1900	1863	1900			
Adj Flow Rate, veh/h	585	272	0	0	376	0	200	1	309			
Adj No. of Lanes	1	2	0	0	2	0	0	1	0			
Peak Hour Factor	0.97	0.97	0.98	0.98	0.97	0.97	0.95	0.95	0.95			
Percent Heavy Veh, %	2	2	0	0	2	2	0	2	0			
Cap, veh/h	638	2013	0	0	555	0	212	1	327			
Arrive On Green	0.36	0.57	0.00	0.00	0.16	0.00	0.33	0.33	0.33			
Sat Flow, veh/h	1774	3632	0	0	3725	0	648	3	1002			
Grp Volume(v), veh/h	585	272	0	0	376	0	510	0	0			
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1770	0	1654	0	0			
Q Serve(g_s), s	24.1	2.7	0.0	0.0	7.7	0.0	22.9	0.0	0.0			
Cycle Q Clear(g_c), s	24.1	2.7	0.0	0.0	7.7	0.0	22.9	0.0	0.0			
Prop In Lane	1.00		0.00	0.00		0.00	0.39		0.61			
Lane Grp Cap(c), veh/h	638	2013	0	0	555	0	540	0	0			
V/C Ratio(X)	0.92	0.14	0.00	0.00	0.68	0.00	0.94	0.00	0.00			
Avail Cap(c_a), veh/h	813	2595	0	0	788	0	779	0	0			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	23.4	7.7	0.0	0.0	30.4	0.0	25.0	0.0	0.0			
Incr Delay (d2), s/veh	13.0	0.0	0.0	0.0	1.5	0.0	15.9	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	14.0	1.3	0.0	0.0	3.9	0.0	12.9	0.0	0.0			
LnGrp Delay(d),s/veh	36.3	7.7	0.0	0.0	31.8	0.0	40.9	0.0	0.0			
LnGrp LOS	D	A			C		D					
Approach Vol, veh/h		857			376			510				
Approach Delay, s/veh		27.2			31.8			40.9				
Approach LOS		C			C			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		47.4			31.5	16.0		28.9
Change Period (Y+Rc), s		4.0			4.0	4.0		4.0
Max Green Setting (Gmax), s		56.0			35.0	17.0		36.0
Max Q Clear Time (g_c+I1), s		4.7			26.1	9.7		24.9
Green Ext Time (p_c), s		4.5			1.4	2.3		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	32.2
HCM 2010 LOS	C

Appendix AD

Arterial Analysis –

Existing Plus Project (Phase D) Conditions

Phone: Fax:
E-Mail:

PLANNING ANALYSIS

Analyst:	PHN
Agency/Co.:	Chen Ryan Associates
Date Performed:	4/1/2014
Analysis Time Period:	PM
Urban Street:	East Vista Way - South
Direction of Travel:	
Jurisdiction:	San Diego County
Analysis Year:	Existing + D
Project ID: LHR	

Traffic Characteristics

Annual average daily traffic, AADT	21290	vpd
Planning analysis hour factor, K	0.090	
Directional distribution factor, D	0.615	
Peak-hour factor, PHF	0.920	
Adjusted saturation flow rate	1800	pcphgpl
Percent turns from exclusive lanes	60	%

Roadway Characteristics

Number of through lanes one direction, N	1	
Free flow speed, FFS	50	mph
Urban class	1	
Section length	1.00	miles
Median	No	
Left-turn bays	Yes	

Signal Characteristics

Signalized intersections	2	
Arrival type, AT	3	
Signal type (k = 0.5 for planning)	Actuated	
Cycle length, C	150.0	sec
Effective green ratio, g/C	0.750	

Results

Annual average daily traffic, AADT	21290	vpd
Two-way hourly volume	1916	vph
Hourly directional volume	1178	vph
Through-volume 15-min. flow rate	512	v
Running time	78.0	sec
v/c ratio	0.40	
Through capacity	1281	vph
Progression factor, PF	1.000	
Uniform delay	6.7	sec
Filtering/metering factor, I	0.922	
Incremental delay	0.9	sec
Control delay	7.6	sec/v
Total travel speed, Sa	38.7	mph
Total urban street LOS	B	

Phone: Fax:
E-Mail:

PLANNING ANALYSIS

Analyst:	PHN
Agency/Co.:	Chen Ryan Associates
Date Performed:	4/1/2014
Analysis Time Period:	AM
Urban Street:	East Vista Way - South
Direction of Travel:	
Jurisdiction:	San Diego County
Analysis Year:	E+D
Project ID: LHR	

Traffic Characteristics

Annual average daily traffic, AADT	21290	vpd
Planning analysis hour factor, K	0.070	
Directional distribution factor, D	0.660	
Peak-hour factor, PHF	0.920	
Adjusted saturation flow rate	1800	pcphgpl
Percent turns from exclusive lanes	1	%

Roadway Characteristics

Number of through lanes one direction, N	1	
Free flow speed, FFS	50	mph
Urban class	1	
Section length	1.00	miles
Median	No	
Left-turn bays	Yes	

Signal Characteristics

Signalized intersections	2	
Arrival type, AT	3	
Signal type (k = 0.5 for planning)	Actuated	
Cycle length, C	120.0	sec
Effective green ratio, g/C	0.760	

Results

Annual average daily traffic, AADT	21290	vpd
Two-way hourly volume	1490	vph
Hourly directional volume	983	vph
Through-volume 15-min. flow rate	1057	v
Running time	78.0	sec
v/c ratio	0.81	
Through capacity	1298	vph
Progression factor, PF	1.000	
Uniform delay	9.1	sec
Filtering/metering factor, I	0.475	
Incremental delay	2.8	sec
Control delay	11.9	sec/v
Total travel speed, Sa	35.4	mph
Total urban street LOS	B	

Phone: Fax:
E-Mail:

PLANNING ANALYSIS

Analyst:	PHN
Agency/Co.:	Chen Ryan
Date Performed:	4/1/2014
Analysis Time Period:	PM
Urban Street:	Gopher Canyon Road
Direction of Travel:	
Jurisdiction:	San Diego County
Analysis Year:	Existing+D
Project ID: LHR	

Traffic Characteristics

Annual average daily traffic, AADT	15810	vpd
Planning analysis hour factor, K	0.090	
Directional distribution factor, D	0.668	
Peak-hour factor, PHF	0.920	
Adjusted saturation flow rate	1800	pcphgpl
Percent turns from exclusive lanes	50	%

Roadway Characteristics

Number of through lanes one direction, N	1	
Free flow speed, FFS	50	mph
Urban class	1	
Section length	7.00	miles
Median	No	
Left-turn bays	No	

Signal Characteristics

Signalized intersections	2	
Arrival type, AT	3	
Signal type (k = 0.5 for planning)	Actuated	
Cycle length, C	150.0	sec
Effective green ratio, g/C	0.505	

Results

Annual average daily traffic, AADT	15810	vpd
Two-way hourly volume	1422	vph
Hourly directional volume	949	vph
Through-volume 15-min. flow rate	515	v
Running time	504.0	sec
v/c ratio	0.71	
Through capacity	726	vph
Progression factor, PF	1.000	
Uniform delay	28.6	sec
Filtering/metering factor, I	0.637	
Incremental delay	3.7	sec
Control delay	32.4	sec/v
Total travel speed, Sa	44.3	mph
Total urban street LOS	A	

Phone: Fax:
E-Mail:

PLANNING ANALYSIS

Analyst:	PHN
Agency/Co.:	Chen Ryan
Date Performed:	4/1/2014
Analysis Time Period:	AM
Urban Street:	Gopher Canyon Road
Direction of Travel:	
Jurisdiction:	San Diego County
Analysis Year:	E+D
Project ID: LHR	

Traffic Characteristics

Annual average daily traffic, AADT	15810	vpd
Planning analysis hour factor, K	0.070	
Directional distribution factor, D	0.685	
Peak-hour factor, PHF	0.920	
Adjusted saturation flow rate	1800	pcphgpl
Percent turns from exclusive lanes	20	%

Roadway Characteristics

Number of through lanes one direction, N	1	
Free flow speed, FFS	50	mph
Urban class	1	
Section length	7.00	miles
Median	No	
Left-turn bays	No	

Signal Characteristics

Signalized intersections	2	
Arrival type, AT	3	
Signal type (k = 0.5 for planning)	Actuated	
Cycle length, C	120.0	sec
Effective green ratio, g/C	0.440	

Results

Annual average daily traffic, AADT	15810	vpd
Two-way hourly volume	1106	vph
Hourly directional volume	757	vph
Through-volume 15-min. flow rate	658	v
Running time	504.0	sec
v/c ratio	1.04	
Through capacity	633	vph
Progression factor, PF	1.000	
Uniform delay	33.6	sec
Filtering/metering factor, I	0.090	
Incremental delay	23.0	sec
Control delay	56.6	sec/v
Total travel speed, Sa	40.8	mph
Total urban street LOS	B	

Phone: Fax:
E-Mail:

PLANNING ANALYSIS

Analyst:	PHN
Agency/Co.:	Chen Ryan Associates
Date Performed:	3/31/2014
Analysis Time Period:	PM
Urban Street:	East Vista Way
Direction of Travel:	
Jurisdiction:	San Diego County
Analysis Year:	Existing + D
Project ID: LHR	

Traffic Characteristics

Annual average daily traffic, AADT	15300	vpd
Planning analysis hour factor, K	0.090	
Directional distribution factor, D	0.660	
Peak-hour factor, PHF	0.920	
Adjusted saturation flow rate	1800	pcphgpl
Percent turns from exclusive lanes	50	%

Roadway Characteristics

Number of through lanes one direction, N	1	
Free flow speed, FFS	50	mph
Urban class	1	
Section length	1.00	miles
Median	No	
Left-turn bays	Yes	

Signal Characteristics

Signalized intersections	2	
Arrival type, AT	3	
Signal type (k = 0.5 for planning)	Actuated	
Cycle length, C	150.0	sec
Effective green ratio, g/C	0.660	

Results

Annual average daily traffic, AADT	15300	vpd
Two-way hourly volume	1377	vph
Hourly directional volume	908	vph
Through-volume 15-min. flow rate	493	v
Running time	78.0	sec
v/c ratio	0.44	
Through capacity	1127	vph
Progression factor, PF	1.000	
Uniform delay	12.2	sec
Filtering/metering factor, I	0.901	
Incremental delay	1.1	sec
Control delay	13.3	sec/v
Total travel speed, Sa	34.4	mph
Total urban street LOS	B	

Phone: Fax:
E-Mail:

PLANNING ANALYSIS

Analyst:	PHN
Agency/Co.:	Chen Ryan Associates
Date Performed:	3/31/2014
Analysis Time Period:	AM
Urban Street:	East Vista Way
Direction of Travel:	
Jurisdiction:	San Diego County
Analysis Year:	E+D
Project ID: LHR	

Traffic Characteristics

Annual average daily traffic, AADT	15300	vpd
Planning analysis hour factor, K	0.070	
Directional distribution factor, D	0.520	
Peak-hour factor, PHF	0.920	
Adjusted saturation flow rate	1800	pcphgpl
Percent turns from exclusive lanes	26	%

Roadway Characteristics

Number of through lanes one direction, N	1	
Free flow speed, FFS	50	mph
Urban class	1	
Section length	1.00	miles
Median	No	
Left-turn bays	Yes	

Signal Characteristics

Signalized intersections	2	
Arrival type, AT	3	
Signal type (k = 0.5 for planning)	Actuated	
Cycle length, C	145.0	sec
Effective green ratio, g/C	0.510	

Results

Annual average daily traffic, AADT	15300	vpd
Two-way hourly volume	1071	vph
Hourly directional volume	556	vph
Through-volume 15-min. flow rate	447	v
Running time	78.0	sec
v/c ratio	0.51	
Through capacity	871	vph
Progression factor, PF	1.000	
Uniform delay	23.6	sec
Filtering/metering factor, I	0.848	
Incremental delay	1.8	sec
Control delay	25.4	sec/v
Total travel speed, Sa	27.9	mph
Total urban street LOS	C	

Appendix AE

Peak Hour Intersection Capacity Worksheets – Existing Plus Project (Phase D) Conditions

HCM 2010 Signalized Intersection Summary
1: East Vista Way & Gopher Canyon Road

5/19/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	1	1	0	812	0	281	0	291	349	156	460	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1863	1863	1863	1863	1863	1863	0
Adj Flow Rate, veh/h	1	1	0	912	0	237	0	327	223	184	541	0
Adj No. of Lanes	0	1	0	0	1	1	1	1	1	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.89	0.92	0.89	0.92	0.89	0.89	0.85	0.85	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	0
Cap, veh/h	2	2	0	953	0	851	65	369	314	210	657	0
Arrive On Green	0.00	0.00	0.00	0.54	0.00	0.54	0.00	0.20	0.20	0.12	0.35	0.00
Sat Flow, veh/h	909	909	0	1774	0	1583	861	1863	1583	1774	1863	0
Grp Volume(v), veh/h	2	0	0	912	0	237	0	327	223	184	541	0
Grp Sat Flow(s),veh/h/ln	1817	0	0	1774	0	1583	861	1863	1583	1774	1863	0
Q Serve(g_s), s	0.1	0.0	0.0	54.5	0.0	9.1	0.0	19.0	14.6	11.3	29.5	0.0
Cycle Q Clear(g_c), s	0.1	0.0	0.0	54.5	0.0	9.1	0.0	19.0	14.6	11.3	29.5	0.0
Prop In Lane	0.50		0.00	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	4	0	0	953	0	851	65	369	314	210	657	0
V/C Ratio(X)	0.51	0.00	0.00	0.96	0.00	0.28	0.00	0.89	0.71	0.87	0.82	0.00
Avail Cap(c_a), veh/h	261	0	0	989	0	882	71	382	324	210	670	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	55.4	0.0	0.0	24.5	0.0	14.0	0.0	43.4	41.6	48.2	32.8	0.0
Incr Delay (d2), s/veh	76.8	0.0	0.0	18.7	0.0	0.2	0.0	20.9	6.8	30.9	8.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.0	31.3	0.0	4.0	0.0	12.0	7.0	7.4	16.7	0.0
LnGrp Delay(d),s/veh	132.3	0.0	0.0	43.3	0.0	14.2	0.0	64.3	48.5	79.1	40.9	0.0
LnGrp LOS	F			D		B		E	D	E	D	
Approach Vol, veh/h		2			1149			550			725	
Approach Delay, s/veh		132.3			37.3			57.9			50.6	
Approach LOS		F			D			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	17.2	26.0		4.2		43.2		63.8
Change Period (Y+Rc), s	4.0	4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s	13.2	22.8		16.0		40.0		62.0
Max Q Clear Time (g_c+I1), s	13.3	21.0		2.1		31.5		56.5
Green Ext Time (p_c), s	0.0	1.0		0.0		3.7		3.3

Intersection Summary	
HCM 2010 Ctrl Delay	46.0
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	5	169	220	254	48	278	40	524	242	268	805	6
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	6	204	217	331	0	274	42	546	210	288	866	6
Adj No. of Lanes	0	2	0	2	0	1	1	3	1	2	3	0
Peak Hour Factor	0.83	0.83	0.83	0.87	0.87	0.87	0.96	0.96	0.96	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	10	327	287	770	0	344	56	1313	409	408	1797	12
Arrive On Green	0.18	0.18	0.18	0.22	0.00	0.22	0.03	0.26	0.26	0.12	0.34	0.34
Sat Flow, veh/h	53	1807	1583	3548	0	1583	1774	5085	1583	3442	5210	36
Grp Volume(v), veh/h	210	0	217	331	0	274	42	546	210	288	563	309
Grp Sat Flow(s),veh/h/ln	1860	0	1583	1774	0	1583	1774	1695	1583	1721	1695	1856
Q Serve(g_s), s	7.4	0.0	9.2	5.7	0.0	11.6	1.7	6.3	8.1	5.7	9.3	9.3
Cycle Q Clear(g_c), s	7.4	0.0	9.2	5.7	0.0	11.6	1.7	6.3	8.1	5.7	9.3	9.3
Prop In Lane	0.03		1.00	1.00		1.00	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	337	0	287	770	0	344	56	1313	409	408	1169	640
V/C Ratio(X)	0.62	0.00	0.76	0.43	0.00	0.80	0.75	0.42	0.51	0.71	0.48	0.48
Avail Cap(c_a), veh/h	550	0	468	1348	0	602	200	1932	602	920	1813	993
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.8	0.0	27.6	24.0	0.0	26.3	34.1	21.9	22.5	30.1	18.3	18.3
Incr Delay (d2), s/veh	1.9	0.0	4.1	0.4	0.0	4.3	17.6	0.2	1.0	2.3	0.3	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	0.0	4.4	2.8	0.0	5.5	1.1	3.0	3.6	2.8	4.4	4.8
LnGrp Delay(d),s/veh	28.7	0.0	31.7	24.4	0.0	30.6	51.7	22.1	23.5	32.4	18.6	18.9
LnGrp LOS	C		C	C		C	D	C	C	C	B	B
Approach Vol, veh/h		427			605			798			1160	
Approach Delay, s/veh		30.2			27.2			24.1			22.1	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.3	28.5		19.4	12.4	22.3		16.9
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	8.0	38.0		27.0	19.0	27.0		21.0
Max Q Clear Time (g_c+I1), s	3.7	11.3		13.6	7.7	10.1		11.2
Green Ext Time (p_c), s	0.0	10.2		1.8	0.7	8.3		1.6

Intersection Summary	
HCM 2010 Ctrl Delay	24.8
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	59	167	74	77	86	255	39	626	89	253	719	26
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	69	194	74	100	112	279	43	688	87	288	817	24
Adj No. of Lanes	2	1	1	1	1	1	1	3	1	2	3	1
Peak Hour Factor	0.86	0.86	0.86	0.77	0.77	0.77	0.91	0.91	0.91	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	550	298	253	380	399	339	140	1322	411	458	1441	449
Arrive On Green	0.16	0.16	0.16	0.21	0.21	0.21	0.08	0.26	0.26	0.13	0.28	0.28
Sat Flow, veh/h	3442	1863	1583	1774	1863	1583	1774	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	69	194	74	100	112	279	43	688	87	288	817	24
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1774	1863	1583	1774	1695	1583	1721	1695	1583
Q Serve(g_s), s	1.3	7.3	3.1	3.5	3.8	12.6	1.7	8.7	3.2	5.9	10.3	0.8
Cycle Q Clear(g_c), s	1.3	7.3	3.1	3.5	3.8	12.6	1.7	8.7	3.2	5.9	10.3	0.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	550	298	253	380	399	339	140	1322	411	458	1441	449
V/C Ratio(X)	0.13	0.65	0.29	0.26	0.28	0.82	0.31	0.52	0.21	0.63	0.57	0.05
Avail Cap(c_a), veh/h	1023	554	471	612	643	547	284	1830	570	793	2033	633
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.0	29.6	27.8	24.6	24.7	28.1	32.6	23.8	21.7	30.8	23.0	19.6
Incr Delay (d2), s/veh	0.1	2.4	0.6	0.4	0.4	5.4	1.2	0.3	0.3	1.4	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	4.0	1.4	1.8	2.0	6.0	0.9	4.1	1.4	2.9	4.8	0.4
LnGrp Delay(d),s/veh	27.1	32.0	28.4	24.9	25.0	33.5	33.9	24.1	22.0	32.2	23.3	19.6
LnGrp LOS	C	C	C	C	C	C	C	C	C	C	C	B
Approach Vol, veh/h		337			491			818			1129	
Approach Delay, s/veh		30.2			29.8			24.4			25.5	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.7	25.5		15.7	11.9	27.3		20.2
Change Period (Y+Rc), s	3.7	6.0		3.7	6.0	* 6		4.1
Max Green Setting (Gmax), s	17.3	27.0		22.3	12.0	* 30		25.9
Max Q Clear Time (g_c+I1), s	7.9	10.7		9.3	3.7	12.3		14.6
Green Ext Time (p_c), s	0.6	8.5		1.1	0.0	9.0		1.5

Intersection Summary	
HCM 2010 Ctrl Delay	26.5
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay (sec/veh):	7.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Volume (vph)	453	0	0	273	218	83
Conflicting Peds.(#/hr)	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
Right Turn Channelized	Free	Free	Free	Free	Free	Free
Storage Length		0	0		0	0
Median Width	12			12	12	
Grade (%)	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles(%)	2	2	2	2	2	2
Movement Flow Rate	492	0	0	297	237	90
Number of Lanes	1	0	1	1	1	1

Major/Minor	Major 1			Major 2		
Conflicting Flow Rate - All	0	-	492	0	789	492
Stage 1	-	-	-	-	492	-
Stage 2	-	-	-	-	297	-
Follow-up Headway	-	0	2.218	-	3.518	3.318
Pot Capacity-1 Maneuver	-	0	1071	-	359	577
Stage 1	-	0	-	-	615	-
Stage 2	-	0	-	-	754	-
Time blocked-Platoon(%)	-	0	0	-	0	0
Mov Capacity-1 Maneuver	-	-	1071	-	359	577
Mov Capacity-2 Maneuver	-	-	-	-	359	-
Stage 1	-	-	-	-	615	-
Stage 2	-	-	-	-	754	-

Approach	EB	WB	NB
HCM Control Delay (s)	0	0	27
HCM LOS	A	A	D

Lane	NBLn1	NBLn2	EBT	WBL	WBT
Capacity (vph)	359	577			
HCM Control Delay (s)	32.5	12.4	-	0	-
HCM Lane VC Ratio	0.66	0.156	-	-	-
HCM Lane LOS	D	B	-	A	-
HCM 95th Percentile Queue (veh)	4.498	0.551	-	0	-

Intersection	
Intersection Delay (sec/veh):	6.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Volume (vph)	232	260	293	10	4	265
Conflicting Peds.(#/hr)	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
Right Turn Channelized	None	None	None	None	None	None
Storage Length	0			0	0	0
Median Width		0	0		12	
Grade (%)		0%	0%		0%	
Peak Hour Factor	0.76	0.76	0.78	0.78	0.73	0.73
Heavy Vehicles(%)	2	2	2	2	2	2
Movement Flow Rate	305	342	376	13	5	363
Number of Lanes	0	1	1	0	1	1

Major/Minor		Major 1	Major 2			
Conflicting Flow Rate - All	389	0	0	0	1335	383
Stage 1	-	-	-	-	383	-
Stage 2	-	-	-	-	952	-
Follow-up Headway	2.218	-	-	-	3.518	3.318
Pot Capacity-1 Maneuver	1170	-	-	-	169	664
Stage 1	-	-	-	-	689	-
Stage 2	-	-	-	-	375	-
Time blocked-Platoon(%)	0	-	-	-	0	0
Mov Capacity-1 Maneuver	1170	-	-	-	115	664
Mov Capacity-2 Maneuver	-	-	-	-	115	-
Stage 1	-	-	-	-	689	-
Stage 2	-	-	-	-	254	-

Approach	EB	WB	SB
HCM Control Delay (s)	4.3	0	17.1
HCM LOS	A	A	C

Lane	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (vph)					115	664
HCM Control Delay (s)	9.16	-	-	-	37.9	16.8
HCM Lane VC Ratio	0.261	-	-	-	0.048	0.547
HCM Lane LOS	A	-	-	-	E	C
HCM 95th Percentile Queue (veh)	1.049	-	-	-	0.148	3.324

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	46	449	43	46	692	87	116	65	61	255	111	56
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	50	488	42	50	752	84	138	77	67	263	114	53
Adj No. of Lanes	1	2	1	1	2	1	0	1	1	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.84	0.84	0.84	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	103	862	386	162	945	869	171	95	233	305	132	62
Arrive On Green	0.06	0.24	0.24	0.09	0.27	0.27	0.15	0.15	0.15	0.28	0.28	0.28
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1158	646	1583	1083	469	218
Grp Volume(v), veh/h	50	488	42	50	752	84	215	0	67	430	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1805	0	1583	1770	0	0
Q Serve(g_s), s	2.2	9.9	1.7	2.2	16.2	2.1	9.5	0.0	3.1	18.9	0.0	0.0
Cycle Q Clear(g_c), s	2.2	9.9	1.7	2.2	16.2	2.1	9.5	0.0	3.1	18.9	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.64		1.00	0.61		0.12
Lane Grp Cap(c), veh/h	103	862	386	162	945	869	266	0	233	499	0	0
V/C Ratio(X)	0.49	0.57	0.11	0.31	0.80	0.10	0.81	0.00	0.29	0.86	0.00	0.00
Avail Cap(c_a), veh/h	173	1155	517	259	1292	1025	395	0	347	728	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	37.5	27.3	24.1	34.9	28.0	8.8	33.9	0.0	31.2	28.0	0.0	0.0
Incr Delay (d2), s/veh	3.5	0.6	0.1	1.1	2.5	0.0	7.5	0.0	0.7	7.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	4.9	0.7	1.1	8.3	1.5	5.3	0.0	1.4	10.2	0.0	0.0
LnGrp Delay(d),s/veh	41.0	27.9	24.3	36.0	30.5	8.9	41.4	0.0	31.9	35.2	0.0	0.0
LnGrp LOS	D	C	C	D	C	A	D		C	D		
Approach Vol, veh/h		580			886			282			430	
Approach Delay, s/veh		28.7			28.8			39.2			35.2	
Approach LOS		C			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.7	26.0		27.4	10.8	26.9		17.1
Change Period (Y+Rc), s	* 4.2	6.0		* 4.2	6.0	5.0		5.0
Max Green Setting (Gmax), s	* 12	26.8		* 34	8.0	30.0		18.0
Max Q Clear Time (g_c+I1), s	4.2	11.9		20.9	4.2	18.2		11.5
Green Ext Time (p_c), s	0.0	2.6		2.2	1.1	3.7		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	31.4
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay (sec/veh):	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Volume (vph)	1	328	9	11	288	3	14	1	22	0	0	0
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
Right Turn Channelized	None	None	None	None	None	None	None	None	None	None	None	None
Storage Length	550		0	530		0	0		0	0		0
Median Width		12			12			0			0	
Grade (%)		0%			0%			0%			0%	
Peak Hour Factor	0.70	0.70	0.70	0.60	0.60	0.60	0.60	0.60	0.60	0.92	0.92	0.92
Heavy Vehicles(%)	2	2	2	2	2	2	2	2	2	2	2	2
Movement Flow Rate	1	469	13	18	480	5	23	2	37	0	0	0
Number of Lanes	1	2	0	1	2	0	0	1	0	0	1	0

Major/Minor		Major 1			Major 2			Minor 1			Minor 2	
Conflicting Flow Rate - All	485	0	0	482	0	0	754	999	242	757	1003	243
Stage 1	-	-	-	-	-	-	478	478	-	519	519	-
Stage 2	-	-	-	-	-	-	276	521	-	238	484	-
Follow-up Headway	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Capacity-1 Maneuver	1074	-	-	1077	-	-	298	242	759	297	241	758
Stage 1	-	-	-	-	-	-	537	554	-	508	531	-
Stage 2	-	-	-	-	-	-	707	530	-	744	550	-
Time blocked-Platoon(%)	0	-	-	0	-	-	0	0	0	0	0	0
Mov Capacity-1 Maneuver	1074	-	-	1077	-	-	294	238	759	277	237	758
Mov Capacity-2 Maneuver	-	-	-	-	-	-	294	238	-	277	237	-
Stage 1	-	-	-	-	-	-	537	553	-	508	522	-
Stage 2	-	-	-	-	-	-	695	521	-	705	549	-

Approach	EB	WB	NB	SB
HCM Control Delay (s)	0	0.3	14.1	0
HCM LOS	A	A	B	A

Lane	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (vph)	458							0
HCM Control Delay (s)	14.1	8.356	0	-	8.4	0	-	0
HCM Lane VC Ratio	0.135	0.001	-	-	0.017	-	-	-
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th Percentile Queue (veh)	0.462	0.004	-	-	0.052	-	-	-

Intersection	
Intersection Delay (sec/veh):	8.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Volume (vph)	258	116	121	95	21	203
Conflicting Peds.(#/hr)	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
Right Turn Channelized	None	None	None	None	None	None
Storage Length	400	0		0	0	
Median Width	12		0			0
Grade (%)	0%		0%			0%
Peak Hour Factor	0.81	0.81	0.81	0.81	0.85	0.85
Heavy Vehicles(%)	2	2	2	2	2	2
Movement Flow Rate	319	143	149	117	25	239
Number of Lanes	1	1	1	0	0	1

Major/Minor			Major 1			Major 2
Conflicting Flow Rate - All	497	208	0	0	266	0
Stage 1	208	-	-	-	-	-
Stage 2	289	-	-	-	-	-
Follow-up Headway	3.518	3.318	-	-	2.218	-
Pot Capacity-1 Maneuver	532	832	-	-	1298	-
Stage 1	827	-	-	-	-	-
Stage 2	760	-	-	-	-	-
Time blocked-Platoon(%)	0	0	-	-	0	-
Mov Capacity-1 Maneuver	520	832	-	-	1298	-
Mov Capacity-2 Maneuver	520	-	-	-	-	-
Stage 1	827	-	-	-	-	-
Stage 2	743	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay (s)	18.5	0	0.7
HCM LOS	C	A	A

Lane	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (vph)			520	832		
HCM Control Delay (s)	-	-	22.3	10.2	7.827	-
HCM Lane VC Ratio	-	-	0.613	0.172	0.019	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th Percentile Queue (veh)	-	-	4.081	0.619	0.058	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	59	25	57	289	57	147	32	37	154	74	211	145
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Queue, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking, Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow Rate	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Lanes	0	1	0	1	1	0	1	1	0	1	2	0
Capacity, veh/h	272	129	207	454	225	580	54	71	295	112	480	408
Arriving On Green	0.49	0.49	0.49	0.49	0.49	0.49	0.03	0.22	0.22	0.06	0.26	0.26
Sat Flow, veh/h	440.5	183.7	425.6	1081.0	461.8	1190.8	1774.0	315.9	1314.8	1774.0	1862.7	1583.3
Grp Volume(v), veh/h	293.8	0.0	0.0	314.1	0.0	221.7	44.4	0.0	265.3	88.1	251.2	172.6
Grp Sat Flow(s),veh/h/ln	1052.7	0.0	0.0	1081.0	0.0	1652.6	1774.0	0.0	1630.7	1774.0	1862.7	1583.3
Q Serve(g_s), s	6.0	0.0	0.0	15.4	0.0	4.2	1.3	0.0	8.0	2.6	6.2	4.8
Cycle Q Clear(g_c), s	10.2	0.0	0.0	25.7	0.0	4.2	1.3	0.0	8.0	2.6	6.2	4.8
Proportion In Lane	0.418		0.404	1.000		0.721	1.000		0.806	1.000		1.000
Lane Grp Cap(c), veh/h	608.5	0.0	0.0	454.0	0.0	805.1	53.5	0.0	366.4	112.3	480.2	408.2
V/C Ratio(X)	0.483	0.000	0.000	0.692	0.000	0.275	0.830	0.000	0.724	0.785	0.523	0.423
Avail Cap(c_a), veh/h	608.5	0.0	0.0	454.0	0.0	805.1	166.2	0.0	488.9	199.5	593.4	504.4
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.000	0.000	0.000	1.000	0.000	1.000	1.000	0.000	1.000	1.000	1.000	1.000
Uniform Delay (d), s/veh	9.1	0.0	0.0	18.7	0.0	8.1	25.7	0.0	19.2	24.6	17.0	16.5
Incr Delay (d2), s/veh	0.6	0.0	0.0	4.5	0.0	0.2	26.4	0.0	3.5	11.3	0.9	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane Group Delay (d), s/veh	9.7	0.0	0.0	23.1	0.0	8.3	52.1	0.0	22.7	35.9	17.9	17.2
Lane Group LOS	A			C		A	D		C	D	B	B
Approach Volume, veh/h		294			536			310			512	
Approach Delay, s/veh		9.7			17.0			26.9			20.8	
Approach LOS		A			B			C			C	

Timer												
Assigned Phase		4			8		5	2		1	6	
Phase Duration (G+Y+Rc), s		30.00			30.00		5.61	15.99		7.38	17.76	
Change Period (Y+Rc), s		4.00			4.00		4.00	4.00		4.00	4.00	
Max Green Setting (Gmax), s		26.00			26.00		5.00	16.00		6.00	17.00	
Max Q Clear Time (g_c+I1), s		12.25			27.65		3.33	10.04		4.61	8.17	
Green Extension Time (p_c)		4.09			0.00		0.01	1.95		0.02	2.54	

Intersection Summary	
HCM 2010 Control Delay	18.7
HCM 2010 Level of Service	B

Intersection	
Intersection Delay (sec/veh):	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Volume (vph)	0	187	396	7	218	0	0	0	0	67	0	50
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
Right Turn Channelized	None	None	None	None	None	None	None	None	None	Yield	Yield	Yield
Storage Length	0		0	0		0	0		0	0		50
Median Width		12			12			0			0	
Grade (%)		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.85	0.85	0.85	0.92	0.92	0.92	0.88	0.88	0.88
Heavy Vehicles(%)	2	2	2	2	2	2	2	2	2	2	2	2
Movement Flow Rate	0	197	417	8	256	0	0	0	0	76	0	57
Number of Lanes	0	1	1	1	1	0	0	0	0	0	1	0

Major/Minor	Major 1			Major 2			Minor 2		
Conflicting Flow Rate - All	-	0	0	614	0	-	678	886	128
Stage 1	-	-	-	-	-	-	272	272	-
Stage 2	-	-	-	-	-	-	406	614	-
Follow-up Headway	0	-	-	2.218	-	0	3.518	4.018	3.318
Pot Capacity-1 Maneuver	0	-	-	965	-	0	366	284	922
Stage 1	0	-	-	-	-	0	734	685	-
Stage 2	0	-	-	-	-	0	622	483	-
Time blocked-Platoon(%)	0	-	-	0	-	0	0	0	0
Mov Capacity-1 Maneuver	-	-	-	965	-	-	364	282	922
Mov Capacity-2 Maneuver	-	-	-	-	-	-	364	282	-
Stage 1	-	-	-	-	-	-	-	679	-
Stage 2	-	-	-	-	-	-	622	483	-

Approach	EB	WB	SB
HCM Control Delay (s)	0	0.3	12.2
HCM LOS	A	A	B

Lane	EBT	EBR	WBL	WBT	SBLn1
Capacity (vph)					636
HCM Control Delay (s)	-	-	8.763	-	12.2
HCM Lane VC Ratio	-	-	0.009	-	0.209
HCM Lane LOS	-	-	A	-	B
HCM 95th Percentile Queue (veh)	-	-	0.026	-	0.783

Intersection	
Intersection Delay (sec/veh):	4.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Volume (vph)	171	5	0	92	141	5
Conflicting Peds.(#/hr)	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
Right Turn Channelized	None	None	None	None	Free	Free
Storage Length		0	0		0	250
Median Width	0			0	12	
Grade (%)	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.84	0.84
Heavy Vehicles(%)	2	2	2	2	2	2
Movement Flow Rate	186	5	0	100	168	6
Number of Lanes	1	0	0	2	1	1

Major/Minor	Major 1			Major 2		
Conflicting Flow Rate - All	0	0	-	0	239	189
Stage 1	-	-	-	-	189	-
Stage 2	-	-	-	-	50	-
Follow-up Headway	-	-	0	-	3.52	3.32
Pot Capacity-1 Maneuver	-	-	0	-	728	821
Stage 1	-	-	0	-	824	-
Stage 2	-	-	0	-	966	-
Time blocked-Platoon(%)	-	-	0	-	0	0
Mov Capacity-1 Maneuver	-	-	-	-	728	821
Mov Capacity-2 Maneuver	-	-	-	-	728	-
Stage 1	-	-	-	-	824	-
Stage 2	-	-	-	-	966	-

Approach	EB	WB	NB
HCM Control Delay (s)	0	0	11.3
HCM LOS	A	A	B

Lane	NBLn1	NBLn2	EBT	EBR	WBT
Capacity (vph)	728	821			
HCM Control Delay (s)	11.4	9.4	-	-	-
HCM Lane VC Ratio	0.231	0.007	-	-	-
HCM Lane LOS	B	A	-	-	-
HCM 95th Percentile Queue (veh)	0.888	0.022	-	-	-

Intersection	
Intersection Delay (sec/veh):	5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Volume (vph)	12	192	112	104	181	19
Conflicting Peds.(#/hr)	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
Right Turn Channelized	None	None	None	None	None	None
Storage Length	0	0	160			90
Median Width	12			12	12	
Grade (%)	0%			0%	0%	
Peak Hour Factor	0.86	0.86	0.89	0.89	0.95	0.95
Heavy Vehicles(%)	2	2	2	2	2	2
Movement Flow Rate	14	223	126	117	191	20
Number of Lanes	1	0	1	1	1	1

Major/Minor				Major 1	Major 2	
Conflicting Flow Rate - All	570	106	211	0	0	0
Stage 1	201	-	-	-	-	-
Stage 2	369	-	-	-	-	-
Follow-up Headway	3.518	3.318	2.218	-	-	-
Pot Capacity-1 Maneuver	483	948	1360	-	-	-
Stage 1	833	-	-	-	-	-
Stage 2	699	-	-	-	-	-
Time blocked-Platoon(%)	0	0	0	-	-	-
Mov Capacity-1 Maneuver	438	948	1360	-	-	-
Mov Capacity-2 Maneuver	438	-	-	-	-	-
Stage 1	833	-	-	-	-	-
Stage 2	634	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay (s)	10.5	4.1	0
HCM LOS	B	A	A

Lane	NBL	NBT	EBLn1	SBT	SBR
Capacity (vph)			887		
HCM Control Delay (s)	7.917	-	10.5	-	-
HCM Lane VC Ratio	0.093	-	0.267	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th Percentile Queue (veh)	0.305	-	1.081	-	-

Intersection	
Intersection Delay (sec/veh):	14.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Volume (vph)	256	62	161	99	36	368
Conflicting Peds.(#/hr)	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
Right Turn Channelized	None	None	None	None	None	None
Storage Length	0	0		100	170	
Median Width	12		12			12
Grade (%)	0%		0%			0%
Peak Hour Factor	0.87	0.87	0.85	0.85	0.94	0.94
Heavy Vehicles(%)	2	2	2	2	2	2
Movement Flow Rate	294	71	189	116	38	391
Number of Lanes	1	0	1	1	1	1

Major/Minor			Major 1			Major 2
Conflicting Flow Rate - All	714	153	0	0	305	0
Stage 1	247	-	-	-	-	-
Stage 2	467	-	-	-	-	-
Follow-up Headway	3.518	3.318	-	-	2.218	-
Pot Capacity-1 Maneuver	403	968	-	-	1264	-
Stage 1	823	-	-	-	-	-
Stage 2	631	-	-	-	-	-
Time blocked-Platoon(%)	10	10	-	-	10	-
Mov Capacity-1 Maneuver	390	968	-	-	1264	-
Mov Capacity-2 Maneuver	390	-	-	-	-	-
Stage 1	823	-	-	-	-	-
Stage 2	612	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay (s)	41.9	0	0.7
HCM LOS	E	A	A

Lane	NBT	NBR	WBLn1	SBL	SBT
Capacity (vph)			441		
HCM Control Delay (s)	-	-	41.9	7.937	-
HCM Lane VC Ratio	-	-	0.829	0.03	-
HCM Lane LOS	-	-	E	A	-
HCM 95th Percentile Queue (veh)	-	-	7.905	0.094	-

Intersection	
Intersection Delay (sec/veh):	216.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Volume (vph)	0	244	226	407	349	0	0	0	0	53	2	553
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
Right Turn Channelized	Free	Free	Free	None	None	None	None	None	None	Yield	Yield	Yield
Storage Length	0		0	200		0	0		0	0		25
Median Width		12			12			0			0	
Grade (%)		0%			0%			0%			0%	
Peak Hour Factor	0.77	0.77	0.77	0.86	0.86	0.86	0.92	0.92	0.92	0.95	0.95	0.95
Heavy Vehicles(%)	2	2	2	2	2	2	2	2	2	2	2	2
Movement Flow Rate	0	317	294	473	406	0	0	0	0	56	2	582
Number of Lanes	0	1	0	1	2	0	0	0	0	0	1	0

Major/Minor	Major 1			Major 2			Minor 2		
Conflicting Flow Rate - All	406	0	0	611	0	-	1816	1963	203
Stage 1	-	-	-	-	-	-	1352	1352	-
Stage 2	-	-	-	-	-	-	464	611	-
Follow-up Headway	2.22	-	-	2.22	-	0	3.52	4.02	3.32
Pot Capacity-1 Maneuver	1149	-	-	964	-	0	# 49	62	804
Stage 1	-	-	-	-	-	0	158	217	-
Stage 2	-	-	-	-	-	0	548	482	-
Time blocked-Platoon(%)	0	-	-	0	-	0	0	0	0
Mov Capacity-1 Maneuver	1149	-	-	964	-	-	# 30	32	804
Mov Capacity-2 Maneuver	-	-	-	-	-	-	# 30	32	-
Stage 1	-	-	-	-	-	-	158	111	-
Stage 2	-	-	-	-	-	-	548	482	-

Approach	EB	WB	SB
HCM Control Delay (s)	0	6.6	$ 712.3
HCM LOS	A	A	F

Lane	EBL	EBT	EBR	WBL	WBT	SBLn1
Capacity (vph)						257
HCM Control Delay (s)	0	-	-	12.281	-	$ -1
HCM Lane VC Ratio	-	-	-	0.491	-	2.49
HCM Lane LOS	A	-	-	B	-	F
HCM 95th Percentile Queue (veh)	0	-	-	2.768	-	52.451

Intersection	
Intersection Delay (sec/veh):	10.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Volume (vph)	143	154	0	0	595	62	162	2	158	0	0	0
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
Right Turn Channelized	None	None	None	Free	Free	Free	Yield	Yield	Yield	None	None	None
Storage Length	220		0	0		0	0		25	0		0
Median Width		12			12			0			0	
Grade (%)		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.25	0.92	0.92	0.93	0.90	0.92	0.90	0.92	0.92	0.92
Heavy Vehicles(%)	2	2	2	2	2	2	2	2	2	2	2	2
Movement Flow Rate	147	159	0	0	647	67	180	2	176	0	0	0
Number of Lanes	1	2	0	0	2	0	0	1	0	0	0	0

Major/Minor	Major 1			Major 2			Minor 1		
Conflicting Flow Rate - All	714	0	-	159	0	0	777	1167	80
Stage 1	-	-	-	-	-	-	453	453	-
Stage 2	-	-	-	-	-	-	324	714	-
Follow-up Headway	2.22	-	0	2.22	-	-	3.52	4.02	3.32
Pot Capacity-1 Maneuver	882	-	0	1418	-	-	287	192	964
Stage 1	-	-	0	-	-	-	556	568	-
Stage 2	-	-	0	-	-	-	662	433	-
Time blocked-Platoon(%)	0	-	0	0	-	-	0	0	0
Mov Capacity-1 Maneuver	882	-	-	1418	-	-	250	160	964
Mov Capacity-2 Maneuver	-	-	-	-	-	-	250	160	-
Stage 1	-	-	-	-	-	-	463	473	-
Stage 2	-	-	-	-	-	-	662	433	-

Approach	EB	WB	NB
HCM Control Delay (s)	4.8	0	36.1
HCM LOS	A	A	E

Lane	NBLn1	EBL	EBT	WBL	WBT	WBR
Capacity (vph)	456					
HCM Control Delay (s)	36.1	9.899	-	0	-	-
HCM Lane VC Ratio	0.784	0.167	-	-	-	-
HCM Lane LOS	E	A	-	A	-	-
HCM 95th Percentile Queue (veh)	6.968	0.598	-	0	-	-

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	145	145	247	86	217	386
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	165	91	274	96	238	353
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.88	0.88	0.90	0.90	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	240	529	353	1191	610	519
Arrive On Green	0.14	0.14	0.20	0.64	0.33	0.33
Sat Flow, veh/h	1774	1583	1774	1863	1863	1583
Grp Volume(v), veh/h	165	91	274	96	238	353
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1863	1863	1583
Q Serve(g_s), s	3.1	1.4	5.2	0.7	3.5	6.8
Cycle Q Clear(g_c), s	3.1	1.4	5.2	0.7	3.5	6.8
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	240	529	353	1191	610	519
V/C Ratio(X)	0.69	0.17	0.78	0.08	0.39	0.68
Avail Cap(c_a), veh/h	300	583	650	2414	1522	1293
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.6	8.3	13.5	2.4	9.2	10.3
Incr Delay (d2), s/veh	4.7	0.2	3.7	0.0	0.4	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	1.5	2.9	0.4	1.9	3.2
LnGrp Delay(d),s/veh	19.4	8.5	17.1	2.5	9.6	11.9
LnGrp LOS	B	A	B	A	A	B
Approach Vol, veh/h	256			370	591	
Approach Delay, s/veh	15.5			13.3	11.0	
Approach LOS	B			B	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		26.7		8.8	11.1	15.6		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		46.0		6.0	13.0	29.0		
Max Q Clear Time (g_c+I1), s		2.7		5.1	7.2	8.8		
Green Ext Time (p_c), s		3.0		0.1	0.4	2.8		

Intersection Summary	
HCM 2010 Ctrl Delay	12.6
HCM 2010 LOS	B

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	88	270	62	29	163	200
Number	3	18	2	12	1	6
Initial Queue, veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking, Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow Rate	1863	1863	1863	1863	1863	1863
Lanes	1	1	1	0	1	1
Capacity, veh/h	232	423	759	171	242	1350
Arriving On Green	0.13	0.13	0.52	0.52	0.27	1.00
Sat Flow, veh/h	1774.0	1583.3	1471.8	332.3	1774.0	1862.7
Grp Volume(v), veh/h	104.8	166.7	0.0	95.0	194.0	238.1
Grp Sat Flow(s),veh/h/ln	1774.0	1583.3	0.0	1804.1	1774.0	1862.7
Q Serve(g_s), s	3.0	4.8	0.0	1.5	5.6	0.0
Cycle Q Clear(g_c), s	3.0	4.8	0.0	1.5	5.6	0.0
Proportion In Lane	1.000	1.000		0.184	1.000	
Lane Grp Cap(c), veh/h	231.7	422.5	0.0	930.5	241.7	1349.6
V/C Ratio(X)	0.452	0.394	0.000	0.102	0.803	0.176
Avail Cap(c_a), veh/h	546.2	703.3	0.0	930.5	514.1	1349.6
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00
Upstream Filter(I)	1.000	1.000	0.000	1.000	0.975	0.975
Uniform Delay (d), s/veh	22.2	16.6	0.0	6.8	19.4	0.0
Incr Delay (d2), s/veh	1.4	0.6	0.0	0.2	6.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
Lane Group Delay (d), s/veh	23.6	17.2	0.0	7.1	25.4	0.3
Lane Group LOS	C	B		A	C	A
Approach Volume, veh/h	271		95			432
Approach Delay, s/veh	19.6		7.1			11.5
Approach LOS	B		A			B

Timer					
Assigned Phase			2		1	6
Phase Duration (G+Y+Rc), s			32.48		11.52	44.00
Change Period (Y+Rc), s			4.00		4.00	4.00
Max Green Setting (Gmax), s			20.00		16.00	40.00
Max Q Clear Time (g_c+I1), s			3.49		7.62	2.00
Green Extension Time (p_c)			1.45		0.30	1.74

Intersection Summary	
HCM 2010 Control Delay	13.8
HCM 2010 Level of Service	B

Intersection	
Intersection Delay (sec/veh):	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Volume (vph)	13	0	6	3	0	2	8	42	1	0	48	10
Conflicting Peds.(#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
Right Turn Channelized	None	None	None	None	None	None	None	None	None	None	None	None
Storage Length	0		0	0		0	0		0	0		0
Median Width		0			0			0			0	
Grade (%)		0%			0%			0%			0%	
Peak Hour Factor	0.70	0.70	0.70	0.42	0.42	0.42	0.74	0.74	0.74	0.55	0.55	0.55
Heavy Vehicles(%)	2	2	2	2	2	2	2	2	2	2	2	2
Movement Flow Rate	19	0	9	7	0	5	11	57	1	0	87	18
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Major/Minor		Minor 2			Minor 1			Major 1			Major 2	
Conflicting Flow Rate - All	178	176	96	181	185	58	105	0	0	58	0	0
Stage 1	96	96	-	80	80	-	-	-	-	-	-	-
Stage 2	82	80	-	101	105	-	-	-	-	-	-	-
Follow-up Headway	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Capacity-1 Maneuver	784	717	960	781	710	1008	1486	-	-	1546	-	-
Stage 1	911	815	-	929	829	-	-	-	-	-	-	-
Stage 2	926	828	-	905	808	-	-	-	-	-	-	-
Time blocked-Platoon(%)	0	0	0	0	0	0	0	-	-	0	-	-
Mov Capacity-1 Maneuver	776	711	960	769	704	1008	1486	-	-	1546	-	-
Mov Capacity-2 Maneuver	776	711	-	769	704	-	-	-	-	-	-	-
Stage 1	904	815	-	922	822	-	-	-	-	-	-	-
Stage 2	914	821	-	897	808	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay (s)	9.5	9.3	1.2	0
HCM LOS	A	A	A	A

Lane	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (vph)				826	850			
HCM Control Delay (s)	7.44	0	-	9.5	9.3	0	-	-
HCM Lane VC Ratio	0.007	-	-	0.033	0.014	-	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th Percentile Queue (veh)	0.022	-	-	0.102	0.043	0	-	-

Intersection	
Intersection Delay (sec/veh):	4.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Volume (vph)	52	23	0	0	110	10	0	0	0	10	0	69
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
Right Turn Channelized	None	None	None	None	None	None	None	None	None	None	None	None
Storage Length	0		0	0		0	0		0	0		0
Median Width		0			0			0			0	
Grade (%)		0%			0%			0%			0%	
Peak Hour Factor	0.78	0.78	0.78	0.83	0.83	0.83	0.92	0.92	0.92	0.75	0.75	0.75
Heavy Vehicles(%)	2	2	2	2	2	2	2	2	2	2	2	2
Movement Flow Rate	67	29	0	0	133	12	0	0	0	13	0	92
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Major/Minor	Major 1			Major 2			Minor 1			Minor 2		
Conflicting Flow Rate - All	145	0	0	29	0	0	348	308	29	302	302	139
Stage 1	-	-	-	-	-	-	163	163	-	139	139	-
Stage 2	-	-	-	-	-	-	185	145	-	163	163	-
Follow-up Headway	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Capacity-1 Maneuver	1437	-	-	1584	-	-	607	606	1046	650	611	909
Stage 1	-	-	-	-	-	-	839	763	-	864	782	-
Stage 2	-	-	-	-	-	-	817	777	-	839	763	-
Time blocked-Platoon(%)	0	-	-	0	-	-	0	0	0	0	0	0
Mov Capacity-1 Maneuver	1437	-	-	1584	-	-	526	578	1046	627	582	909
Mov Capacity-2 Maneuver	-	-	-	-	-	-	526	578	-	627	582	-
Stage 1	-	-	-	-	-	-	800	727	-	823	782	-
Stage 2	-	-	-	-	-	-	734	777	-	800	727	-

Approach	EB	WB	NB	SB
HCM Control Delay (s)	5.3	0	0	9.8
HCM LOS	A	A	A	A

Lane	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (vph)	0							860
HCM Control Delay (s)	0	7.627	0	-	0	-	-	9.8
HCM Lane VC Ratio	-	0.046	-	-	-	-	-	0.122
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th Percentile Queue (veh)	-	0.146	-	-	0	-	-	0.417

Intersection	
Intersection Delay (sec/veh):	6.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Volume (vph)	70	37	13	25	51	25
Conflicting Peds.(#/hr)	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
Right Turn Channelized	None	None	None	None	None	None
Storage Length	0	0		0	0	
Median Width	12		0			0
Grade (%)	0%		0%			0%
Peak Hour Factor	0.89	0.89	0.83	0.83	0.69	0.69
Heavy Vehicles(%)	2	2	2	2	2	2
Movement Flow Rate	79	42	16	30	74	36
Number of Lanes	1	0	1	0	0	1

Major/Minor			Major 1			Major 2
Conflicting Flow Rate - All	215	31	0	0	46	0
Stage 1	31	-	-	-	-	-
Stage 2	184	-	-	-	-	-
Follow-up Headway	3.518	3.318	-	-	2.218	-
Pot Capacity-1 Maneuver	773	1043	-	-	1562	-
Stage 1	992	-	-	-	-	-
Stage 2	848	-	-	-	-	-
Time blocked-Platoon(%)	0	0	-	-	0	-
Mov Capacity-1 Maneuver	736	1043	-	-	1562	-
Mov Capacity-2 Maneuver	736	-	-	-	-	-
Stage 1	992	-	-	-	-	-
Stage 2	807	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay (s)	10.2	0	5
HCM LOS	B	A	A

Lane	NBT	NBR	WBLn1	SBL	SBT
Capacity (vph)			819		
HCM Control Delay (s)	-	-	10.2	7.419	-
HCM Lane VC Ratio	-	-	0.147	0.047	-
HCM Lane LOS	-	-	B	A	-
HCM 95th Percentile Queue (veh)	-	-	0.513	0.149	-

Intersection	
Intersection Delay (sec/veh):	4.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Volume (vph)	14	80	44	63	100	34
Conflicting Peds.(#/hr)	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
Right Turn Channelized	None	None	None	None	None	None
Storage Length	0	0	0			0
Median Width	12			0	0	
Grade (%)	0%			0%	0%	
Peak Hour Factor	0.67	0.67	0.82	0.82	0.75	0.75
Heavy Vehicles(%)	2	2	2	2	2	2
Movement Flow Rate	21	119	54	77	133	45
Number of Lanes	1	0	0	1	1	0

Major/Minor				Major 1	Major 2	
Conflicting Flow Rate - All	341	156	178	0	0	0
Stage 1	156	-	-	-	-	-
Stage 2	185	-	-	-	-	-
Follow-up Headway	3.518	3.318	2.218	-	-	-
Pot Capacity-1 Maneuver	655	890	1398	-	-	-
Stage 1	872	-	-	-	-	-
Stage 2	847	-	-	-	-	-
Time blocked-Platoon(%)	0	0	0	-	-	-
Mov Capacity-1 Maneuver	629	890	1398	-	-	-
Mov Capacity-2 Maneuver	629	-	-	-	-	-
Stage 1	872	-	-	-	-	-
Stage 2	813	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay (s)	10.2	3.2	0
HCM LOS	B	A	A

Lane	NBL	NBT	EBLn1	SBT	SBR
Capacity (vph)			838		
HCM Control Delay (s)	7.678	-	10.2	-	-
HCM Lane VC Ratio	0.038	-	0.167	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th Percentile Queue (veh)	0.12	-	0.599	-	-

Intersection	
Intersection Delay (sec/veh):	3.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Volume (vph)	12	111	227	70	115	55
Conflicting Peds.(#/hr)	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
Right Turn Channelized	None	None	None	None	None	None
Storage Length	170			80	0	0
Median Width		12	12		12	
Grade (%)		0%	0%		0%	
Peak Hour Factor	0.82	0.82	0.94	0.94	0.90	0.90
Heavy Vehicles(%)	2	2	2	2	2	2
Movement Flow Rate	15	135	241	74	128	61
Number of Lanes	1	1	1	1	1	0

Major/Minor	Major 1		Major 2			
Conflicting Flow Rate - All	315	0	0	0	443	158
Stage 1	-	-	-	-	278	-
Stage 2	-	-	-	-	165	-
Follow-up Headway	2.218	-	-	-	3.518	3.318
Pot Capacity-1 Maneuver	1245	-	-	-	572	887
Stage 1	-	-	-	-	769	-
Stage 2	-	-	-	-	864	-
Time blocked-Platoon(%)	0	-	-	-	0	0
Mov Capacity-1 Maneuver	1245	-	-	-	565	887
Mov Capacity-2 Maneuver	-	-	-	-	565	-
Stage 1	-	-	-	-	769	-
Stage 2	-	-	-	-	854	-

Approach	EB	WB	SB
HCM Control Delay (s)	0.8	0	13
HCM LOS	A	A	B

Lane	EBL	EBT	WBT	WBR	SBLn1
Capacity (vph)					640
HCM Control Delay (s)	7.926	-	-	-	13
HCM Lane VC Ratio	0.012	-	-	-	0.295
HCM Lane LOS	A	-	-	-	B
HCM 95th Percentile Queue (veh)	0.036	-	-	-	1.229

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	130	0	201	0	0	0	112	284	0	3	662	155
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Queue, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking, Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow Rate	1863	0	1863	0	0	0	1863	1863	0	1863	1863	1863
Lanes	1	1	1	0	1	0	2	2	0	1	2	0
Capacity, veh/h	238	0	212	0	0	0	225	2144	0	4	1539	314
Arriving On Green	0.13	0.00	0.13	0.00	0.00	0.00	0.07	0.58	0.00	0.00	0.51	0.51
Sat Flow, veh/h	1774.0	0.0	1583.3	0.0	0.0	0.0	3441.6	3725.5	0.0	1774.0	3004.7	612.6
Grp Volume(v), veh/h	146.1	0.0	127.0	0.0	0.0	0.0	127.3	322.7	0.0	3.4	466.3	439.4
Grp Sat Flow(s),veh/h/ln	1774.0	0.0	1583.3	0.0	0.0	0.0	1720.8	1862.7	0.0	1774.0	1862.7	1754.6
Q Serve(g_s), s	3.2	5.6	3.1	0.0	0.0	0.0	1.5	1.7	0.0	0.1	6.8	6.8
Cycle Q Clear(g_c), s	3.2	5.6	3.1	0.0	0.0	0.0	1.5	1.7	0.0	0.1	6.8	6.8
Proportion In Lane	1.000		1.000	0.000		0.000	1.000		0.000	1.000		0.349
Lane Grp Cap(c), veh/h	237.5	0.0	212.0	0.0	0.0	0.0	224.8	2144.4	0.0	4.3	954.1	898.7
V/C Ratio(X)	0.615	0.000	0.599	0.000	0.000	0.000	0.566	0.150	0.000	0.799	0.489	0.489
Avail Cap(c_a), veh/h	708.2	0.0	632.0	0.0	0.0	0.0	380.7	2144.4	0.0	192.0	954.1	898.7
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.000	0.000	1.000	0.000	0.000	0.000	1.000	1.000	0.000	1.000	1.000	1.000
Uniform Delay (d), s/veh	17.0	0.0	17.0	0.0	0.0	0.0	18.9	4.1	0.0	20.7	6.6	6.6
Incr Delay (d2), s/veh	2.6	0.0	2.7	0.0	0.0	0.0	2.2	0.1	0.0	141.4	1.8	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane Group Delay (d), s/veh	19.6	0.0	19.7	0.0	0.0	0.0	21.1	4.2	0.0	162.2	8.4	8.5
Lane Group LOS	B		B				C	A		F	A	A
Approach Volume, veh/h		273			0			450			909	
Approach Delay, s/veh		19.6			0.0			9.0			9.0	
Approach LOS		B						A			A	

Timer								
Assigned Phase		4		8		5	2		1	6	
Phase Duration (G+Y+Rc), s		9.57		0.00		6.72	27.94		4.08	25.30	
Change Period (Y+Rc), s		4.00		4.00		4.00	4.00		4.00	4.00	
Max Green Setting (Gmax), s		16.60		16.50		4.60	21.40		4.50	21.30	
Max Q Clear Time (g_c+I1), s		5.23		0.00		3.49	3.67		2.08	8.78	
Green Extension Time (p_c)		0.59		0.00		0.03	6.95		0.00	5.77	

Intersection Summary	
HCM 2010 Control Delay	10.8
HCM 2010 Level of Service	B

Intersection	
Intersection Delay (sec/veh):	1.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Volume (vph)	26	691	809	4	9	64
Conflicting Peds.(#/hr)	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
Right Turn Channelized	None	None	None	None	None	None
Storage Length	90			0	0	0
Median Width		24	24		12	
Grade (%)		0%	0%		0%	
Peak Hour Factor	0.83	0.83	0.91	0.91	0.70	0.70
Heavy Vehicles(%)	2	2	2	2	2	2
Movement Flow Rate	31	833	889	4	13	91
Number of Lanes	1	2	2	0	1	0

Major/Minor	Major 1		Major 2			
Conflicting Flow Rate - All	893	0	0	0	1370	447
Stage 1	-	-	-	-	891	-
Stage 2	-	-	-	-	479	-
Follow-up Headway	2.22	-	-	-	3.52	3.32
Pot Capacity-1 Maneuver	755	-	-	-	137	559
Stage 1	-	-	-	-	361	-
Stage 2	-	-	-	-	589	-
Time blocked-Platoon(%)	0	-	-	-	0	0
Mov Capacity-1 Maneuver	755	-	-	-	131	559
Mov Capacity-2 Maneuver	-	-	-	-	131	-
Stage 1	-	-	-	-	361	-
Stage 2	-	-	-	-	565	-

Approach	EB	WB	SB
HCM Control Delay (s)	0.4	0	17.2
HCM LOS	A	A	C

Lane	EBL	EBT	WBT	WBR	SBLn1
Capacity (vph)					398
HCM Control Delay (s)	9.975	-	-	-	17.2
HCM Lane VC Ratio	0.041	-	-	-	0.262
HCM Lane LOS	A	-	-	-	C
HCM 95th Percentile Queue (veh)	0.13	-	-	-	1.036

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	339	318	37	16	333	143	24	13	17	195	25	461
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Queue, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking, Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow Rate	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Lanes	2	1	1	1	2	0	0	1	0	0	1	2
Capacity, veh/h	447	594	505	25	592	139	227	123	76	312	40	550
Arriving On Green	0.13	0.32	0.32	0.01	0.20	0.20	0.24	0.24	0.24	0.20	0.20	0.20
Sat Flow, veh/h	3441.6	1583.3	1583.3	1774.0	2917.4	686.9	939.0	508.6	313.0	1581.0	202.7	2786.7
Grp Volume(v), veh/h	368.5	345.7	10.9	21.6	286.1	270.7	60.0	0.0	0.0	268.3	0.0	440.2
Grp Sat Flow(s),veh/h/ln	1720.8	1862.7	1583.3	1774.0	1862.7	1741.5	1760.6	0.0	0.0	1783.7	0.0	1393.3
Q Serve(g_s), s	7.3	10.9	0.3	0.9	10.1	10.3	1.9	0.0	0.0	10.0	0.0	10.5
Cycle Q Clear(g_c), s	7.3	10.9	0.3	0.9	10.1	10.3	1.9	0.0	0.0	10.0	0.0	10.5
Proportion In Lane	1.000		1.000	1.000		0.394	0.533		0.178	0.886		1.000
Lane Grp Cap(c), veh/h	447.0	594.1	505.0	24.8	378.2	353.6	424.7	0.0	0.0	352.2	0.0	550.2
V/C Ratio(X)	0.824	0.582	0.022	0.871	0.756	0.765	0.141	0.000	0.000	0.762	0.000	0.800
Avail Cap(c_a), veh/h	447.0	594.1	505.0	113.9	438.7	410.2	424.7	0.0	0.0	420.1	0.0	656.3
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.000	0.000	1.000	0.000	1.000
Uniform Delay (d), s/veh	29.7	19.9	16.4	34.5	26.3	26.3	20.9	0.0	0.0	26.6	0.0	26.8
Incr Delay (d2), s/veh	11.9	1.4	0.0	54.5	6.3	7.3	0.7	0.0	0.0	6.7	0.0	5.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane Group Delay (d), s/veh	41.6	21.4	16.4	89.0	32.6	33.6	21.6	0.0	0.0	33.2	0.0	32.7
Lane Group LOS	D	C	B	F	C	C	C			C		C
Approach Volume, veh/h		725			578			60			709	
Approach Delay, s/veh		31.6			35.2			21.6			32.9	
Approach LOS		C			D			C			C	

Timer												
Assigned Phase	7	4		3	8			2			6	
Phase Duration (G+Y+Rc), s	13.10	26.35		4.98	18.23			20.90			17.83	
Change Period (Y+Rc), s	4.00	4.00		4.00	4.00			4.00			4.00	
Max Green Setting (Gmax), s	9.10	21.10		4.50	16.50			16.90			16.50	
Max Q Clear Time (g_c+I1), s	9.31	12.87		2.85	12.28			3.88			12.55	
Green Extension Time (p_c)	0.00	3.19		0.00	1.95			0.17			1.28	

Intersection Summary	
HCM 2010 Control Delay	32.8
HCM 2010 Level of Service	C

Intersection	
Intersection Delay (sec/veh)	6.8
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adjusted Approach Flow (vph)	288	381	72	126
Demand Flow Rate (pc/h)	294	388	73	128
Vehicles Circulating (pc/h)	13	109	277	444
Vehicles Exiting (pc/h)	559	241	30	53
Follow-Up Headway (s)	3.186	3.186	3.186	3.186
Ped Vol. Crossing Leg (#/hr)	0	0	0	0
Ped Capacity Adjustment	1.000	1.000	1.000	1.000
Approach Delay (sec/veh)	5.8	7.8	5.1	7.0
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
Right Turn Channelized				
Lane Utilization	1.000	1.000	1.000	1.000
Critical Headway (s)	5.193	5.193	5.193	5.193
Entry Flow Rate (pc/h)	294	388	73	128
Capacity, Entry Lane (pc/h)	1115	1013	857	725
Entry HV Adjustment Factor	0.981	0.981	0.984	0.984
Flow Rate, Entry (vph)	288	381	72	126
Capacity, Entry (vph)	1094	994	843	713
Volume to Capacity Ratio	0.264	0.383	0.085	0.177
Control Delay (sec/veh)	5.8	7.8	5.1	7.0
Level of Service	A	A	A	A
95th-Percentile Queue (veh)	1	2	0	1

Intersection	
Intersection Delay (sec/veh)	5.6
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adjusted Approach Flow (vph)	38	108	278	226
Demand Flow Rate (pc/h)	38	110	283	231
Vehicles Circulating (pc/h)	231	300	67	27
Vehicles Exiting (pc/h)	27	50	202	383
Follow-Up Headway (s)	3.186	3.186	3.186	3.186
Ped Vol. Crossing Leg (#/hr)	0	0	0	0
Ped Capacity Adjustment	1.000	1.000	1.000	1.000
Approach Delay (sec/veh)	4.4	5.7	6.1	5.3
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
Right Turn Channelized				
Lane Utilization	1.000	1.000	1.000	1.000
Critical Headway (s)	5.193	5.193	5.193	5.193
Entry Flow Rate (pc/h)	38	110	283	231
Capacity, Entry Lane (pc/h)	897	837	1057	1100
Entry HV Adjustment Factor	0.997	0.981	0.982	0.980
Flow Rate, Entry (vph)	38	108	278	226
Capacity, Entry (vph)	895	821	1037	1078
Volume to Capacity Ratio	0.042	0.131	0.268	0.210
Control Delay (sec/veh)	4.4	5.7	6.1	5.3
Level of Service	A	A	A	A
95th-Percentile Queue (veh)	0	0	1	1

Intersection	
Intersection Delay (sec/veh)	8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Volume (vph)	0	0	0	6	103	5	95	20	0	0	10	25
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles(%)	2	2	2	2	2	2	2	2	2	2	2	2
Movement Flow Rate	0	0	0	7	112	5	103	22	0	0	11	27
Number of Lanes	0	0	0	0	1	0	0	1	0	0	1	0

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	8	8.2	7.1
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	SBLn1
Volume Left (%)	83%	5%	0%
Volume Thru (%)	17%	90%	29%
Volume Right (%)	0%	4%	71%
Sign Control	Stop	Stop	Stop
Traffic Volume by Lane	115	114	35
Left Turning Volume	20	103	10
Through Volume	0	5	25
Right Turning Volume	95	6	0
Lane Flow Rate	125	124	38
Geometry Group	1	1	1
Degree of Utilization, X	0.151	0.145	0.041
Departure Headway, Hd	4.347	4.199	3.925
Convergence(Y/N)	Yes	Yes	Yes
Capacity	816	841	918
Service Time	2.422	2.289	1.925
HCM Lane V/C Ratio	0.153	0.147	0.041
HCM Control Delay	8.2	8	7.1
HCM Lane LOS	A	A	A
HCM 95th Percentile Queue	0.5	0.5	0.1

Intersection	
Intersection Delay (sec/veh)	7.7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Volume (vph)	20	46	46	0	0	0	0	95	6	10	9	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles(%)	2	2	2	2	2	2	2	2	2	2	2	2
Movement Flow Rate	22	50	50	0	0	0	0	103	7	11	10	0
Number of Lanes	0	1	0	0	0	0	0	1	0	0	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.6	7.8	7.5
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1
Volume Left (%)	0%	18%	53%
Volume Thru (%)	94%	41%	47%
Volume Right (%)	6%	41%	0%
Sign Control	Stop	Stop	Stop
Traffic Volume by Lane	101	112	19
Left Turning Volume	95	46	9
Through Volume	6	46	0
Right Turning Volume	0	20	10
Lane Flow Rate	110	122	21
Geometry Group	1	1	1
Degree of Utilization, X	0.126	0.134	0.025
Departure Headway, Hd	4.127	3.948	4.339
Convergence(Y/N)	Yes	Yes	Yes
Capacity	862	898	816
Service Time	2.185	2.016	2.416
HCM Lane V/C Ratio	0.128	0.136	0.026
HCM Control Delay	7.8	7.6	7.5
HCM Lane LOS	A	A	A
HCM 95th Percentile Queue	0.4	0.5	0.1

Intersection	
Intersection Delay (sec/veh):	3.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Volume (vph)	5	20	14	5	17	5
Conflicting Peds.(#/hr)	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
Right Turn Channelized	None	None	None	None	None	None
Storage Length	0			0	0	0
Median Width		0	0		12	
Grade (%)		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles(%)	2	2	2	2	2	2
Movement Flow Rate	5	22	15	5	18	5
Number of Lanes	0	1	1	0	1	0

Major/Minor	Major 1		Major 2			
Conflicting Flow Rate - All	20	0	0	0	50	18
Stage 1	-	-	-	-	18	-
Stage 2	-	-	-	-	32	-
Follow-up Headway	2.218	-	-	-	3.518	3.318
Pot Capacity-1 Maneuver	1596	-	-	-	959	1061
Stage 1	-	-	-	-	1005	-
Stage 2	-	-	-	-	991	-
Time blocked-Platoon(%)	0	-	-	-	0	0
Mov Capacity-1 Maneuver	1596	-	-	-	956	1061
Mov Capacity-2 Maneuver	-	-	-	-	956	-
Stage 1	-	-	-	-	1005	-
Stage 2	-	-	-	-	988	-

Approach	EB	WB	SB
HCM Control Delay (s)	1.5	0	8.8
HCM LOS	A	A	A

Lane	EBL	EBT	WBT	WBR	SBLn1
Capacity (vph)					978
HCM Control Delay (s)	7.263	-	-	-	8.8
HCM Lane VC Ratio	0.003	-	-	-	0.024
HCM Lane LOS	A	-	-	-	A
HCM 95th Percentile Queue (veh)	0.01	-	-	-	0.075

Intersection	
Intersection Delay (sec/veh)	3.6
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adjusted Approach Flow (vph)	40	50	5	27
Demand Flow Rate (pc/h)	41	51	5	27
Vehicles Circulating (pc/h)	22	10	59	15
Vehicles Exiting (pc/h)	20	54	4	46
Follow-Up Headway (s)	3.186	3.186	3.186	3.186
Ped Vol. Crossing Leg (#/hr)	0	0	0	0
Ped Capacity Adjustment	1.000	1.000	1.000	1.000
Approach Delay (sec/veh)	3.6	3.7	3.5	3.4
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
Right Turn Channelized				
Lane Utilization	1.000	1.000	1.000	1.000
Critical Headway (s)	5.193	5.193	5.193	5.193
Entry Flow Rate (pc/h)	41	51	5	27
Capacity, Entry Lane (pc/h)	1105	1119	1065	1113
Entry HV Adjustment Factor	0.983	0.975	0.980	0.997
Flow Rate, Entry (vph)	40	50	5	27
Capacity, Entry (vph)	1086	1090	1044	1110
Volume to Capacity Ratio	0.037	0.046	0.005	0.024
Control Delay (sec/veh)	3.6	3.7	3.5	3.4
Level of Service	A	A	A	A
95th-Percentile Queue (veh)	0	0	0	0

HCM 2010 Signalized Intersection Summary
1: East Vista Way & Gopher Canyon Road

5/18/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	407	1	193	6	381	880	323	382	5
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	0	0	0	433	1	152	7	414	528	351	415	5
Adj No. of Lanes	0	1	0	0	1	1	1	1	1	1	1	0
Peak Hour Factor	0.25	0.25	0.25	0.94	0.94	0.94	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	2	0	460	1	412	70	631	536	378	970	12
Arrive On Green	0.00	0.00	0.00	0.26	0.26	0.26	0.04	0.34	0.34	0.21	0.53	0.53
Sat Flow, veh/h	0	1863	0	1770	4	1583	1774	1863	1583	1774	1837	22
Grp Volume(v), veh/h	0	0	0	434	0	152	7	414	528	351	0	420
Grp Sat Flow(s),veh/h/ln	0	1863	0	1774	0	1583	1774	1863	1583	1774	0	1859
Q Serve(g_s), s	0.0	0.0	0.0	24.4	0.0	8.0	0.4	19.3	33.7	19.8	0.0	14.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	24.4	0.0	8.0	0.4	19.3	33.7	19.8	0.0	14.0
Prop In Lane	0.00		0.00	1.00		1.00	1.00		1.00	1.00		0.01
Lane Grp Cap(c), veh/h	0	2	0	461	0	412	70	631	536	378	0	982
V/C Ratio(X)	0.00	0.00	0.00	0.94	0.00	0.37	0.10	0.66	0.98	0.93	0.00	0.43
Avail Cap(c_a), veh/h	0	73	0	463	0	413	70	631	536	378	0	982
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	36.9	0.0	30.9	47.2	28.7	33.4	39.3	0.0	14.7
Incr Delay (d2), s/veh	0.0	0.0	0.0	27.5	0.0	0.6	0.6	2.5	34.8	29.0	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	15.5	0.0	3.5	0.2	10.3	19.9	12.7	0.0	7.2
LnGrp Delay(d),s/veh	0.0	0.0	0.0	64.5	0.0	31.4	47.8	31.1	68.3	68.3	0.0	15.0
LnGrp LOS				E		C	D	C	E	E		B
Approach Vol, veh/h		0			586			949			771	
Approach Delay, s/veh		0.0			55.9			51.9			39.3	
Approach LOS					E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	27.3	42.5		0.0	8.0	61.8		32.1
Change Period (Y+Rc), s	5.6	8.0		4.0	4.0	* 8		5.6
Max Green Setting (Gmax), s	21.7	34.5		4.0	4.0	* 54		26.6
Max Q Clear Time (g_c+I1), s	21.8	35.7		0.0	2.4	16.0		26.4
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	8.0		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	48.7
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	3	70	73	187	64	348	95	990	207	375	698	15
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	3	80	78	130	155	297	100	1042	176	383	712	10
Adj No. of Lanes	0	2	0	1	1	1	1	3	1	2	3	0
Peak Hour Factor	0.87	0.87	0.87	0.97	0.97	0.97	0.95	0.95	0.95	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	9	232	205	380	399	339	195	1520	473	477	1693	24
Arrive On Green	0.13	0.13	0.13	0.21	0.21	0.21	0.11	0.30	0.30	0.14	0.33	0.33
Sat Flow, veh/h	67	1792	1583	1774	1863	1583	1774	5085	1583	3442	5168	72
Grp Volume(v), veh/h	83	0	78	130	155	297	100	1042	176	383	467	255
Grp Sat Flow(s),veh/h/ln	1859	0	1583	1774	1863	1583	1774	1695	1583	1721	1695	1850
Q Serve(g_s), s	3.7	0.0	4.1	5.7	6.5	16.5	4.8	16.4	8.0	9.8	9.8	9.8
Cycle Q Clear(g_c), s	3.7	0.0	4.1	5.7	6.5	16.5	4.8	16.4	8.0	9.8	9.8	9.8
Prop In Lane	0.04		1.00	1.00		1.00	1.00		1.00	1.00		0.04
Lane Grp Cap(c), veh/h	241	0	205	380	399	339	195	1520	473	477	1110	606
V/C Ratio(X)	0.34	0.00	0.38	0.34	0.39	0.88	0.51	0.69	0.37	0.80	0.42	0.42
Avail Cap(c_a), veh/h	327	0	279	445	467	397	312	1795	559	727	1316	718
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.0	0.0	36.2	30.3	30.6	34.6	38.2	28.1	25.1	38.0	23.8	23.9
Incr Delay (d2), s/veh	0.8	0.0	1.2	0.5	0.6	17.4	2.1	0.9	0.5	3.8	0.3	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	1.9	2.8	3.4	8.9	2.5	7.7	3.5	4.9	4.6	5.0
LnGrp Delay(d),s/veh	36.9	0.0	37.4	30.8	31.3	52.0	40.2	29.0	25.6	41.8	24.1	24.3
LnGrp LOS	D		D	C	C	D	D	C	C	D	C	C
Approach Vol, veh/h		161			582			1318			1105	
Approach Delay, s/veh		37.1			41.7			29.4			30.3	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	14.2	36.3		24.1	16.8	33.7		16.4
Change Period (Y+Rc), s	* 4.2	6.5		4.6	* 4.2	6.5		4.6
Max Green Setting (Gmax), s	* 16	35.3		22.8	* 19	32.1		16.0
Max Q Clear Time (g_c+I1), s	6.8	11.8		18.5	11.8	18.4		6.1
Green Ext Time (p_c), s	0.1	12.3		1.0	0.8	8.8		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	32.4
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	97	66	73	67	87	314	47	1087	74	196	823	43
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	101	69	71	83	107	314	49	1144	67	200	840	34
Adj No. of Lanes	2	1	1	1	1	1	1	3	1	2	3	1
Peak Hour Factor	0.96	0.96	0.96	0.81	0.81	0.81	0.95	0.95	0.95	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	418	401	341	216	409	348	133	1601	498	347	1589	495
Arrive On Green	0.12	0.22	0.22	0.12	0.22	0.22	0.07	0.31	0.31	0.10	0.31	0.31
Sat Flow, veh/h	3442	1863	1583	1774	1863	1583	1774	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	101	69	71	83	107	314	49	1144	67	200	840	34
Grp Sat Flow(s),veh/h/ln	1721	1863	1583	1774	1863	1583	1774	1695	1583	1721	1695	1583
Q Serve(g_s), s	2.6	3.0	3.6	4.3	4.7	19.1	2.6	19.6	3.0	5.5	13.4	1.5
Cycle Q Clear(g_c), s	2.6	3.0	3.6	4.3	4.7	19.1	2.6	19.6	3.0	5.5	13.4	1.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	418	401	341	216	409	348	133	1601	498	347	1589	495
V/C Ratio(X)	0.24	0.17	0.21	0.38	0.26	0.90	0.37	0.71	0.13	0.58	0.53	0.07
Avail Cap(c_a), veh/h	551	461	392	259	442	375	180	1804	562	412	1752	546
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.2	31.5	31.8	39.9	31.9	37.5	43.4	29.9	24.2	42.3	27.9	23.8
Incr Delay (d2), s/veh	0.3	0.2	0.3	1.1	0.3	23.4	1.7	1.2	0.1	1.5	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	1.6	1.6	2.1	2.4	10.5	1.3	9.4	1.3	2.7	6.3	0.7
LnGrp Delay(d),s/veh	39.5	31.7	32.1	41.1	32.2	60.9	45.1	31.1	24.3	43.9	28.2	23.9
LnGrp LOS	D	C	C	D	C	E	D	C	C	D	C	C
Approach Vol, veh/h		241			504			1260			1074	
Approach Delay, s/veh		35.1			51.6			31.3			31.0	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.2	39.1	17.6	26.9	15.4	38.8	17.2	27.3
Change Period (Y+Rc), s	* 5.2	8.0	5.6	* 5.6	8.0	* 8	* 5.2	5.6
Max Green Setting (Gmax), s	* 12	35.0	14.4	* 24	10.0	* 34	* 16	23.4
Max Q Clear Time (g_c+I1), s	7.5	21.6	6.3	5.6	4.6	15.4	4.6	21.1
Green Ext Time (p_c), s	0.2	9.4	0.1	2.2	0.0	12.0	0.2	0.6

Intersection Summary	
HCM 2010 Ctrl Delay	34.8
HCM 2010 LOS	C

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay (sec/veh):	3.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Volume (vph)	238	0	0	273	105	122
Conflicting Peds.(#/hr)	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
Right Turn Channelized	Free	Free	Free	Free	None	None
Storage Length		0	0		0	0
Median Width	12			12	12	
Grade (%)	0%			0%	0%	
Peak Hour Factor	0.88	0.88	0.95	0.95	0.93	0.93
Heavy Vehicles(%)	2	2	2	2	2	2
Movement Flow Rate	270	0	0	287	113	131
Number of Lanes	1	0	1	1	1	1

Major/Minor	Major 1			Major 2		
Conflicting Flow Rate - All	0	-	270	0	557	270
Stage 1	-	-	-	-	270	-
Stage 2	-	-	-	-	287	-
Follow-up Headway	-	0	2.218	-	3.518	3.318
Pot Capacity-1 Maneuver	-	0	1293	-	491	769
Stage 1	-	0	-	-	775	-
Stage 2	-	0	-	-	762	-
Time blocked-Platoon(%)	-	0	0	-	0	0
Mov Capacity-1 Maneuver	-	-	1293	-	491	769
Mov Capacity-2 Maneuver	-	-	-	-	491	-
Stage 1	-	-	-	-	775	-
Stage 2	-	-	-	-	762	-

Approach	EB	WB	NB
HCM Control Delay (s)	0	0	12.4
HCM LOS	A	A	B

Lane	NBLn1	NBLn2	EBT	WBL	WBT
Capacity (vph)	491	769			
HCM Control Delay (s)	14.5	10.6	-	0	-
HCM Lane VC Ratio	0.23	0.171	-	-	-
HCM Lane LOS	B	B	-	A	-
HCM 95th Percentile Queue (veh)	0.879	0.612	-	0	-

Intersection	
Intersection Delay (sec/veh):	3.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Volume (vph)	126	291	247	5	3	125
Conflicting Peds.(#/hr)	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
Right Turn Channelized	None	None	None	None	None	None
Storage Length	0			0	0	0
Median Width		0	0		12	
Grade (%)		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.83	0.83	0.83	0.83
Heavy Vehicles(%)	2	2	2	2	2	2
Movement Flow Rate	137	316	298	6	4	151
Number of Lanes	0	1	1	0	1	1

Major/Minor	Major 1		Major 2			
Conflicting Flow Rate - All	304	0	0	0	891	301
Stage 1	-	-	-	-	301	-
Stage 2	-	-	-	-	590	-
Follow-up Headway	2.218	-	-	-	3.518	3.318
Pot Capacity-1 Maneuver	1257	-	-	-	313	739
Stage 1	-	-	-	-	751	-
Stage 2	-	-	-	-	554	-
Time blocked-Platoon(%)	0	-	-	-	0	0
Mov Capacity-1 Maneuver	1257	-	-	-	272	739
Mov Capacity-2 Maneuver	-	-	-	-	272	-
Stage 1	-	-	-	-	751	-
Stage 2	-	-	-	-	481	-

Approach	EB	WB	SB
HCM Control Delay (s)	2.5	0	11.3
HCM LOS	A	A	B

Lane	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (vph)					272	739
HCM Control Delay (s)	8.214	-	-	-	18.4	11.1
HCM Lane VC Ratio	0.109	-	-	-	0.013	0.204
HCM Lane LOS	A	-	-	-	C	B
HCM 95th Percentile Queue (veh)	0.366	-	-	-	0.04	0.76

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	54	763	76	72	592	198	71	145	75	206	87	56
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	59	838	73	77	630	168	87	177	79	242	102	54
Adj No. of Lanes	1	2	1	1	2	1	0	1	1	0	1	0
Peak Hour Factor	0.91	0.91	0.91	0.94	0.94	0.94	0.82	0.82	0.82	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	151	960	430	182	1024	839	96	195	252	258	109	58
Arrive On Green	0.09	0.27	0.27	0.10	0.29	0.29	0.16	0.16	0.16	0.24	0.24	0.24
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	604	1229	1583	1074	453	240
Grp Volume(v), veh/h	59	838	73	77	630	168	264	0	79	398	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1833	0	1583	1767	0	0
Q Serve(g_s), s	3.4	24.2	3.8	4.4	16.5	6.0	15.1	0.0	4.7	23.6	0.0	0.0
Cycle Q Clear(g_c), s	3.4	24.2	3.8	4.4	16.5	6.0	15.1	0.0	4.7	23.6	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.33		1.00	0.61		0.14
Lane Grp Cap(c), veh/h	151	960	430	182	1024	839	291	0	252	425	0	0
V/C Ratio(X)	0.39	0.87	0.17	0.42	0.62	0.20	0.91	0.00	0.31	0.94	0.00	0.00
Avail Cap(c_a), veh/h	196	993	444	212	1026	840	291	0	252	430	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	46.3	37.2	29.8	45.0	32.9	13.2	44.2	0.0	39.8	39.8	0.0	0.0
Incr Delay (d2), s/veh	1.6	8.4	0.2	1.5	1.1	0.1	29.8	0.0	0.7	28.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	12.9	1.7	2.2	8.2	4.0	10.0	0.0	2.1	14.8	0.0	0.0
LnGrp Delay(d),s/veh	47.9	45.6	29.9	46.5	34.0	13.3	74.0	0.0	40.5	67.8	0.0	0.0
LnGrp LOS	D	D	C	D	C	B	E		D	E		
Approach Vol, veh/h		970			875			343			398	
Approach Delay, s/veh		44.6			31.1			66.3			67.8	
Approach LOS		D			C			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	14.3	37.9		23.0	16.2	36.0		31.7
Change Period (Y+Rc), s	* 5.2	7.0		6.0	* 5.2	7.0		6.0
Max Green Setting (Gmax), s	* 12	31.0		17.0	* 13	30.0		26.0
Max Q Clear Time (g_c+I1), s	5.4	18.5		17.1	6.4	26.2		25.6
Green Ext Time (p_c), s	0.0	7.4		0.0	0.1	2.8		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	46.5
HCM 2010 LOS	D

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Intersection Delay (sec/veh):	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Volume (vph)	0	356	27	23	445	7	14	1	15	0	0	0
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
Right Turn Channelized	None	None	None	None	None	None	None	None	None	None	None	None
Storage Length	550		0	530		0	0		0	0		0
Median Width		12			12			0			0	
Grade (%)		0%			0%			0%			0%	
Peak Hour Factor	0.70	0.70	0.70	0.60	0.60	0.60	0.60	0.60	0.60	0.92	0.92	0.92
Heavy Vehicles(%)	2	2	2	2	2	2	2	2	2	2	2	2
Movement Flow Rate	0	509	39	38	742	12	23	2	25	0	0	0
Number of Lanes	1	2	0	1	2	0	0	1	0	0	1	0

Major/Minor	Major 1			Major 2			Minor 1			Minor 2		
Conflicting Flow Rate - All	754	0	0	548	0	0	976	1359	275	1080	1372	377
Stage 1	-	-	-	-	-	-	529	529	-	824	824	-
Stage 2	-	-	-	-	-	-	447	830	-	256	548	-
Follow-up Headway	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Capacity-1 Maneuver	852	-	-	1018	-	-	206	148	722	172	145	621
Stage 1	-	-	-	-	-	-	501	526	-	333	385	-
Stage 2	-	-	-	-	-	-	560	383	-	726	515	-
Time blocked-Platoon(%)	0	-	-	0	-	-	0	0	0	0	0	0
Mov Capacity-1 Maneuver	852	-	-	1018	-	-	200	142	722	160	140	621
Mov Capacity-2 Maneuver	-	-	-	-	-	-	200	142	-	160	140	-
Stage 1	-	-	-	-	-	-	501	526	-	333	371	-
Stage 2	-	-	-	-	-	-	539	369	-	699	515	-

Approach	EB	WB	NB	SB
HCM Control Delay (s)	0	0.5	19	0
HCM LOS	A	A	C	A

Lane	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (vph)	307							0
HCM Control Delay (s)	19	0	-	-	8.675	0.1	-	0
HCM Lane VC Ratio	0.163	-	-	-	0.038	-	-	-
HCM Lane LOS	C	A	-	-	A	A	-	A
HCM 95th Percentile Queue (veh)	0.573	0	-	-	0.117	-	-	-

Intersection	
Intersection Delay (sec/veh):	6.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Volume (vph)	129	71	214	178	87	168
Conflicting Peds.(#/hr)	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
Right Turn Channelized	None	None	None	None	None	None
Storage Length	400	0		0	0	
Median Width	12		0			0
Grade (%)	0%		0%			0%
Peak Hour Factor	0.78	0.78	0.88	0.88	0.80	0.80
Heavy Vehicles(%)	2	2	2	2	2	2
Movement Flow Rate	165	91	243	202	109	210
Number of Lanes	1	1	1	0	0	1

Major/Minor			Major 1			Major 2
Conflicting Flow Rate - All	772	344	0	0	445	0
Stage 1	344	-	-	-	-	-
Stage 2	428	-	-	-	-	-
Follow-up Headway	3.518	3.318	-	-	2.218	-
Pot Capacity-1 Maneuver	368	699	-	-	1115	-
Stage 1	718	-	-	-	-	-
Stage 2	657	-	-	-	-	-
Time blocked-Platoon(%)	0	0	-	-	0	-
Mov Capacity-1 Maneuver	327	699	-	-	1115	-
Mov Capacity-2 Maneuver	327	-	-	-	-	-
Stage 1	718	-	-	-	-	-
Stage 2	584	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay (s)	21.2	0	2.9
HCM LOS	C	A	A

Lane	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (vph)			327	699		
HCM Control Delay (s)	-	-	26.8	10.9	8.577	-
HCM Lane VC Ratio	-	-	0.506	0.13	0.098	-
HCM Lane LOS	-	-	D	B	A	-
HCM 95th Percentile Queue (veh)	-	-	2.707	0.447	0.323	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	49	59	37	218	38	125	72	213	368	186	71	22
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Queue, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking, Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow Rate	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Lanes	0	1	0	1	1	0	1	1	0	1	2	0
Capacity, veh/h	179	201	76	370	147	368	98	258	349	253	1393	230
Arriving On Green	0.31	0.31	0.31	0.31	0.31	0.31	0.06	0.36	0.36	0.14	0.45	0.45
Sat Flow, veh/h	442.9	503.4	244.1	1209.2	472.6	1181.6	1774.0	719.0	972.2	1774.0	3119.9	514.8
Grp Volume(v), veh/h	170.9	0.0	0.0	237.0	0.0	144.6	76.6	0.0	533.0	209.0	46.8	46.4
Grp Sat Flow(s),veh/h/ln	1220.3	0.0	0.0	1209.2	0.0	1654.2	1774.0	0.0	1691.2	1774.0	1862.7	1771.9
Q Serve(g_s), s	2.1	0.0	0.0	12.3	0.0	4.2	2.7	0.0	18.9	7.4	0.9	1.0
Cycle Q Clear(g_c), s	6.3	0.0	0.0	18.6	0.0	4.2	2.7	0.0	18.9	7.4	0.9	1.0
Proportion In Lane	0.363		0.200	1.000		0.714	1.000		0.575	1.000		0.291
Lane Grp Cap(c), veh/h	456.5	0.0	0.0	370.0	0.0	515.2	98.0	0.0	607.1	253.2	831.6	791.0
V/C Ratio(X)	0.374	0.000	0.000	0.640	0.000	0.281	0.781	0.000	0.878	0.826	0.056	0.059
Avail Cap(c_a), veh/h	456.5	0.0	0.0	370.0	0.0	515.2	193.4	0.0	737.4	276.3	899.2	855.4
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.000	0.000	0.000	1.000	0.000	1.000	1.000	0.000	1.000	1.000	1.000	1.000
Uniform Delay (d), s/veh	16.8	0.0	0.0	24.7	0.0	16.7	30.0	0.0	19.3	26.7	10.1	10.1
Incr Delay (d2), s/veh	0.5	0.0	0.0	3.7	0.0	0.3	12.6	0.0	10.2	17.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane Group Delay (d), s/veh	17.3	0.0	0.0	28.4	0.0	17.0	42.5	0.0	29.4	43.8	10.1	10.1
Lane Group LOS	B			C		B	D		C	D	B	B
Approach Volume, veh/h		171			382			610			302	
Approach Delay, s/veh		17.3			24.1			31.1			33.4	
Approach LOS		B			C			C			C	

Timer								
Assigned Phase		4			8		5	2		1	6	
Phase Duration (G+Y+Rc), s		24.00			24.00		7.55	27.05		13.16	32.67	
Change Period (Y+Rc), s		4.00			4.00		4.00	4.00		4.00	4.00	
Max Green Setting (Gmax), s		20.00			20.00		7.00	28.00		10.00	31.00	
Max Q Clear Time (g_c+I1), s		8.31			20.62		4.74	20.94		9.35	2.96	
Green Extension Time (p_c)		2.18			0.00		0.03	2.11		0.04	3.92	

Intersection Summary	
HCM 2010 Control Delay	28.1
HCM 2010 Level of Service	C

Intersection	
Intersection Delay (sec/veh):	2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Volume (vph)	0	120	230	4	555	0	0	0	0	86	0	99
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
Right Turn Channelized	None	None	None	None	None	None	None	None	None	Yield	Yield	Yield
Storage Length	0		300	0		0	0		0	0		50
Median Width		12			12			0			0	
Grade (%)		0%			0%			0%			0%	
Peak Hour Factor	0.84	0.84	0.84	0.93	0.93	0.93	0.92	0.92	0.92	0.81	0.81	0.81
Heavy Vehicles(%)	2	2	2	2	2	2	2	2	2	2	2	2
Movement Flow Rate	0	143	274	4	597	0	0	0	0	106	0	122
Number of Lanes	0	1	1	1	1	0	0	0	0	0	1	0

Major/Minor	Major 1			Major 2			Minor 2		
Conflicting Flow Rate - All	-	0	0	417	0	-	885	1022	299
Stage 1	-	-	-	-	-	-	605	605	-
Stage 2	-	-	-	-	-	-	280	417	-
Follow-up Headway	0	-	-	2.218	-	0	3.518	4.018	3.318
Pot Capacity-1 Maneuver	0	-	-	1142	-	0	266	236	741
Stage 1	0	-	-	-	-	0	485	487	-
Stage 2	0	-	-	-	-	0	727	591	-
Time blocked-Platoon(%)	0	-	-	0	-	0	0	0	0
Mov Capacity-1 Maneuver	-	-	-	1142	-	-	265	235	741
Mov Capacity-2 Maneuver	-	-	-	-	-	-	265	235	-
Stage 1	-	-	-	-	-	-	-	485	-
Stage 2	-	-	-	-	-	-	727	591	-

Approach	EB	WB	SB
HCM Control Delay (s)	0	0.1	15.5
HCM LOS	A	A	C

Lane	EBT	EBR	WBL	WBT	SBLn1
Capacity (vph)					570
HCM Control Delay (s)	-	-	8.164	-	15.5
HCM Lane VC Ratio	-	-	0.004	-	0.401
HCM Lane LOS	-	-	A	-	C
HCM 95th Percentile Queue (veh)	-	-	0.011	-	1.919

Intersection	
Intersection Delay (sec/veh):	9.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Volume (vph)	134	0	0	268	354	17
Conflicting Peds.(#/hr)	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
Right Turn Channelized	None	None	None	None	Free	Free
Storage Length		0	0		0	250
Median Width	0			0	12	
Grade (%)	0%			0%	0%	
Peak Hour Factor	0.82	0.82	0.79	0.79	0.85	0.85
Heavy Vehicles(%)	2	2	2	2	2	2
Movement Flow Rate	163	0	0	339	416	20
Number of Lanes	1	0	0	2	1	1

Major/Minor	Major 1			Major 2		
Conflicting Flow Rate - All	0	-	-	0	333	163
Stage 1	-	-	-	-	163	-
Stage 2	-	-	-	-	170	-
Follow-up Headway	-	0	0	-	3.52	3.32
Pot Capacity-1 Maneuver	-	0	0	-	636	853
Stage 1	-	0	0	-	849	-
Stage 2	-	0	0	-	843	-
Time blocked-Platoon(%)	-	0	0	-	0	0
Mov Capacity-1 Maneuver	-	-	-	-	636	853
Mov Capacity-2 Maneuver	-	-	-	-	636	-
Stage 1	-	-	-	-	849	-
Stage 2	-	-	-	-	843	-

Approach	EB	WB	NB
HCM Control Delay (s)	0	0	20.2
HCM LOS	A	A	C

Lane	NBLn1	NBLn2	EBT	WBT
Capacity (vph)	636	853		
HCM Control Delay (s)	20.7	9.3	-	-
HCM Lane VC Ratio	0.655	0.023	-	-
HCM Lane LOS	C	A	-	-
HCM 95th Percentile Queue (veh)	4.838	0.072	-	-

Intersection	
Intersection Delay (sec/veh):	5.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Volume (vph)	28	160	184	234	157	17
Conflicting Peds.(#/hr)	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
Right Turn Channelized	None	None	None	None	None	None
Storage Length	0	0	160			90
Median Width	12			12	12	
Grade (%)	0%			0%	0%	
Peak Hour Factor	0.83	0.83	0.93	0.93	0.96	0.96
Heavy Vehicles(%)	2	2	2	2	2	2
Movement Flow Rate	34	193	198	252	164	18
Number of Lanes	1	0	1	1	1	1

Major/Minor				Major 1	Major 2	
Conflicting Flow Rate - All	821	91	182	0	0	0
Stage 1	173	-	-	-	-	-
Stage 2	648	-	-	-	-	-
Follow-up Headway	3.518	3.318	2.218	-	-	-
Pot Capacity-1 Maneuver	344	967	1393	-	-	-
Stage 1	857	-	-	-	-	-
Stage 2	521	-	-	-	-	-
Time blocked-Platoon(%)	0	0	0	-	-	-
Mov Capacity-1 Maneuver	295	967	1393	-	-	-
Mov Capacity-2 Maneuver	295	-	-	-	-	-
Stage 1	857	-	-	-	-	-
Stage 2	447	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay (s)	12.2	3.5	0
HCM LOS	B	A	A

Lane	NBL	NBT	EBLn1	SBT	SBR
Capacity (vph)			722		
HCM Control Delay (s)	8.012	-	12.2	-	-
HCM Lane VC Ratio	0.142	-	0.314	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th Percentile Queue (veh)	0.495	-	1.342	-	-

Intersection	
Intersection Delay (sec/veh):	14.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Volume (vph)	157	59	429	264	71	196
Conflicting Peds.(#/hr)	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
Right Turn Channelized	None	None	None	None	None	None
Storage Length	0	0		100	170	
Median Width	12		12			12
Grade (%)	0%		0%			0%
Peak Hour Factor	0.82	0.82	0.89	0.89	0.90	0.90
Heavy Vehicles(%)	2	2	2	2	2	2
Movement Flow Rate	191	72	482	297	79	218
Number of Lanes	1	0	1	1	1	1

Major/Minor			Major 1			Major 2
Conflicting Flow Rate - All	1007	390	0	0	779	0
Stage 1	631	-	-	-	-	-
Stage 2	376	-	-	-	-	-
Follow-up Headway	3.518	3.318	-	-	2.218	-
Pot Capacity-1 Maneuver	267	658	-	-	838	-
Stage 1	530	-	-	-	-	-
Stage 2	694	-	-	-	-	-
Time blocked-Platoon(%)	0	0	-	-	0	-
Mov Capacity-1 Maneuver	242	658	-	-	838	-
Mov Capacity-2 Maneuver	242	-	-	-	-	-
Stage 1	530	-	-	-	-	-
Stage 2	629	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay (s)	68.6	0	2.6
HCM LOS	F	A	A

Lane	NBT	NBR	WBLn1	SBL	SBT
Capacity (vph)			293		
HCM Control Delay (s)	-	-	68.6	9.742	-
HCM Lane VC Ratio	-	-	0.899	0.094	-
HCM Lane LOS	-	-	F	A	-
HCM 95th Percentile Queue (veh)	-	-	8.26	0.311	-

Intersection	
Intersection Delay (sec/veh):	42.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Volume (vph)	0	792	323	218	345	0	0	0	0	42	2	179
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
Right Turn Channelized	Free	Free	Free	None	None	None	None	None	None	Yield	Yield	Yield
Storage Length	0		0	200		0	0		0	0		25
Median Width		12			12			0			0	
Grade (%)		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.93	0.93	0.93	0.93	0.93	0.92	0.92	0.92	0.97	0.97	0.97
Heavy Vehicles(%)	2	2	2	2	2	2	2	2	2	2	2	2
Movement Flow Rate	0	852	347	234	371	0	0	0	0	43	2	185
Number of Lanes	0	1	0	1	2	0	0	0	0	0	1	0

Major/Minor	Major 1			Major 2			Minor 2		
Conflicting Flow Rate - All	371	0	0	1199	0	-	1865	2038	186
Stage 1	-	-	-	-	-	-	839	839	-
Stage 2	-	-	-	-	-	-	1026	1199	-
Follow-up Headway	2.22	-	-	2.22	-	0	3.52	4.02	3.32
Pot Capacity-1 Maneuver	1184	-	-	578	-	0	45	56	824
Stage 1	-	-	-	-	-	0	326	379	-
Stage 2	-	-	-	-	-	0	251	257	-
Time blocked-Platoon(%)	0	-	-	0	-	0	0	0	0
Mov Capacity-1 Maneuver	1184	-	-	578	-	-	# 31	33	824
Mov Capacity-2 Maneuver	-	-	-	-	-	-	# 31	33	-
Stage 1	-	-	-	-	-	-	326	226	-
Stage 2	-	-	-	-	-	-	251	257	-

Approach	EB	WB	SB
HCM Control Delay (s)	0	6	$ 359
HCM LOS	A	A	F

Lane	EBL	EBT	EBR	WBL	WBT	SBLn1
Capacity (vph)						143
HCM Control Delay (s)	0	-	-	15.412	-	$ -1
HCM Lane VC Ratio	-	-	-	0.406	-	1.608
HCM Lane LOS	A	-	-	C	-	F
HCM 95th Percentile Queue (veh)	0	-	-	1.957	-	16.188

Intersection	
Intersection Delay (sec/veh):	$ 759.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Volume (vph)	567	268	0	0	373	72	190	1	442	0	0	0
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
Right Turn Channelized	None	None	None	Free	Free	Free	Yield	Yield	Yield	None	None	None
Storage Length	220		0	0		0	0		25	0		0
Median Width		12			12			0			0	
Grade (%)		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.95	0.95	0.95	0.92	0.92	0.92
Heavy Vehicles(%)	2	2	2	2	2	2	2	2	2	2	2	2
Movement Flow Rate	585	276	0	0	385	74	200	1	465	0	0	0
Number of Lanes	1	2	0	0	2	0	0	1	0	0	0	0

Major/Minor	Major 1			Major 2			Minor 1		
Conflicting Flow Rate - All	459	0	-	276	0	0	1639	1905	138
Stage 1	-	-	-	-	-	-	1446	1446	-
Stage 2	-	-	-	-	-	-	193	459	-
Follow-up Headway	2.22	-	0	2.22	-	-	3.52	4.02	3.32
Pot Capacity-1 Maneuver	1098	-	0	1284	-	-	# 66	68	885
Stage 1	-	-	0	-	-	-	# 138	195	-
Stage 2	-	-	0	-	-	-	790	565	-
Time blocked-Platoon(%)	0	-	0	0	-	-	0	0	0
Mov Capacity-1 Maneuver	1098	-	-	1284	-	-	# 38	32	885
Mov Capacity-2 Maneuver	-	-	-	-	-	-	# 38	32	-
Stage 1	-	-	-	-	-	-	# 64	91	-
Stage 2	-	-	-	-	-	-	790	565	-

Approach	EB	WB	NB
HCM Control Delay (s)	8.1	0	$ 2254.2
HCM LOS	A	A	F

Lane	NBLn1	EBL	EBT	WBL	WBT	WBR
Capacity (vph)	114					
HCM Control Delay (s)	$ 2254.2	11.947	-	0	-	-
HCM Lane VC Ratio	5.845	0.532	-	-	-	-
HCM Lane LOS	F	B	-	A	-	-
HCM 95th Percentile Queue (veh)	72.487	3.251	-	0	-	-

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	446	264	217	213	107	230
Number	7	14	1	6	2	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	465	207	244	239	123	189
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.96	0.96	0.89	0.89	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	559	812	309	887	369	313
Arrive On Green	0.32	0.32	0.17	0.48	0.20	0.20
Sat Flow, veh/h	1774	1583	1774	1863	1863	1583
Grp Volume(v), veh/h	465	207	244	239	123	189
Grp Sat Flow(s),veh/h/ln	1774	1583	1774	1863	1863	1583
Q Serve(g_s), s	10.5	3.2	5.7	3.3	2.4	4.7
Cycle Q Clear(g_c), s	10.5	3.2	5.7	3.3	2.4	4.7
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	559	812	309	887	369	313
V/C Ratio(X)	0.83	0.25	0.79	0.27	0.33	0.60
Avail Cap(c_a), veh/h	712	949	481	1456	756	643
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.7	5.9	17.1	6.8	14.9	15.8
Incr Delay (d2), s/veh	6.7	0.2	4.8	0.2	0.5	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	1.9	3.2	1.7	1.3	2.2
LnGrp Delay(d),s/veh	20.4	6.0	21.8	6.9	15.4	17.6
LnGrp LOS	C	A	C	A	B	B
Approach Vol, veh/h	672			483	312	
Approach Delay, s/veh	16.0			14.5	16.7	
Approach LOS	B			B	B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	12.0	13.0		18.1		25.0		
Change Period (Y+Rc), s	4.5	4.5		4.5		4.5		
Max Green Setting (Gmax), s	11.7	17.5		17.3		33.7		
Max Q Clear Time (g_c+I1), s	7.7	6.7		12.5		5.3		
Green Ext Time (p_c), s	0.2	1.8		1.1		2.5		

Intersection Summary	
HCM 2010 Ctrl Delay	15.6
HCM 2010 LOS	B

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	41	224	206	92	270	101
Number	3	18	2	12	1	6
Initial Queue, veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking, Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow Rate	1863	1863	1863	1863	1863	1863
Lanes	1	1	1	0	1	1
Capacity, veh/h	146	463	607	215	374	1405
Arriving On Green	0.08	0.08	0.46	0.46	0.21	0.75
Sat Flow, veh/h	1774.0	1583.3	1314.7	465.9	1774.0	1862.7
Grp Volume(v), veh/h	41.8	106.1	0.0	328.2	310.3	116.1
Grp Sat Flow(s),veh/h/ln	1774.0	1583.3	0.0	1780.5	1774.0	1862.7
Q Serve(g_s), s	1.2	2.8	0.0	6.7	9.2	0.9
Cycle Q Clear(g_c), s	1.2	2.8	0.0	6.7	9.2	0.9
Proportion In Lane	1.000	1.000		0.262	1.000	
Lane Grp Cap(c), veh/h	145.7	463.5	0.0	822.4	373.6	1405.0
V/C Ratio(X)	0.287	0.229	0.000	0.399	0.831	0.083
Avail Cap(c_a), veh/h	467.5	750.7	0.0	822.4	564.3	1405.0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.000	1.000	0.000	1.000	1.000	1.000
Uniform Delay (d), s/veh	23.7	14.7	0.0	9.8	20.8	1.8
Incr Delay (d2), s/veh	1.1	0.2	0.0	1.4	6.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
Lane Group Delay (d), s/veh	24.8	15.0	0.0	11.2	27.2	1.9
Lane Group LOS	C	B		B	C	A
Approach Volume, veh/h	148		328			426
Approach Delay, s/veh	17.8		11.2			20.3
Approach LOS	B		B			C

Timer					
Assigned Phase			2	1	6
Phase Duration (G+Y+Rc), s			29.91	16.09	46.00
Change Period (Y+Rc), s			4.50	4.50	4.50
Max Green Setting (Gmax), s			19.50	17.50	41.50
Max Q Clear Time (g_c+I1), s			8.69	11.21	2.90
Green Extension Time (p_c)			1.72	0.48	2.48

Intersection Summary	
HCM 2010 Control Delay	16.6
HCM 2010 Level of Service	B

Intersection	
Intersection Delay (sec/veh):	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Volume (vph)	11	2	11	0	2	1	10	74	1	1	44	17
Conflicting Peds.(#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
Right Turn Channelized	None	None	None	None	None	None	None	None	None	None	None	None
Storage Length	0		0	0		0	0		0	0		0
Median Width		0			0			0			0	
Grade (%)		0%			0%			0%			0%	
Peak Hour Factor	0.46	0.46	0.46	0.75	0.75	0.75	0.75	0.75	0.75	0.79	0.79	0.79
Heavy Vehicles(%)	2	2	2	2	2	2	2	2	2	2	2	2
Movement Flow Rate	24	4	24	0	3	1	13	99	1	1	56	22
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Major/Minor	Minor 2			Minor 1			Major 1			Major 2		
Conflicting Flow Rate - All	197	195	67	209	206	100	78	0	0	100	0	0
Stage 1	69	69	-	126	126	-	-	-	-	-	-	-
Stage 2	128	126	-	83	80	-	-	-	-	-	-	-
Follow-up Headway	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Capacity-1 Maneuver	762	700	997	748	691	956	1520	-	-	1493	-	-
Stage 1	941	837	-	878	792	-	-	-	-	-	-	-
Stage 2	876	792	-	925	828	-	-	-	-	-	-	-
Time blocked-Platoon(%)	0	0	0	0	0	0	0	-	-	0	-	-
Mov Capacity-1 Maneuver	753	693	997	721	684	956	1520	-	-	1493	-	-
Mov Capacity-2 Maneuver	753	693	-	721	684	-	-	-	-	-	-	-
Stage 1	933	836	-	870	785	-	-	-	-	-	-	-
Stage 2	864	785	-	897	827	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay (s)	9.6	9.8	0.9	0.1
HCM LOS	A	A	A	A

Lane	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (vph)				841	756			
HCM Control Delay (s)	7.389	0	-	9.6	9.8	7.413	0	-
HCM Lane VC Ratio	0.009	-	-	0.062	0.005	0.001	-	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th Percentile Queue (veh)	0.027	-	-	0.198	0.016	0.003	-	-

Intersection	
Intersection Delay (sec/veh):	5.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Volume (vph)	100	86	1	0	50	10	1	0	0	8	0	77
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
Right Turn Channelized	None	None	None	None	None	None	None	None	None	None	None	None
Storage Length	0		0	0		0	0		0	0		0
Median Width		0			0			0			0	
Grade (%)		0%			0%			0%			0%	
Peak Hour Factor	0.91	0.91	0.91	0.72	0.72	0.72	0.25	0.25	0.25	0.63	0.63	0.63
Heavy Vehicles(%)	2	2	2	2	2	2	2	2	2	2	2	2
Movement Flow Rate	110	95	1	0	69	14	4	0	0	13	0	122
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Major/Minor	Major 1			Major 2			Minor 1			Minor 2		
Conflicting Flow Rate - All	83	0	0	96	0	0	453	399	96	392	392	76
Stage 1	-	-	-	-	-	-	316	316	-	76	76	-
Stage 2	-	-	-	-	-	-	137	83	-	316	316	-
Follow-up Headway	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Capacity-1 Maneuver	1514	-	-	1498	-	-	517	539	960	567	544	985
Stage 1	-	-	-	-	-	-	695	655	-	933	832	-
Stage 2	-	-	-	-	-	-	866	826	-	695	655	-
Time blocked-Platoon(%)	0	-	-	0	-	-	0	0	0	0	0	0
Mov Capacity-1 Maneuver	1514	-	-	1498	-	-	426	497	960	534	502	985
Mov Capacity-2 Maneuver	-	-	-	-	-	-	426	497	-	534	502	-
Stage 1	-	-	-	-	-	-	641	605	-	861	832	-
Stage 2	-	-	-	-	-	-	759	826	-	641	605	-

Approach	EB	WB	NB	SB
HCM Control Delay (s)	4	0	13.5	9.6
HCM LOS	A	A	B	A

Lane	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (vph)	426							912
HCM Control Delay (s)	13.5	7.564	0	-	0	-	-	9.6
HCM Lane VC Ratio	0.009	0.073	-	-	-	-	-	0.148
HCM Lane LOS	B	A	A	-	A	-	-	A
HCM 95th Percentile Queue (veh)	0.028	0.234	-	-	0	-	-	0.518

Intersection	
Intersection Delay (sec/veh):	6.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Volume (vph)	34	70	32	56	46	27
Conflicting Peds.(#/hr)	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
Right Turn Channelized	None	None	None	None	None	None
Storage Length	0	0		0	0	
Median Width	12		0			0
Grade (%)	0%		0%			0%
Peak Hour Factor	0.50	0.50	0.75	0.75	0.80	0.80
Heavy Vehicles(%)	2	2	2	2	2	2
Movement Flow Rate	68	140	43	75	57	34
Number of Lanes	1	0	1	0	0	1

Major/Minor			Major 1			Major 2
Conflicting Flow Rate - All	231	81	0	0	118	0
Stage 1	81	-	-	-	-	-
Stage 2	150	-	-	-	-	-
Follow-up Headway	3.518	3.318	-	-	2.218	-
Pot Capacity-1 Maneuver	757	979	-	-	1470	-
Stage 1	942	-	-	-	-	-
Stage 2	878	-	-	-	-	-
Time blocked-Platoon(%)	0	0	-	-	0	-
Mov Capacity-1 Maneuver	727	979	-	-	1470	-
Mov Capacity-2 Maneuver	727	-	-	-	-	-
Stage 1	942	-	-	-	-	-
Stage 2	843	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay (s)	10.4	0	4.8
HCM LOS	B	A	A

Lane	NBT	NBR	WBLn1	SBL	SBT
Capacity (vph)			879		
HCM Control Delay (s)	-	-	10.4	7.549	-
HCM Lane VC Ratio	-	-	0.237	0.039	-
HCM Lane LOS	-	-	B	A	-
HCM 95th Percentile Queue (veh)	-	-	0.92	0.122	-

Intersection	
Intersection Delay (sec/veh):	4.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Volume (vph)	38	60	72	85	75	33
Conflicting Peds.(#/hr)	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
Right Turn Channelized	None	None	None	None	None	None
Storage Length	0	0	0			0
Median Width	12			0	0	
Grade (%)	0%			0%	0%	
Peak Hour Factor	0.78	0.78	0.75	0.75	0.86	0.86
Heavy Vehicles(%)	2	2	2	2	2	2
Movement Flow Rate	49	77	96	113	87	38
Number of Lanes	1	0	0	1	1	0

Major/Minor				Major 1	Major 2	
Conflicting Flow Rate - All	411	106	125	0	0	0
Stage 1	106	-	-	-	-	-
Stage 2	305	-	-	-	-	-
Follow-up Headway	3.518	3.318	2.218	-	-	-
Pot Capacity-1 Maneuver	597	948	1462	-	-	-
Stage 1	918	-	-	-	-	-
Stage 2	748	-	-	-	-	-
Time blocked-Platoon(%)	0	0	0	-	-	-
Mov Capacity-1 Maneuver	555	948	1462	-	-	-
Mov Capacity-2 Maneuver	555	-	-	-	-	-
Stage 1	918	-	-	-	-	-
Stage 2	696	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay (s)	10.8	3.5	0
HCM LOS	B	A	A

Lane	NBL	NBT	EBLn1	SBT	SBR
Capacity (vph)			744		
HCM Control Delay (s)	7.635	-	10.8	-	-
HCM Lane VC Ratio	0.066	-	0.169	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th Percentile Queue (veh)	0.211	-	0.605	-	-

Intersection	
Intersection Delay (sec/veh):	5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Volume (vph)	47	273	204	159	134	34
Conflicting Peds.(#/hr)	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
Right Turn Channelized	None	None	None	None	None	None
Storage Length	170			80	0	0
Median Width		12	12		12	
Grade (%)		0%	0%		0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.82	0.82
Heavy Vehicles(%)	2	2	2	2	2	2
Movement Flow Rate	53	307	229	179	163	41
Number of Lanes	1	1	1	1	1	0

Major/Minor	Major 1		Major 2			
Conflicting Flow Rate - All	408	0	0	0	732	205
Stage 1	-	-	-	-	319	-
Stage 2	-	-	-	-	413	-
Follow-up Headway	2.218	-	-	-	3.518	3.318
Pot Capacity-1 Maneuver	1151	-	-	-	388	836
Stage 1	-	-	-	-	737	-
Stage 2	-	-	-	-	668	-
Time blocked-Platoon(%)	0	-	-	-	0	0
Mov Capacity-1 Maneuver	1151	-	-	-	370	836
Mov Capacity-2 Maneuver	-	-	-	-	370	-
Stage 1	-	-	-	-	737	-
Stage 2	-	-	-	-	637	-

Approach	EB	WB	SB
HCM Control Delay (s)	1.2	0	21.7
HCM LOS	A	A	C

Lane	EBL	EBT	WBT	WBR	SBLn1
Capacity (vph)					417
HCM Control Delay (s)	8.278	-	-	-	21.7
HCM Lane VC Ratio	0.046	-	-	-	0.491
HCM Lane LOS	A	-	-	-	C
HCM 95th Percentile Queue (veh)	0.144	-	-	-	2.636

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	274	1	192	0	1	0	251	754	2	0	633	315
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Queue, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking, Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow Rate	1863	1863	1863	0	1863	0	1863	1863	1863	0	1863	1863
Lanes	1	1	1	0	1	0	2	2	0	1	2	0
Capacity, veh/h	264	349	297	0	8	0	393	2218	6	0	1051	413
Arriving On Green	0.19	0.19	0.19	0.00	0.00	0.00	0.11	0.60	0.60	0.00	0.41	0.41
Sat Flow, veh/h	1406.7	1862.7	1583.3	0.0	1862.7	0.0	3441.6	3713.9	9.9	0.0	2546.9	1001.8
Grp Volume(v), veh/h	304.4	1.1	146.7	0.0	4.0	0.0	291.9	439.7	439.3	0.0	497.8	450.6
Grp Sat Flow(s),veh/h/ln	1406.7	1862.7	1583.3	0.0	1862.7	0.0	1720.8	1862.7	1861.0	0.0	1862.7	1686.0
Q Serve(g_s), s	12.0	0.0	5.3	0.0	0.1	0.0	5.3	8.0	8.0	0.1	13.7	13.7
Cycle Q Clear(g_c), s	12.0	0.0	5.3	0.0	0.1	0.0	5.3	8.0	8.0	0.1	13.7	13.7
Proportion In Lane	1.000		1.000	0.000		0.000	1.000		0.005	1.000		0.594
Lane Grp Cap(c), veh/h	263.8	349.4	297.0	0.0	8.0	0.0	392.9	1112.3	1111.3	0.0	768.7	695.7
V/C Ratio(X)	1.154	0.003	0.494	0.000	0.501	0.000	0.743	0.395	0.395	0.000	0.648	0.648
Avail Cap(c_a), veh/h	263.8	349.4	297.0	0.0	451.3	0.0	435.7	1112.3	1111.3	0.0	768.7	695.7
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.000	1.000	1.000	0.000	1.000	0.000	1.000	1.000	1.000	0.000	1.000	1.000
Uniform Delay (d), s/veh	26.0	21.1	23.3	0.0	31.8	0.0	27.4	6.8	6.8	0.0	15.1	15.1
Incr Delay (d2), s/veh	103.5	0.0	1.3	0.0	41.2	0.0	6.1	1.1	1.1	0.0	4.2	4.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane Group Delay (d), s/veh	129.5	21.1	24.5	0.0	73.0	0.0	33.5	7.9	7.9	0.0	19.3	19.7
Lane Group LOS	F	C	C		E		C	A	A		B	B
Approach Volume, veh/h		452			4			1171			948	
Approach Delay, s/veh		95.2			73.0			14.2			19.5	
Approach LOS		F			E			B			B	

Timer												
Assigned Phase		4			8		5	2		1	6	
Phase Duration (G+Y+Rc), s		16.50			4.77		11.80	42.70		0.00	30.90	
Change Period (Y+Rc), s		4.50			4.50		4.50	4.50		4.50	4.50	
Max Green Setting (Gmax), s		12.00			15.50		8.10	30.50		4.00	26.40	
Max Q Clear Time (g_c+I1), s		14.00			2.14		7.25	9.96		0.00	15.71	
Green Extension Time (p_c)		0.00			0.00		0.09	11.21		0.00	7.21	

Intersection Summary	
HCM 2010 Control Delay	30.5
HCM 2010 Level of Service	C

Intersection	
Intersection Delay (sec/veh):	1.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Volume (vph)	73	1000	857	24	9	48
Conflicting Peds.(#/hr)	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
Right Turn Channelized	None	None	None	None	None	None
Storage Length	90			0	0	0
Median Width		24	24		12	
Grade (%)		0%	0%		0%	
Peak Hour Factor	0.93	0.93	0.80	0.80	0.84	0.84
Heavy Vehicles(%)	2	2	2	2	2	2
Movement Flow Rate	78	1075	1071	30	11	57
Number of Lanes	1	2	2	0	1	0

Major/Minor	Major 1		Major 2			
Conflicting Flow Rate - All	1101	0	0	0	1780	551
Stage 1	-	-	-	-	1086	-
Stage 2	-	-	-	-	694	-
Follow-up Headway	2.22	-	-	-	3.52	3.32
Pot Capacity-1 Maneuver	630	-	-	-	73	478
Stage 1	-	-	-	-	285	-
Stage 2	-	-	-	-	457	-
Time blocked-Platoon(%)	0	-	-	-	0	0
Mov Capacity-1 Maneuver	630	-	-	-	64	478
Mov Capacity-2 Maneuver	-	-	-	-	64	-
Stage 1	-	-	-	-	285	-
Stage 2	-	-	-	-	400	-

Approach	EB	WB	SB
HCM Control Delay (s)	0.8	0	26.3
HCM LOS	A	A	D

Lane	EBL	EBT	WBT	WBR	SBLn1
Capacity (vph)					236
HCM Control Delay (s)	11.526	-	-	-	26.3
HCM Lane VC Ratio	0.125	-	-	-	0.288
HCM Lane LOS	B	-	-	-	D
HCM 95th Percentile Queue (veh)	0.424	-	-	-	1.148

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	506	410	51	19	425	99	43	31	33	154	24	406
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Queue, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking, Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow Rate	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Lanes	2	1	1	1	2	0	0	1	0	0	1	2
Capacity, veh/h	638	705	599	25	626	123	147	106	58	354	55	639
Arriving On Green	0.19	0.38	0.38	0.01	0.21	0.21	0.18	0.18	0.18	0.23	0.23	0.23
Sat Flow, veh/h	3441.6	1583.3	1583.3	1774.0	3026.1	594.5	833.1	600.6	329.3	1544.8	240.7	2786.7
Grp Volume(v), veh/h	532.6	431.6	37.9	21.1	289.6	276.0	109.6	0.0	0.0	211.9	0.0	364.3
Grp Sat Flow(s),veh/h/ln	1720.8	1862.7	1583.3	1774.0	1862.7	1757.8	1763.0	0.0	0.0	1785.5	0.0	1393.3
Q Serve(g_s), s	13.3	16.8	1.4	1.1	13.0	13.2	4.9	0.0	0.0	9.3	0.0	10.4
Cycle Q Clear(g_c), s	13.3	16.8	1.4	1.1	13.0	13.2	4.9	0.0	0.0	9.3	0.0	10.4
Proportion In Lane	1.000		1.000	1.000		0.338	0.473		0.187	0.865		1.000
Lane Grp Cap(c), veh/h	638.5	705.1	599.4	24.8	385.6	363.9	311.6	0.0	0.0	409.5	0.0	639.1
V/C Ratio(X)	0.834	0.612	0.063	0.851	0.751	0.758	0.352	0.000	0.000	0.517	0.000	0.570
Avail Cap(c_a), veh/h	893.3	837.7	712.1	109.2	468.9	442.5	311.6	0.0	0.0	409.5	0.0	639.1
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.000	0.000	1.000	0.000	1.000
Uniform Delay (d), s/veh	35.1	22.5	17.7	44.0	33.3	33.3	32.3	0.0	0.0	30.1	0.0	30.5
Incr Delay (d2), s/veh	4.9	1.0	0.0	50.9	5.4	6.0	3.1	0.0	0.0	4.6	0.0	3.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane Group Delay (d), s/veh	40.0	23.4	17.7	94.8	38.7	39.4	35.4	0.0	0.0	34.7	0.0	34.2
Lane Group LOS	D	C	B	F	D	D	D			C		C
Approach Volume, veh/h		1002			587			110			576	
Approach Delay, s/veh		32.0			41.0			35.4			34.4	
Approach LOS		C			D			D			C	

Timer												
Assigned Phase	7	4		3	8			2			6	
Phase Duration (G+Y+Rc), s	21.08	38.34		5.75	23.01			20.30			25.00	
Change Period (Y+Rc), s	4.50	4.50		4.50	4.50			4.50			4.50	
Max Green Setting (Gmax), s	23.20	40.20		5.50	22.50			15.80			20.50	
Max Q Clear Time (g_c+I1), s	15.33	18.75		3.06	15.20			6.88			12.36	
Green Extension Time (p_c)	1.25	5.84		0.00	3.30			0.31			1.69	

Intersection Summary	
HCM 2010 Control Delay	35.1
HCM 2010 Level of Service	D

Intersection	
Intersection Delay (sec/veh)	12.5
Intersection LOS	B

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adjusted Approach Flow (vph)	796	400	35	103
Demand Flow Rate (pc/h)	812	408	36	105
Vehicles Circulating (pc/h)	21	147	716	427
Vehicles Exiting (pc/h)	511	604	117	128
Follow-Up Headway (s)	3.186	3.186	3.186	3.186
Ped Vol. Crossing Leg (#/hr)	0	0	0	0
Ped Capacity Adjustment	1.000	1.000	1.000	1.000
Approach Delay (sec/veh)	15.5	8.5	7.5	6.5
Approach LOS	C	A	A	A

Lane	Left	Left	Left	Left
Designated moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
Right Turn Channelized				
Lane Utilization	1.000	1.000	1.000	1.000
Critical Headway (s)	5.193	5.193	5.193	5.193
Entry Flow Rate (pc/h)	812	408	36	105
Capacity, Entry Lane (pc/h)	1106	975	552	737
Entry HV Adjustment Factor	0.981	0.981	0.970	0.979
Flow Rate, Entry (vph)	796	400	35	103
Capacity, Entry (vph)	1085	957	536	722
Volume to Capacity Ratio	0.734	0.418	0.065	0.142
Control Delay (sec/veh)	15.5	8.5	7.5	6.5
Level of Service	C	A	A	A
95th-Percentile Queue (veh)	7	2	0	0

HCM research expects at least one 'Stop' controlled approach at the intersection.

Intersection	
Intersection Delay (sec/veh)	7.7
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adjusted Approach Flow (vph)	28	72	290	515
Demand Flow Rate (pc/h)	28	73	295	526
Vehicles Circulating (pc/h)	498	300	113	23
Vehicles Exiting (pc/h)	51	108	413	350
Follow-Up Headway (s)	3.186	3.186	3.186	3.186
Ped Vol. Crossing Leg (#/hr)	0	0	0	0
Ped Capacity Adjustment	1.000	1.000	1.000	1.000
Approach Delay (sec/veh)	5.7	5.2	6.6	8.7
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
Right Turn Channelized				
Lane Utilization	1.000	1.000	1.000	1.000
Critical Headway (s)	5.193	5.193	5.193	5.193
Entry Flow Rate (pc/h)	28	73	295	526
Capacity, Entry Lane (pc/h)	687	837	1009	1104
Entry HV Adjustment Factor	0.996	0.985	0.982	0.980
Flow Rate, Entry (vph)	28	72	290	515
Capacity, Entry (vph)	684	824	991	1082
Volume to Capacity Ratio	0.041	0.087	0.292	0.476
Control Delay (sec/veh)	5.7	5.2	6.6	8.7
Level of Service	A	A	A	A
95th-Percentile Queue (veh)	0	0	1	3

HCM research expects at least one 'Stop' controlled approach at the intersection.

Intersection	
Intersection Delay (sec/veh)	8.2
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Volume (vph)	0	0	0	15	90	10	68	90	0	0	5	28
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles(%)	2	2	2	2	2	2	2	2	2	2	2	2
Movement Flow Rate	0	0	0	16	98	11	74	98	0	0	5	30
Number of Lanes	0	0	0	0	1	0	1	0	0	0	1	0

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	8.2	8.5	7.1
HCM LOS	A	A	A

Lane	NBLn1	WBLn1	SBLn1
Volume Left (%)	43%	13%	0%
Volume Thru (%)	57%	78%	15%
Volume Right (%)	0%	9%	85%
Sign Control	Stop	Stop	Stop
Traffic Volume by Lane	158	115	33
Left Turning Volume	90	90	5
Through Volume	0	10	28
Right Turning Volume	68	15	0
Lane Flow Rate	172	125	36
Geometry Group	1	1	1
Degree of Utilization, X	0.204	0.152	0.039
Departure Headway, Hd	4.267	4.375	3.897
Convergence(Y/N)	Yes	Yes	Yes
Capacity	830	824	923
Service Time	2.355	2.377	1.905
HCM Lane V/C Ratio	0.207	0.152	0.039
HCM Control Delay	8.5	8.2	7.1
HCM Lane LOS	A	A	A
HCM 95th Percentile Queue	0.8	0.5	0.1

Intersection	
Intersection Delay (sec/veh)	8.7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Volume (vph)	90	90	89	0	0	0	0	68	10	5	15	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles(%)	2	2	2	2	2	2	2	2	2	2	2	2
Movement Flow Rate	98	98	97	0	0	0	0	74	11	5	16	0
Number of Lanes	0	1	0	0	0	0	0	1	0	0	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	9	8.1	7.9
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1
Volume Left (%)	0%	33%	25%
Volume Thru (%)	87%	33%	75%
Volume Right (%)	13%	33%	0%
Sign Control	Stop	Stop	Stop
Traffic Volume by Lane	78	269	20
Left Turning Volume	68	90	15
Through Volume	10	89	0
Right Turning Volume	0	90	5
Lane Flow Rate	85	292	22
Geometry Group	1	1	1
Degree of Utilization, X	0.107	0.324	0.029
Departure Headway, Hd	4.523	3.985	4.724
Convergence(Y/N)	Yes	Yes	Yes
Capacity	797	889	762
Service Time	2.524	2.066	2.728
HCM Lane V/C Ratio	0.107	0.328	0.029
HCM Control Delay	8.1	9	7.9
HCM Lane LOS	A	A	A
HCM 95th Percentile Queue	0.4	1.4	0.1

Intersection	
Intersection Delay (sec/veh):	2.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Volume (vph)	5	23	37	22	15	10
Conflicting Peds.(#/hr)	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
Right Turn Channelized	None	None	None	None	None	None
Storage Length	120			0	0	0
Median Width		0	0		12	
Grade (%)		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles(%)	2	2	2	2	2	2
Movement Flow Rate	5	25	40	24	16	11
Number of Lanes	0	1	1	0	1	0

Major/Minor	Major 1		Major 2			
Conflicting Flow Rate - All	64	0	0	0	87	52
Stage 1	-	-	-	-	52	-
Stage 2	-	-	-	-	35	-
Follow-up Headway	2.218	-	-	-	3.518	3.318
Pot Capacity-1 Maneuver	1538	-	-	-	914	1016
Stage 1	-	-	-	-	970	-
Stage 2	-	-	-	-	987	-
Time blocked-Platoon(%)	0	-	-	-	0	0
Mov Capacity-1 Maneuver	1538	-	-	-	911	1016
Mov Capacity-2 Maneuver	-	-	-	-	911	-
Stage 1	-	-	-	-	970	-
Stage 2	-	-	-	-	984	-

Approach	EB	WB	SB
HCM Control Delay (s)	1.3	0	8.9
HCM LOS	A	A	A

Lane	EBL	EBT	WBT	WBR	SBLn1
Capacity (vph)					950
HCM Control Delay (s)	7.349	-	-	-	8.9
HCM Lane VC Ratio	0.004	-	-	-	0.029
HCM Lane LOS	A	-	-	-	A
HCM 95th Percentile Queue (veh)	0.011	-	-	-	0.088

Intersection	
Intersection Delay (sec/veh)	3.8
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adjusted Approach Flow (vph)	32	83	0	39
Demand Flow Rate (pc/h)	33	85	0	40
Vehicles Circulating (pc/h)	35	0	68	54
Vehicles Exiting (pc/h)	59	68	0	31
Follow-Up Headway (s)	3.186	3.186	3.186	3.186
Ped Vol. Crossing Leg (#/hr)	0	0	0	0
Ped Capacity Adjustment	1.000	1.000	1.000	1.000
Approach Delay (sec/veh)	3.6	3.9	0.0	3.8
Approach LOS	A	A	-	A

Lane	Left	Left	Left	Left
Designated moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
Right Turn Channelized				
Lane Utilization	1.000	1.000	1.000	1.000
Critical Headway (s)	5.193	5.193	5.193	5.193
Entry Flow Rate (pc/h)	33	85	0	40
Capacity, Entry Lane (pc/h)	1091	1130	1056	1071
Entry HV Adjustment Factor	0.980	0.976	1.000	0.975
Flow Rate, Entry (vph)	32	83	0	39
Capacity, Entry (vph)	1070	1103	1056	1044
Volume to Capacity Ratio	0.030	0.075	0.000	0.037
Control Delay (sec/veh)	3.6	3.9	3.4	3.8
Level of Service	A	A	A	A
95th-Percentile Queue (veh)	0	0	0	0

HCM research expects at least one 'Stop' controlled approach at the intersection.

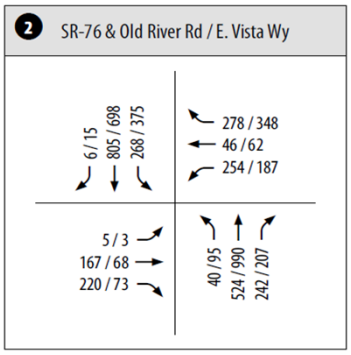
Appendix AF

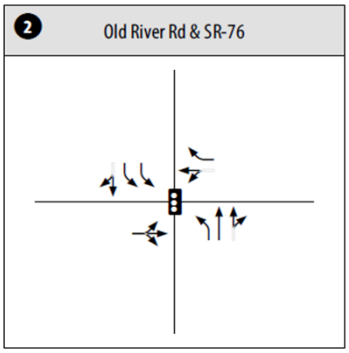
Ramp Intersection Capacity Analysis Worksheets – Existing Plus Project (Phase D) Conditions

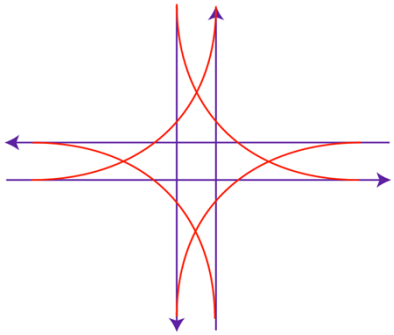
EXISTING + PROJECT PHASE D

INTERSECTION LANE VEHICLES CALCULATION WORKSHEET
(BASED ON CALTRANS HIGHWAY DESIGN MANUAL)

N/S Street SR-76 E/W Street OLD RIVER ROAD / EAST VISTA WAY







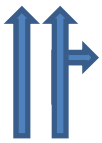
PHASE 1:

40 / 95	
AM/PM	

268 / 375	
AM/PM	
Critical Volume	134 / 188

PHASE 2:

766 / 1,197
AM/PM



811 / 713	
AM/PM	
Critical Volume	717 / 620

PHASE 3

WBL	254		187
WBT	46		62
WBR	278		348
	AM	/	PM

Critical Volume 300 / 348

PHASE 4

EBL	5		3
EBT	167		68
EBR	226		73
	AM	/	PM

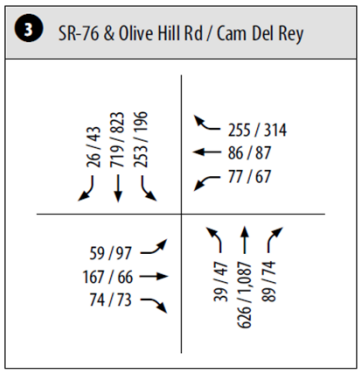
Critical Volume 398 / 144

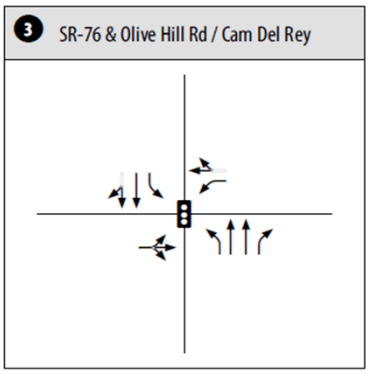
SUM	PHASE 1	134 / 188	AM	1,549 >1500: (Over Capacity)
	PHASE 2	717 / 620	PM	1,300 1200-1500: (At Capacity)
	PHASE 3	300 / 348		
	PHASE 4	398 / 144		
	TOTAL	1,549 / 1,300		

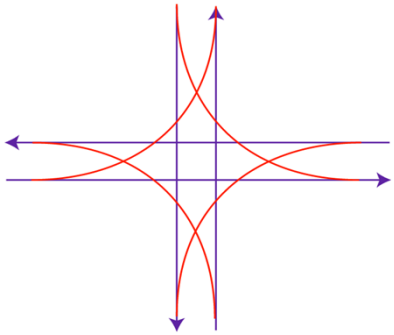
EXISTING + PROJECT PHASE D

INTERSECTION LANE VEHICLES CALCULATION WORKSHEET
(BASED ON CALTRANS HIGHWAY DESIGN MANUAL)

N/S Street SR-76 E/W Street OLIVE HILL RD / CAM DEL REY







PHASE 1:

39 / 47	
AM/PM	

Critical Volume

253 / 196
AM/PM
253 / 196

PHASE 2:

NBT	626 / 1,087
NBR	89 / 74
	AM/PM

Critical Volume

745 / 866
AM/PM
313 / 544

PHASE 3

WBL	77	67
WBT	86	87
WBR	255	314
	AM /	PM

Critical Volume 341 / 401

PHASE 4

EBL	59	97
EBT	167	66
EBR	74	73
	AM /	PM

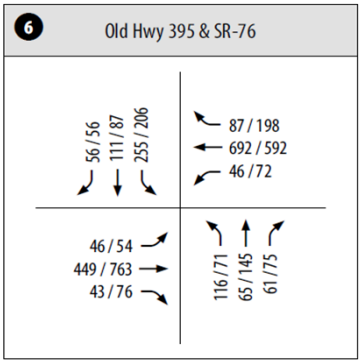
Critical Volume 300 / 236

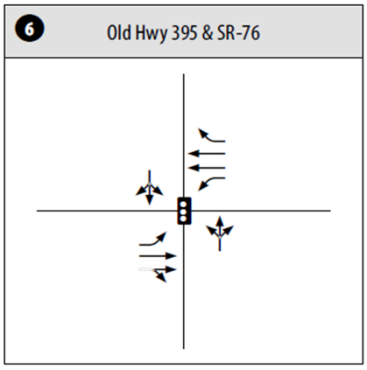
SUM	PHASE 1	253 / 196	AM	1,207	1200-1500: (At Capacity)
	PHASE 2	313 / 544	PM	1,377	1200-1500: (At Capacity)
	PHASE 3	341 / 401			
	PHASE 4	300 / 236			
	TOTAL	1,207 / 1,377			

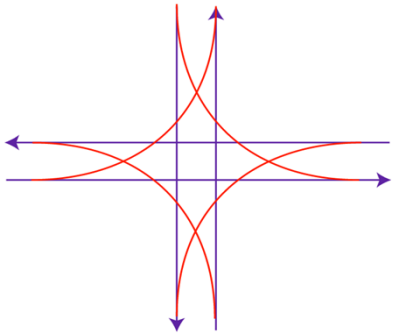
EXISTING + PROJECT PHASE D

INTERSECTION LANE VEHICLES CALCULATION WORKSHEET
(BASED ON CALTRANS HIGHWAY DESIGN MANUAL)

N/S Street SR-76 E/W Street OLD HIGHWAY 395







PHASE 1:

46 / 54	
AM/PM	

Critical Volume

46 / 72	
AM/PM	
46 / 72	

PHASE 2:

NBT	449 / 763	87 / 198	WBR
NBR	73 / 76	692 / 592	WBT
	AM/PM	AM/PM	

Critical Volume 346 / 420

PHASE 3

NBL	116	71
NBT	65	145
NBR	61	75
	AM /	PM

Critical Volume 242 / 291

PHASE 4

SBL	255	206
SBT	111	87
SBR	56	56
	AM /	PM

Critical Volume 422 / 349

SUM	PHASE 1	46 / 72	AM	1,056 <1200: (Under Capacity)
	PHASE 2	346 / 420	PM	1,132 <1200: (Under Capacity)
	PHASE 3	242 / 291		
	PHASE 4	422 / 349		
	TOTAL	1,056 / 1,132		

Appendix AG

Traffic Signal Warrants –

Existing Plus Project (Phase D) Conditions

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 2 of 5)

INTERSECTION #13 : OLD HIGHWAY 395 / CIRCLE R DRIVE - EXISTING + PHASE D

WARRANT 2 - Four Hour Vehicular Volume **SATISFIED* YES ☐ NO ☐**

Record hourly vehicular volumes for any four hours of an average day.

APPROACH LANES	One	2 or More					Hour
Both Approaches - Major Street							
Higher Approach - Minor Street							

*All plotted points fall above the applicable curve in Figure 4C-1. (URBAN AREAS)	Yes ☐	No ☐
OR, All plotted points fall above the applicable curve in Figure 4C-2. (RURAL AREAS)	Yes ☐	No ☐

WARRANT 3 - Peak Hour
(Part A or Part B must be satisfied) **SATISFIED YES ☒ NO ☐**

PART A **SATISFIED YES ☒ NO ☐**

(All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods)

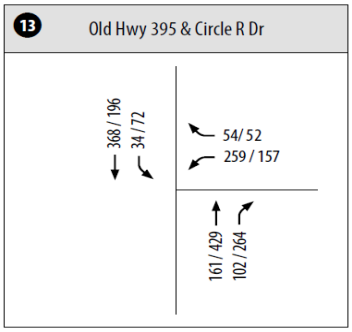
1. The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach; AND	Yes ☒	No ☐
2. The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND	Yes ☒ 313 / 209	No ☐
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches.	Yes ☒ 978 / 1,170	No ☐

PART B **SATISFIED YES ☒ NO ☐**

APPROACH LANES	One	2 or More		Hour
Both Approaches - Major Street	X			665 / 961
Higher Approach - Minor Street	X			313 / 209

The plotted point falls above the applicable curve in Figure 4C-3. (URBAN AREAS)	Yes ☐	No ☐
OR, The plotted point falls above the applicable curve in Figure 4C-4. (RURAL AREAS)	Yes ☒	No ☐

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.



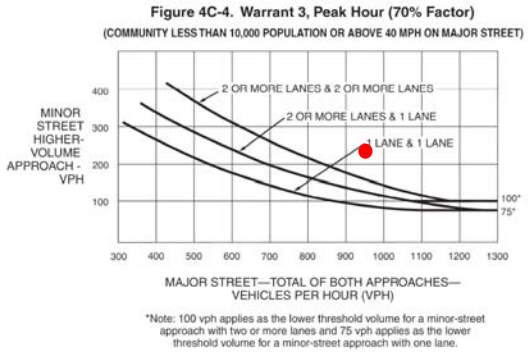


Figure 4C-103 (CA). Traffic Signal Warrants Worksheet (Average Traffic Estimate Form)

COUNT DATE Existing + Phase D

DIST ____ CO ____ RTE ____ PM ____

CALC ____ DATE ____
CHK ____ DATE ____

Major St: Old Highway 395 — Critical Approach Speed ____ mph
Minor St: Circle R Drive — Critical Approach Speed ____ mph

Speed limit or critical speed on major street traffic > 40 mph..... ☒
or
In built up area of isolated community of < 10,000 population..... ☐
} RURAL (R)

☐ URBAN (U)

(Based on Estimated Average Daily Traffic - See Note)

URBAN..... RURAL.....X.....

	Minimum Requirements EADT			
	Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
	Urban	Rural	Urban	Rural
CONDITION A - Minimum Vehicular Volume Satisfied X Not Satisfied ____				
Number of lanes for moving traffic on each approach Major Street 12,640 / Minor Street 6,400				
1 / 1	8,000	5,600	2,400	1,680
2 or More / 1	9,600	6,720	2,400	1,680
2 or More / 2 or More	9,600	6,720	3,200	2,240
1 / 2 or More	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic Satisfied X Not Satisfied ____	Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
Number of lanes for moving traffic on each approach Major Street 12,640 / Minor Street 6,400				
1 / 1	12,000	8,400	1,200	850
2 or More / 1	14,400	10,080	1,200	850
2 or More / 2 or More	14,400	10,080	1,600	1,120
1 / 2 or More	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B Satisfied X Not Satisfied ____ No one condition satisfied, but following conditions fulfilled 80% or more..... ____ A ____ B	2 CONDITIONS 80%		2 CONDITIONS 80%	

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet (Average Traffic Estimate Form)

COUNT DATE Existing + Phase D

DIST ____ CO ____ RTE ____ PM ____

CALC ____ DATE ____
CHK ____ DATE ____

Major St: Gopher Canyon Rd — Critical Approach Speed ____ mph
Minor St: I-15 SB Ramps — Critical Approach Speed ____ mph

Speed limit or critical speed on major street traffic > 40 mph..... ☒
or
In built up area of isolated community of < 10,000 population..... ☐
} RURAL (R)

☐ URBAN (U)

(Based on Estimated Average Daily Traffic - See Note)

URBAN..... RURAL.....X.....

	Minimum Requirements EADT			
	Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
	Urban	Rural	Urban	Rural
CONDITION A - Minimum Vehicular Volume Satisfied X Not Satisfied ____ Number of lanes for moving traffic on each approach Major Street / Minor Street 1 / 1	8,000	5,600	2,400	1,680
2 or More 13,420 / 1 4,050	9,600	6,720	2,400	1,680
2 or More / 2 or More	9,600	6,720	3,200	2,240
1 / 2 or More	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic Satisfied X Not Satisfied ____ Number of lanes for moving traffic on each approach Major Street / Minor Street 1 / 1	12,000	8,400	1,200	850
2 or More 13,420 / 1 4,050	14,400	10,080	1,200	850
2 or More / 2 or More	14,400	10,080	1,600	1,120
1 / 2 or More	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B Satisfied X Not Satisfied ____ No one condition satisfied, but following conditions fulfilled 80% or more..... ____ A ____ B	2 CONDITIONS 80%		2 CONDITIONS 80%	

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.