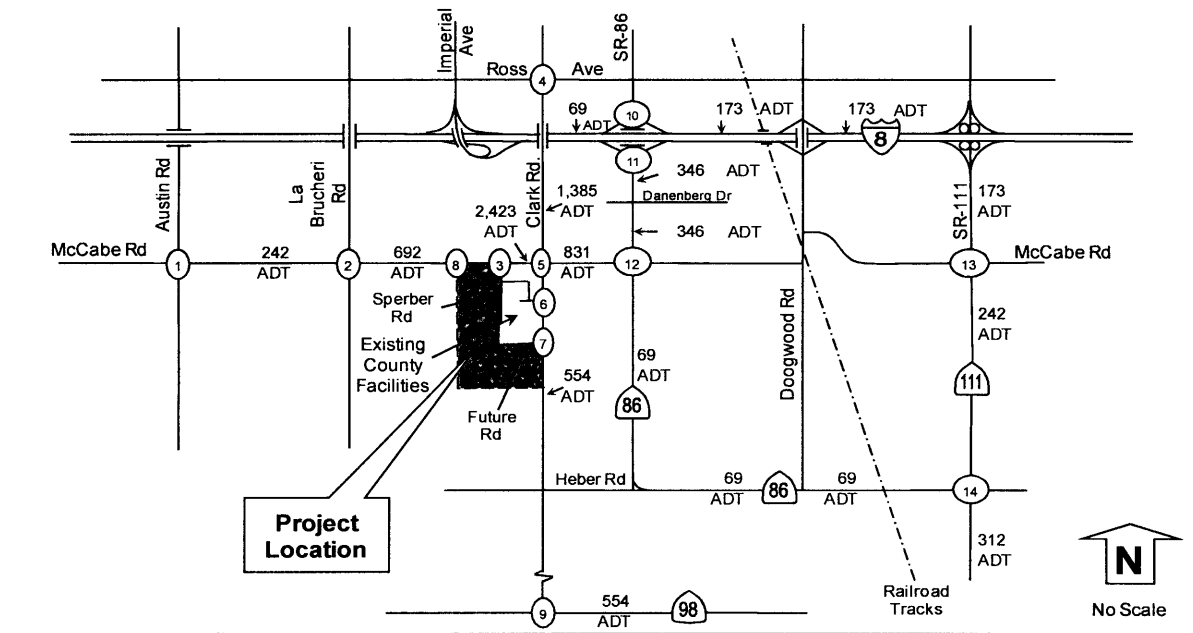
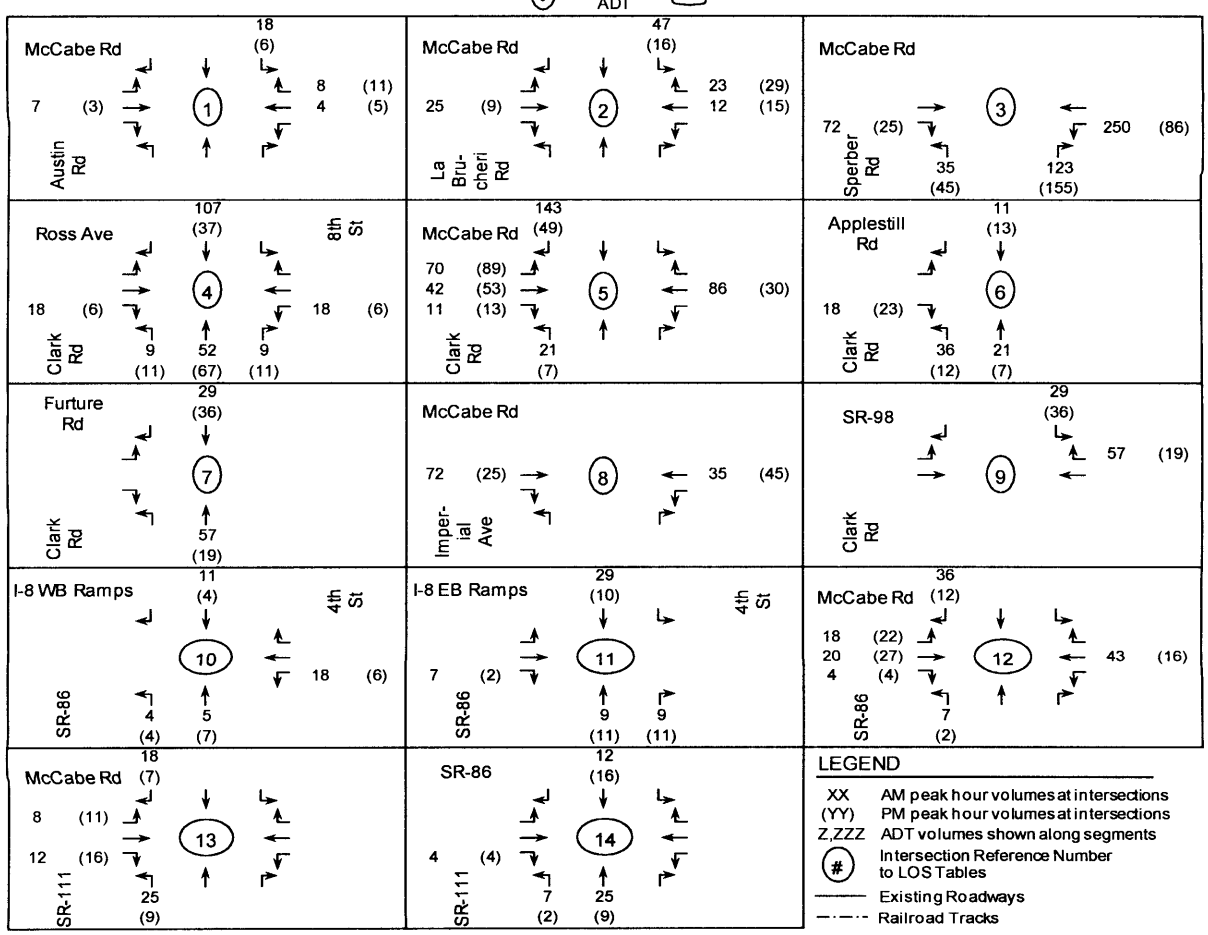
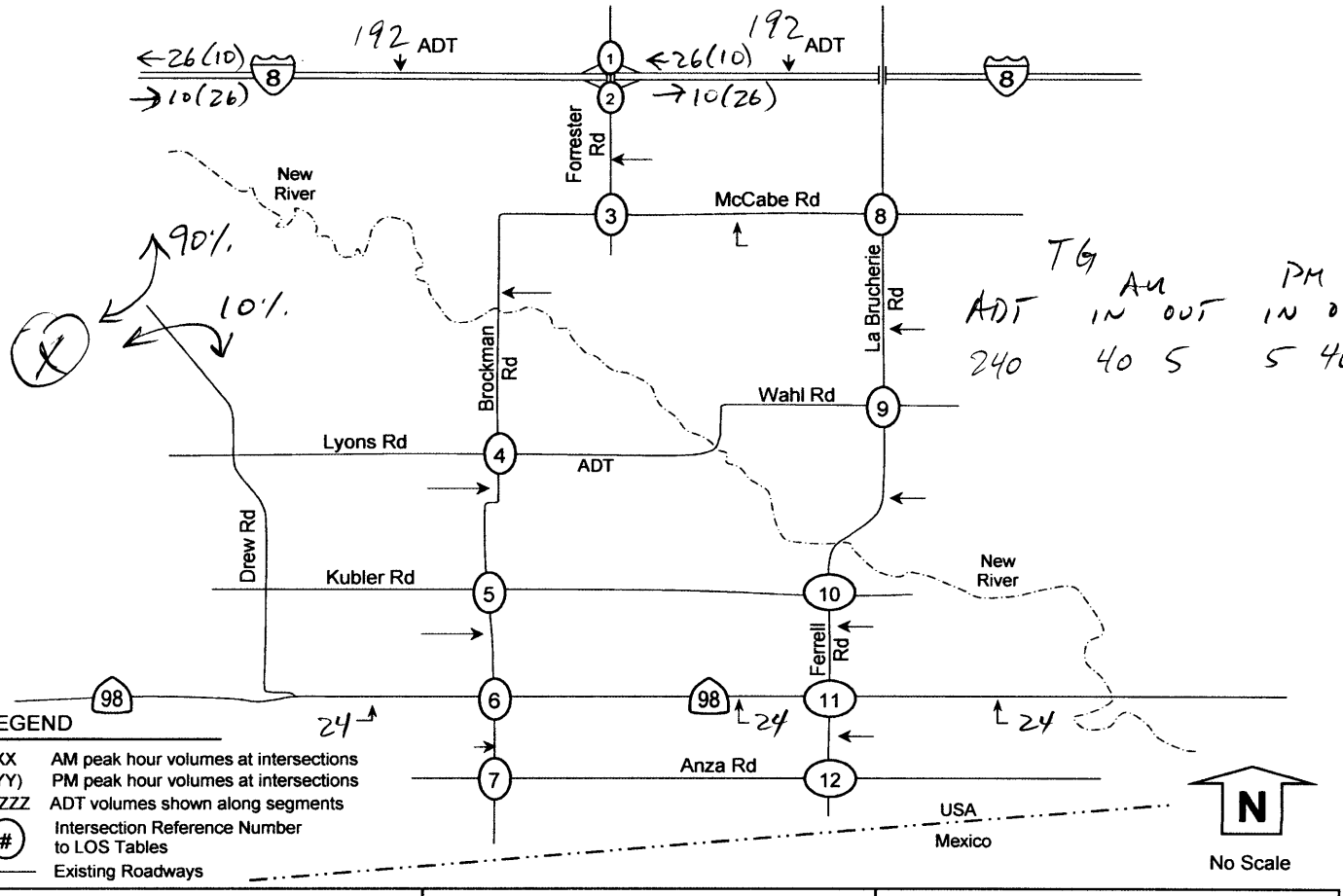
Figure 10: Project Assignment (Phase 1B)



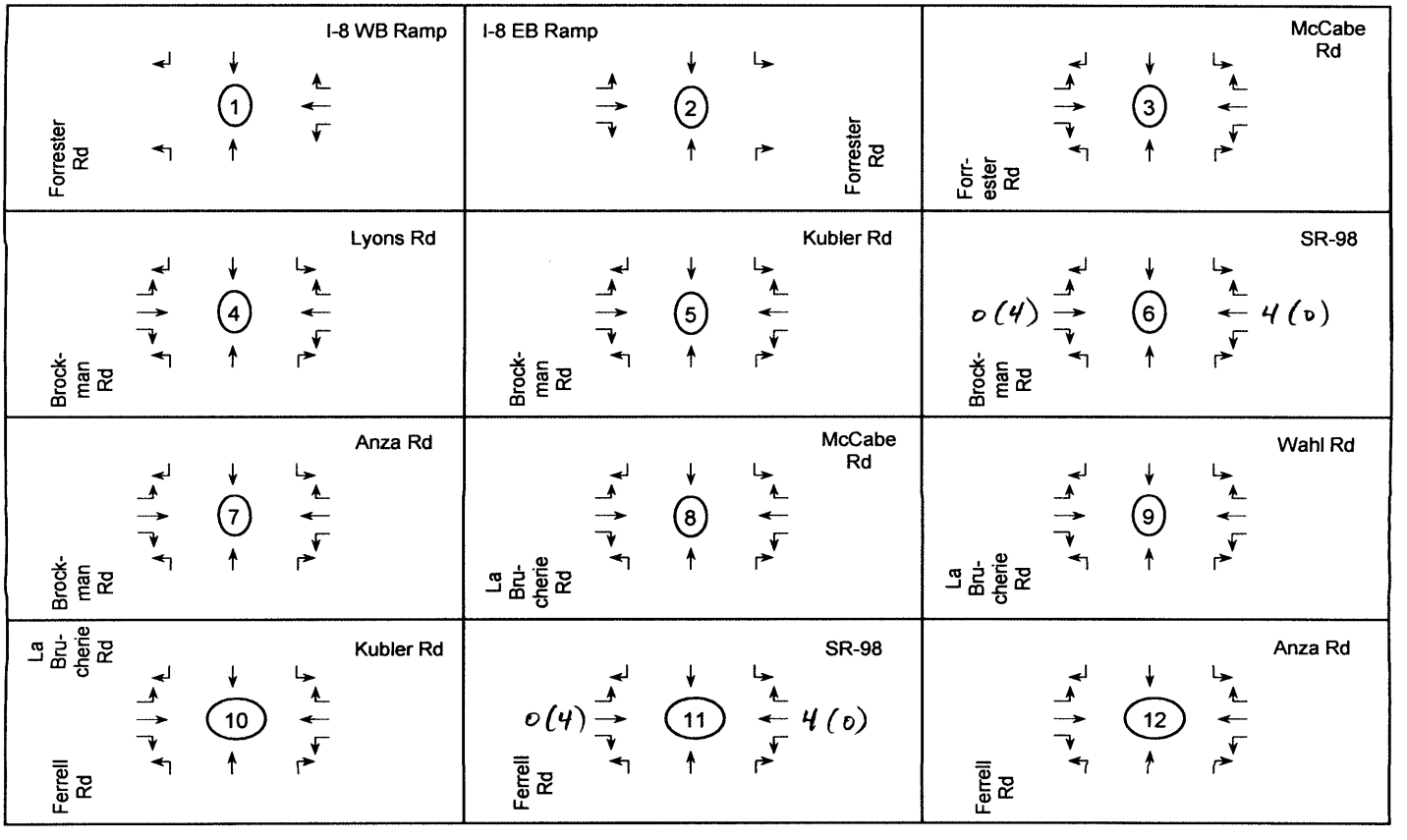


CUMULATIVE PROJECTS: IV SUBSTATION & OCOTILLO SOLAR



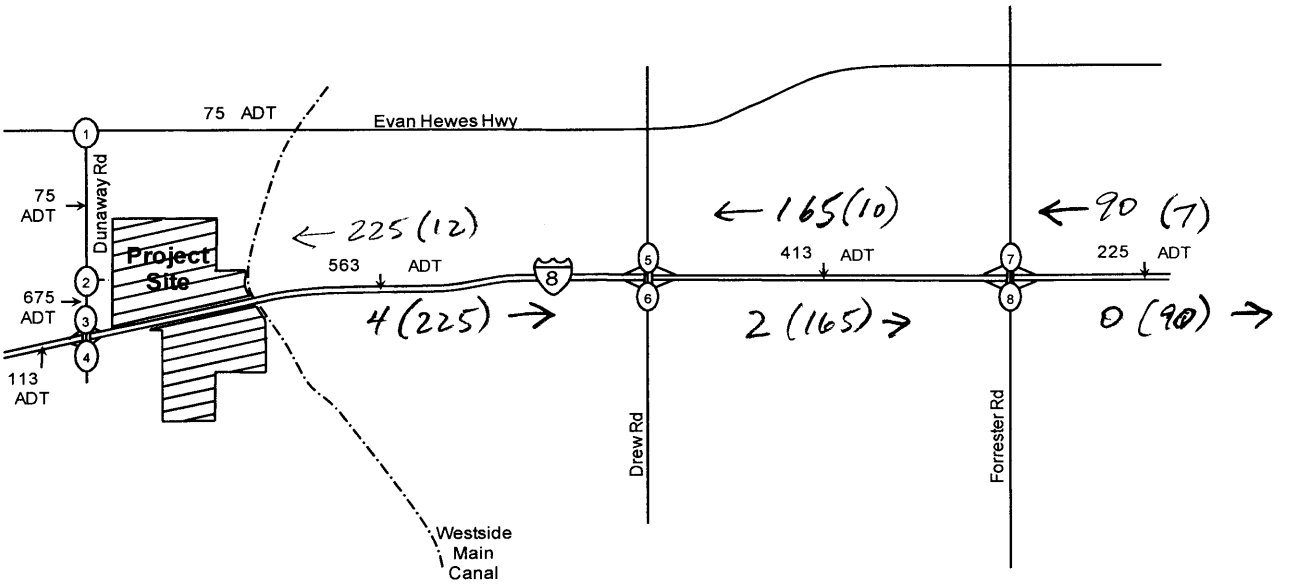
TG

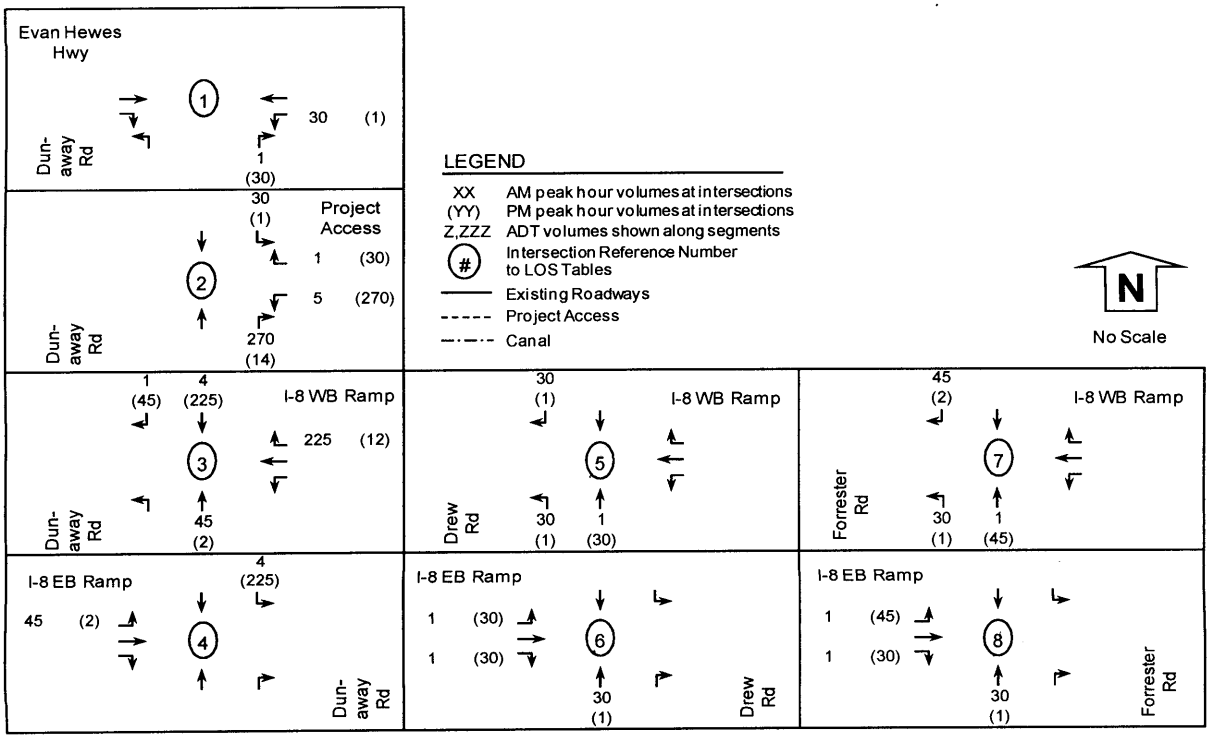
	AM		PM	
ADT	IN	OUT	IN	OUT
240	40	5	5	40

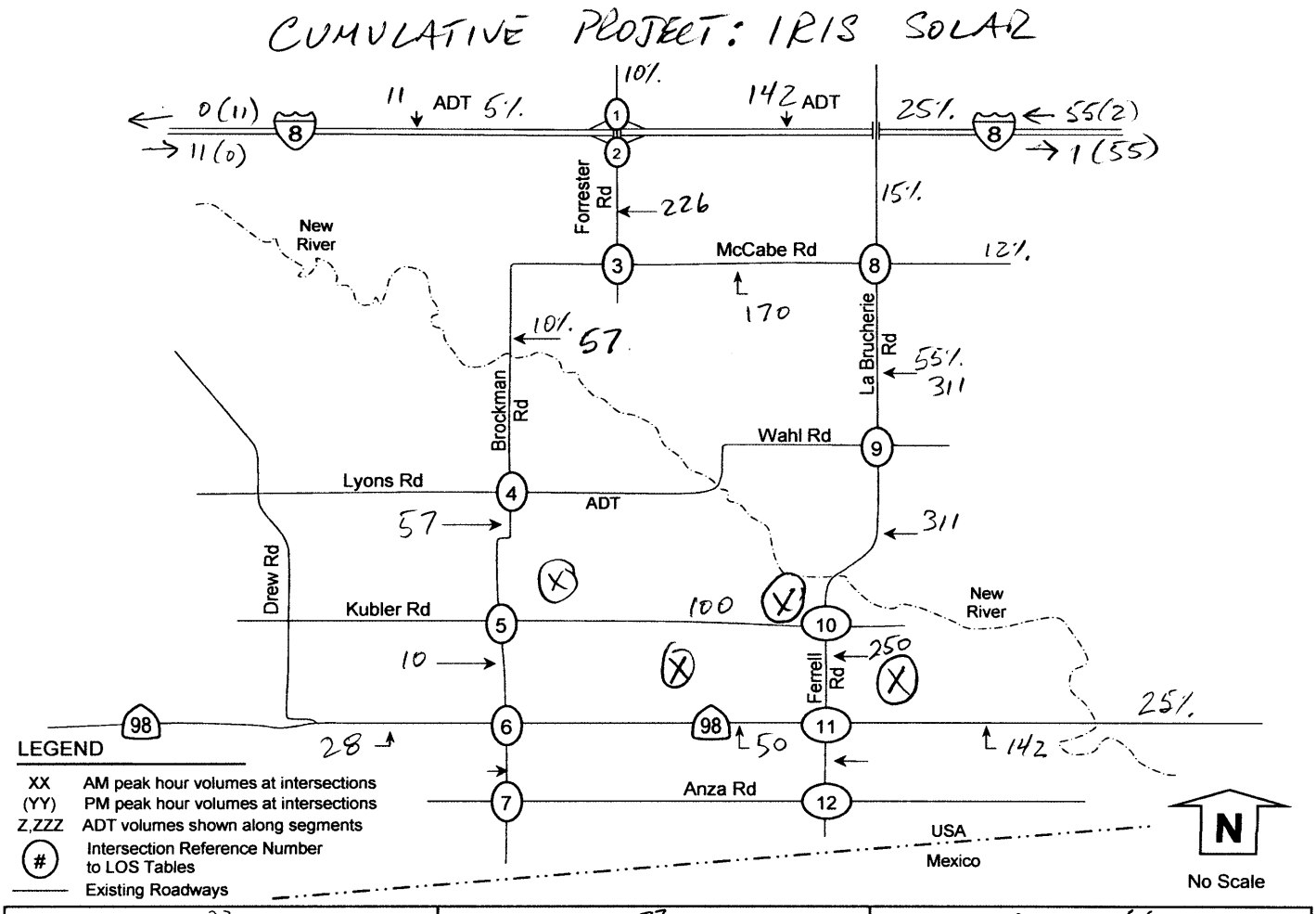


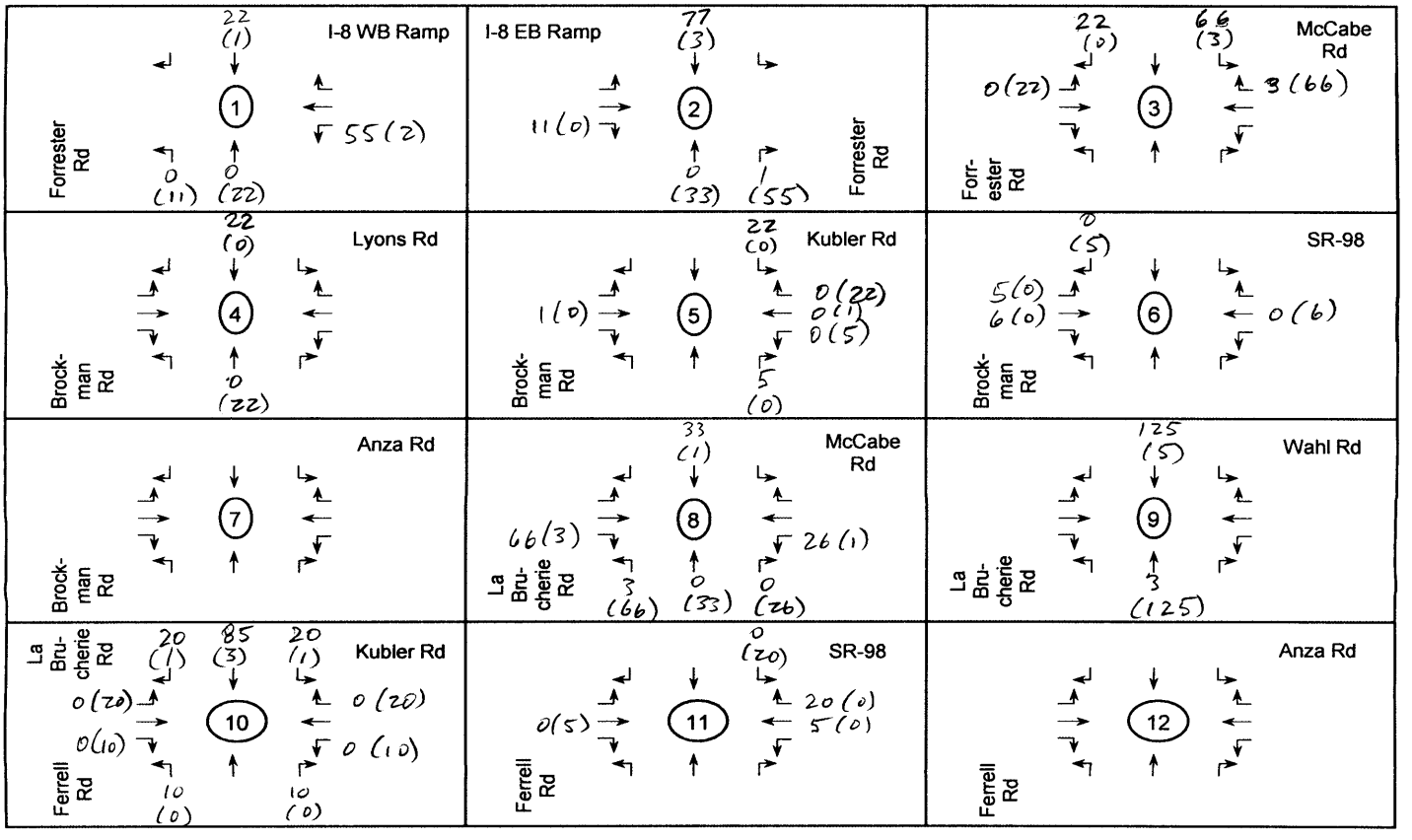
CUMULATIVE PROJECT: IMPERIAL SOLAR ENERGY CENTER WEST

Figure 7: Construction Trip Assignment





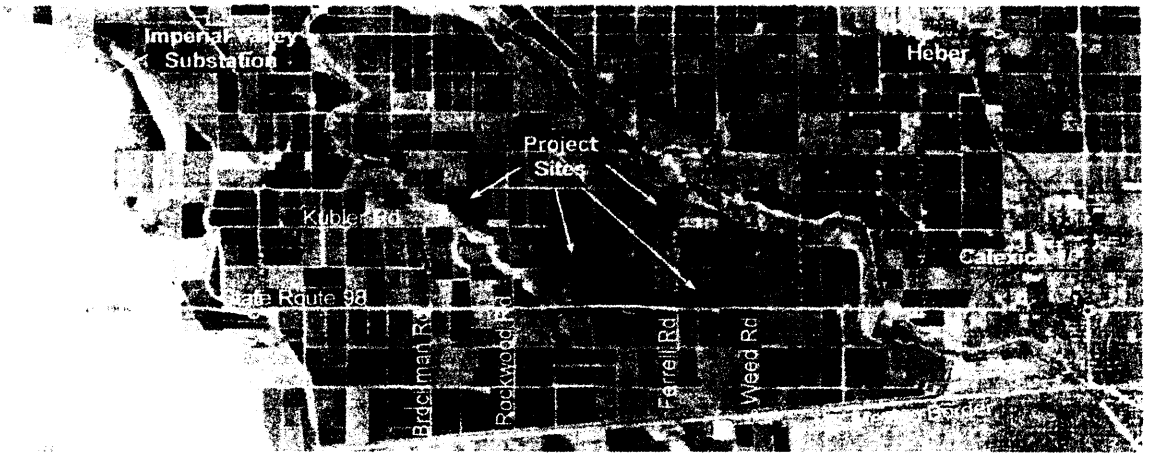

CUMULATIVE PROJECT: IRIS SOLAR
0 (11)
11 (0)
11 ADT 5%
142 ADT
25%
55 (2)
1 (55)
Forrester Rd
226
15%
New River
McCabe Rd
12%
170
10%
57
La Brucherie Rd
55%
311
Brockman Rd
Wahl Rd
Lyons Rd
ADT
57
311
Drew Rd
Kubler Rd
100
New River
10
250
Ferrell Rd
25%
28
50
142
Anza Rd
USA
Mexico
LEGEND
XX AM peak hour volumes at intersections
(YY) PM peak hour volumes at intersections
Z,ZZZ ADT volumes shown along segments
(#) Intersection Reference Number to LOS Tables
Existing Roadways
N
No Scale

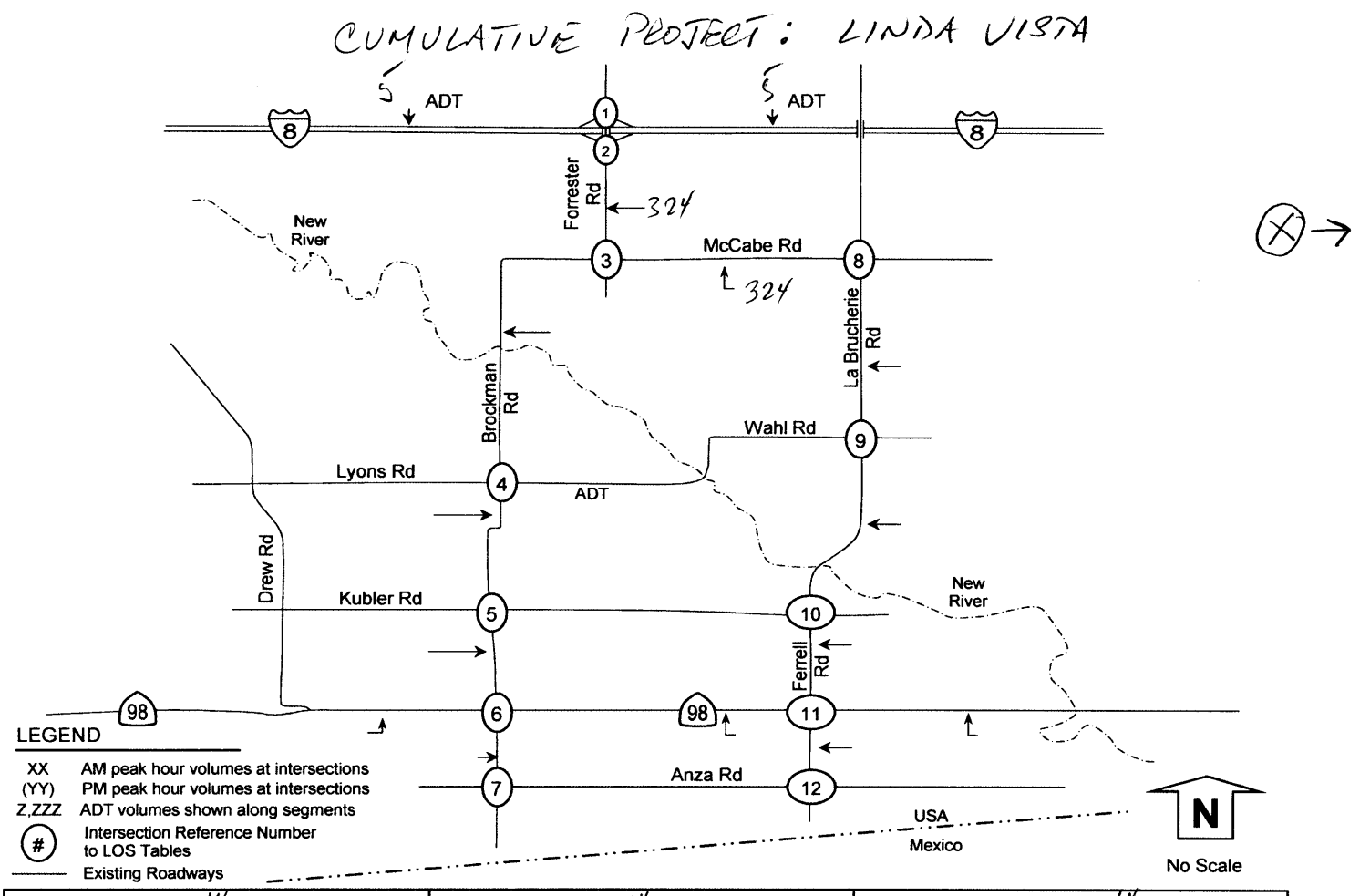

I-8 WB Ramp
Forrester Rd
I-8 EB Ramp
Forrester Rd
McCabe Rd
Forr-ester Rd
Lyons Rd
Brock-man Rd
Kubler Rd
Brock-man Rd
SR-98
Brock-man Rd
Anza Rd
Brock-man Rd
McCabe Rd
La Bru-cherie Rd
Wahl Rd
La Bru-cherie Rd
Kubler Rd
Ferrell Rd
SR-98
Ferrell Rd
Anza Rd
Ferrell Rd

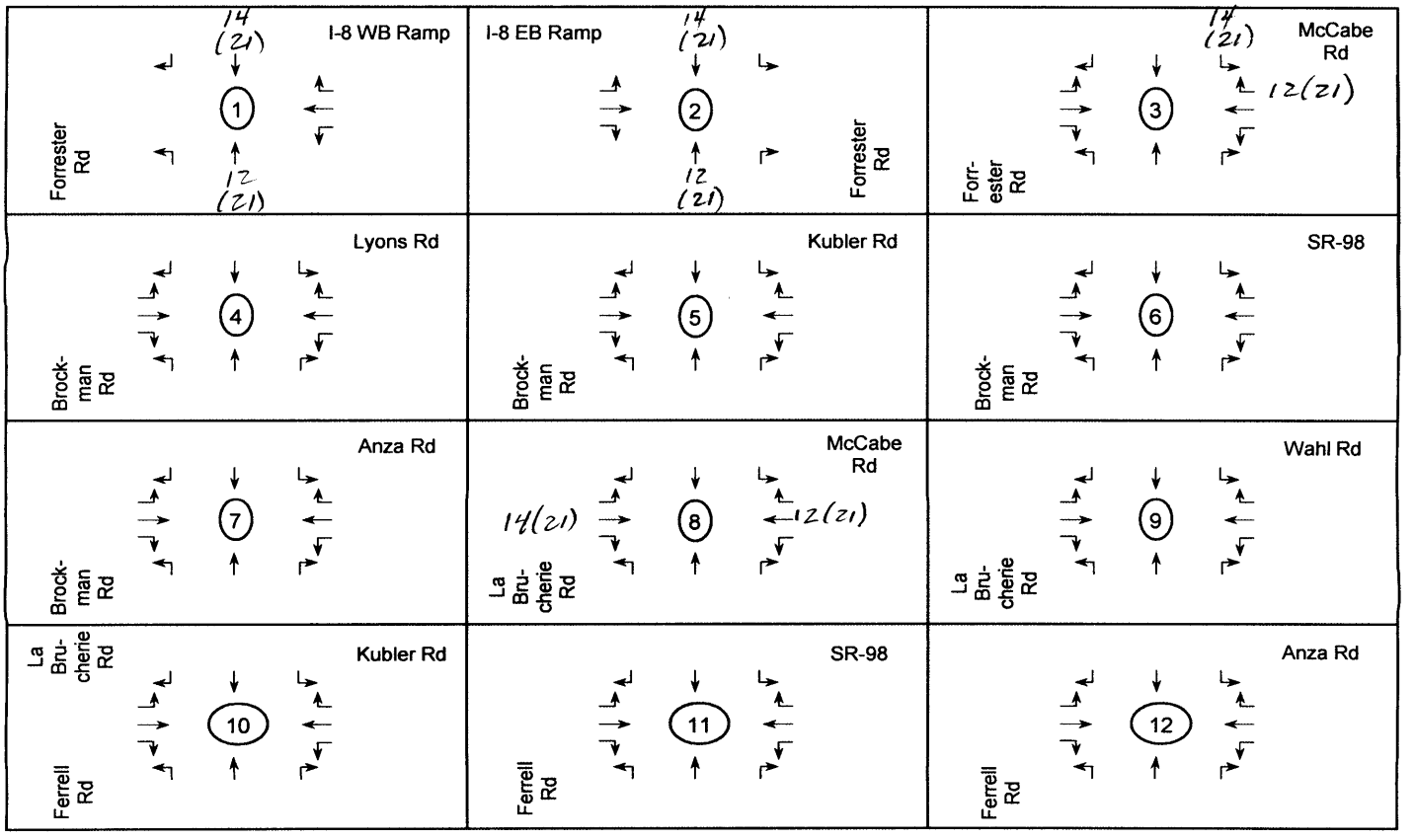
IRIS SOLAR

PROJECT INFORMATION

85JP 8ME, LLC, known herein as the "Applicant", is seeking approval of a Conditional Use Permit (the "CUP") for the construction of an up to 200 Megawatt (MW-AC) utility scale solar farm known as Iris Solar Farm ("ISF" or the "Project") in Imperial County, California. The Applicant plans to construct the Project in multiple phases, with each parcel being a single phase; phases may be combined as necessary to meet power production requirements. The Applicant proposes to construct, own, operate, and fund ISF.




CUMULATIVE PROJECT: LINDA VISTA
5 ADT
5 ADT
8
8
1
2
Forrester Rd
324
New River
McCabe Rd
3
8
324
La Brucherie Rd
Brockman Rd
Wahl Rd
9
Lyons Rd
4
ADT
Drew Rd
Kubler Rd
5
10
New River
Ferrell Rd
98
6
98
11
7
Anza Rd
12
USA
Mexico
N
No Scale
LEGEND
XX AM peak hour volumes at intersections
(YY) PM peak hour volumes at intersections
Z,ZZZ ADT volumes shown along segments
(#) Intersection Reference Number to LOS Tables
Existing Roadways


I-8 WB Ramp
14 (21)
12 (21)
Forrester Rd
I-8 EB Ramp
14 (21)
12 (21)
Forrester Rd
McCabe Rd
14 (21)
12(21)
Forr-ester Rd
Lyons Rd
Brock-man Rd
Kubler Rd
Brock-man Rd
SR-98
Brock-man Rd
Anza Rd
Brock-man Rd
McCabe Rd
14(21)
12(21)
La Bru-cherie Rd
Wahl Rd
La Bru-cherie Rd
La Bru-cherie Rd
Ferrell Rd
Kubler Rd
SR-98
Ferrell Rd
Anza Rd
Ferrell Rd

8.0 CUMULATIVE PROJECTS

There are other planned projects in the areas adjacent to the project site that will add traffic to the roadways surrounding the project site. Based a review of potential projects in the City of El Centro, City of Calexico, and the County of Imperial, it was determined that thirty-four (34) near-term development projects should be included in the traffic study. The following is a brief description of these cumulative projects. ***Figure 8–1*** shows the total cumulative projects traffic volumes & Figure 8–2 depicts the existing + project + cumulative projects traffic volumes. ***Appendix E*** contains more detailed information on the cumulative projects. There are several longer –term projects in the City of Calexico which are not included in the near-tem cumulative scenario but are included in the 2030 cumulative scenario.

8.1 Description of Projects

Linda Vista Mixed Use proposes to develop 182 single-family dwelling units along with a 6-acre commercial lot. The project site is currently undeveloped agricultural land. Based on the trip generation calculations, the total project is calculated to generate 7,175 ADT with 109 inbound / 143 outbound trips during the AM peak hour and 349 inbound / 327 outbound trips during the PM peak hour. The traffic study for this project was prepared by LLG (August 2004).

Desert Village Mixed Use proposes to develop 95 single-family residential homes along with 260 apartment units and 7.3 acres of commercial space. The project site is currently undeveloped agricultural land. Based on the trip generation calculations, the total project is calculated to generate 8,740 ADT with 129 inbound / 202 outbound trips during the AM peak hour and 431 inbound / 387 outbound trips during the PM peak hour. The traffic study for this project was prepared by LLG (February 2005).

Countryside Estates proposes to develop a 152-unit residential subdivision on 39.80 acres. The project site is currently undeveloped agricultural land. Based on the trip generation calculations, the total project is calculated to generate 1,530 ADT with 29 inbound / 87 outbound trips during the AM peak hour and 98 inbound / 58 outbound trips during the PM peak hour. The traffic study for this project was prepared by LLG (November 2004).

Venezia Planned Community proposes to develop approximately 250 single-family residential dwelling units and 135,100 square feet of commercial space. The project is located southeast of SR 98, east of Bowker Road and south of the All American Canal. The project is calculated to generate 12,140 ADT with 279 inbound / 279 outbound trips during the AM peak hour and 640 inbound / 576 outbound trips during the PM peak hour. The traffic study for this project was prepared by LLG (March 2005).

The McCabe Ranch proposes to develop 428 single-family residential dwelling units located south of Interstate 8 and west of Dogwood Road. The project is calculated to generate 3,550 ADT with 76 inbound / 206 outbound trips during the AM peak hour and 243 inbound / 142 outbound trips during the PM peak hour. The traffic study for this project was prepared by LLG (July 2002).

CANERGY ROCKWOOD PROJECT
CONDITIONAL USE PERMIT ATTACHMENT

January 2013

6. Assessor's Parcel Numbers

APN-037-070-002; APN-037-070-003; APN-037-070-016; APN-037-070-004. (A Parcel Map Application is being concurrently submitted to combine these parcels), as well as create a parcel for an electrical substation, which will likely be owned by IID. These parcels constitute approximately 83.17 acres of property and they lie directly west of the Union Pacific Rail line north of Rutherford Road, east of Jefferson Road, and west of Kershaw Road.

7. Property Address:

The property address is 206 E. Rutherford Road, Brawley, CA 92227 or APN-037-070-004.

8. General Location:

The Project is to be located on approximately 83.17 acres of property between Brawley and Calipatria directly west of the Union Pacific Rail line north of Rutherford Road, east of Jefferson Road, and west of Kershaw Road.

9. Legal Description:

APN-037-070-002; APN-037-070-003; APN-037-070-016; APN-037-070-004 (A Parcel Map Application is also being concurrently submitted to combine these parcels, as well as create a parcel for an electrical substation, which will likely be owned by IID.)

10. Project Description:

Canergy Rockwood Project (Canergy) is developing a chemical manufacturing Project to be constructed on the above-referenced parcels, such use being consistent with the current M-2N, medium industrial zoning by way of a Conditional Use Permit.

The Project will produce cellulosic derived products in the Imperial Valley and will convert energy cane into up to 36 million gallons per year (MGY) of fuel-grade ethanol, up to 485,000 tons of lignin per year, and up to 132,000 tons of liquid carbon dioxide per year. Energy cane, a member of the sugarcane family, is grown for its fiber, not sugar content like commercial sugar cane. It is these fibers, which are in any plant life, and which consist of cellulose (glucose or C6 sugars), hemicellulose (xylose or C5 sugars), and lignin. Canergy will derive its products with a conversion technology allowing these C5 and C6 sugars to be extracted. Energy Cane's high fiber biomass (up to 28% fiber) with low amounts of sucrose (8% sucrose sugars) differs from its family member of sugarcane, which has only 13% fiber and 18% sucrose sugars.

Traffic:

Traffic estimates are as follows based on operating 330 days a year:

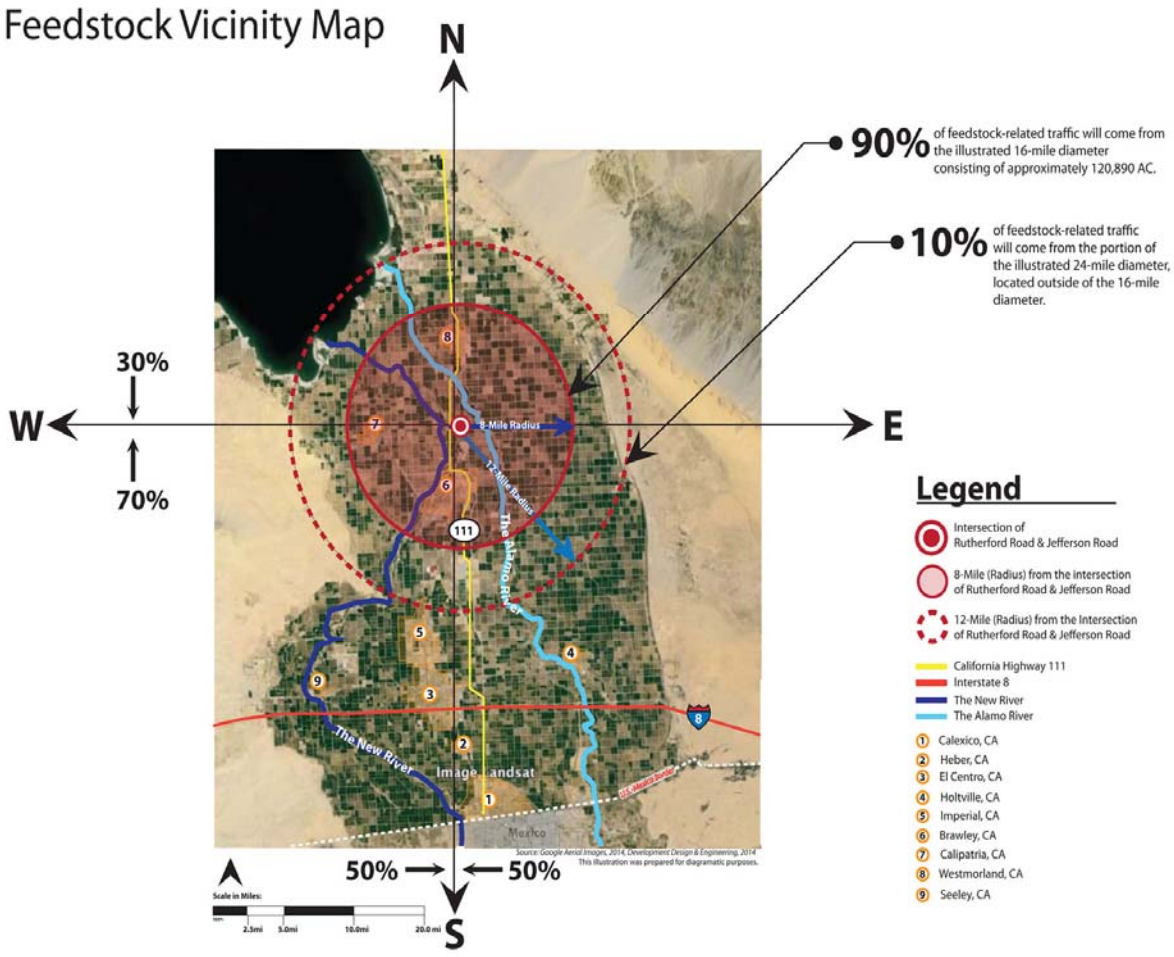
Servicing and shipping vehicles:

Food vendor trucks:	3 per day
FedEx truck:	1 per day
UPS truck:	1 per day
Service trucks:	5 per day

Conducting routine service or maintenance (i.e. fork lifts, cleaning services, computer and software maintenance)

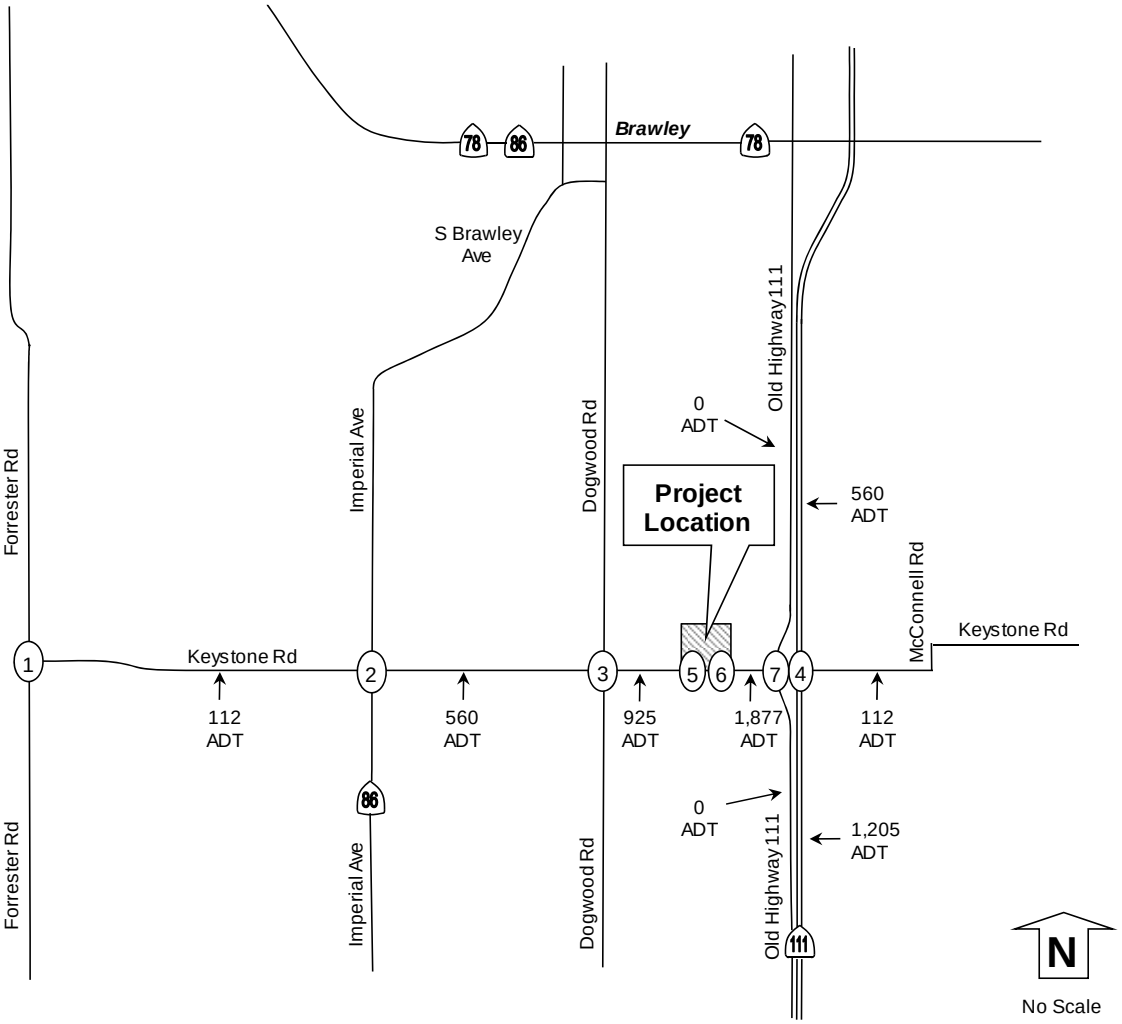
Feedstock delivery:

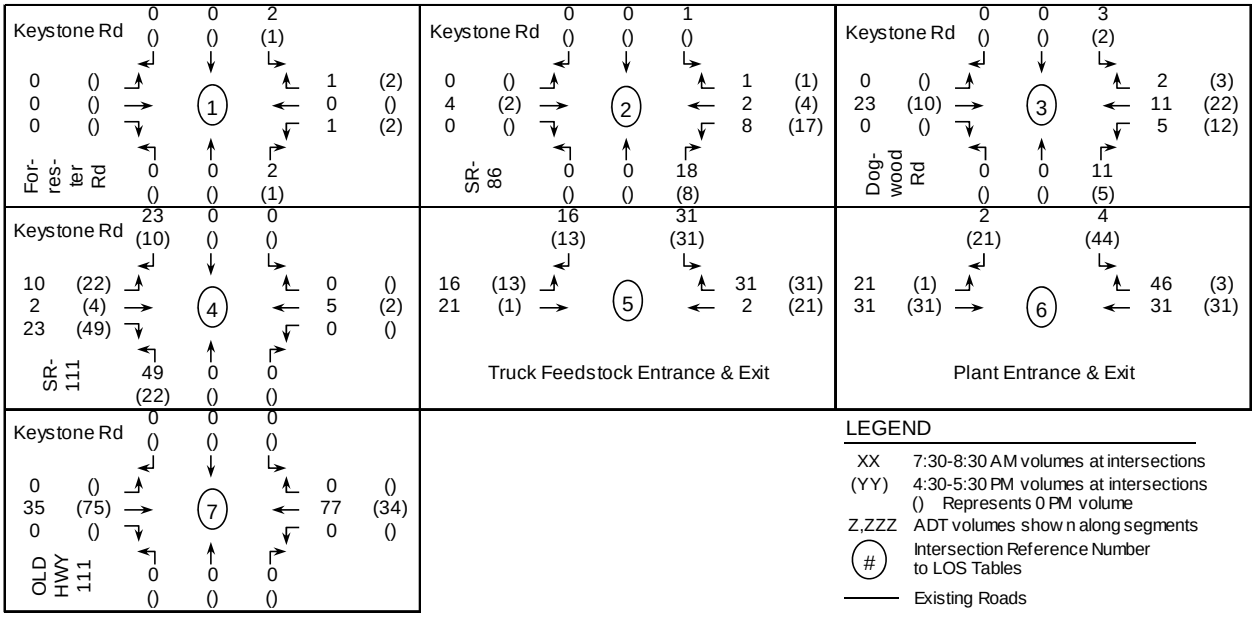
Energy cane delivery trucks	110 per day
Process chemical input delivery trucks	5 per day



Product shipping:

Figure 11: Operations Traffic (2015)





I-8 Forecasted Background Cumulative

Freeway	**I-8**				**I-8**			
Segment	Drew Rd to Forrester Rd				Forrester Rd to Imperial Ave			
Forecasted Year 2013								
ADT	14,400				17,600			
Peak Hour	A M		P M		A M		P M	
Direction	EB	WB	EB	WB	EB	WB	EB	WB
Number of Lanes	2	2	2	2	2	2	2	2
Capacity (1)	4,700	4,700	4,700	4,700	4,700	4,700	4,700	4,700
K Factor (2)	0.1076	0.0963	0.0917	0.1517	0.1076	0.0963	0.0917	0.1517
D Factor (3)	0.2616	0.7384	0.4419	0.5581	0.2616	0.7384	0.4419	0.5581
Truck Factor (4)	0.8376	0.8376	0.8376	0.8376	0.8376	0.8376	0.8376	0.8376
Peak Hour Volume	484	1,222	697	1,456	591	1,494	851	1,779
5% of background	**24**	**61**	**35**	**73**	**30**	**75**	**43**	**89**

Notes: (1) Capacity of 2,350 pcphpl from CALTRANS' Guide for the Preparation of Traffic Impact Studies, December 2002. (2) Latest K factor from Caltrans (based on 2007 report), which is the percentage of AADT in both directions. (3) Latest D factor from Caltrans (based on 2007 report), which when multiplied by K and ADT will provide peak hour volume. (4) Latest truck factor from Caltrans (based on 2007 report).

Solar Farm Average Traffic Generation Rates

Several cumualtive projects did not have techincal studies and therefore did not have reported cumulative project traffic generation. Therefore, an average traffic generation rate from other existing solar farm projects was calculated based on the number of megawatts (MW). The following tables listes the traffic generation assocaited with each cumulative project and the associated MW.

Project	Mega Watts	ADT	ADT / MW	AM IN	AM IN/MW	AM OUT	AM OUT/MW	PM IN	PM IN/MW	PM OUT	PM OUT/MW
Mount Signal Solar Farm I	200	522	2.61	162	0.81	0	0.00	0	0.00	162	0.81
Imperial Solar South	200	680	3.40	265	1.33	6	0.03	15	0.08	265	1.33
Imperial Solar West	250	750	3.00	300	1.20	6	0.02	15	0.06	300	1.20
Imperial Valley Solar	750	1736	2.31	772	1.03	0	0.00	0	0.00	772	1.03
Average Rates			**2.83**		**1.09**		**0.01**		**0.03**		**1.09**

The above rates were used to calcualted the traffic associated with the following cumualtive projects.

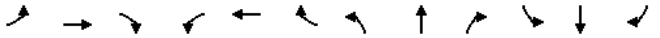
Proposed Cumulative Projects	MW	ADT	IN	OUT	IN	OUT
Calexico I-B	100	283	109	1	3	109
Calexico II-A	100	283	109	1	3	109
Calexico II-B	100	283	109	1	3	109
Iris Solar Farm	200	566	218	3	7	218
Silverleaf	160	453	175	2	5	175

Appendix M

Year 2013 + Project Construction Intersection LOS Calculations

AM 2013 + Project

1: Forrester Road & I-8 WB Ramp — HCM Unsignalized Intersection Capacity Analysis



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	145	0	121	4	31	0	0	117	64
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	158	0	132	4	34	0	0	127	70
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)						2						
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	270	204	162	204	239	34	197			34		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	270	204	162	204	239	34	197			34		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	79	100	87	100			100		
cM capacity (veh/h)	595	690	883	752	660	1040	1376			1578		

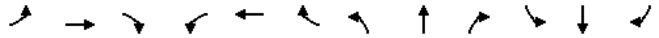
Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	289	38	197
Volume Left	158	4	0
Volume Right	132	0	70
cSH	1379	1376	1700
Volume to Capacity	0.21	0.00	0.12
Queue Length 95th (ft)	20	0	0
Control Delay (s)	10.1	0.9	0.0
Lane LOS	B	A	
Approach Delay (s)	10.1	0.9	0.0
Approach LOS	B		

Intersection Summary				
Average Delay	5.6			
Intersection Capacity Utilization	24.8%	ICU Level of Service	A	
Analysis Period (min)	15			

LOS Engineering, Inc. — Synchro

AM 2013 + Project

2: Forrester Road & I-8 EB Ramp — HCM Unsignalized Intersection Capacity Analysis



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	19	0	12	0	0	0	0	16	8	45	223	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	21	0	13	0	0	0	0	17	9	49	242	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)			2									
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	362	366	242	368	362	22	242			26		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	362	366	242	368	362	22	242			26		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	96	100	98	100	100	100	100			97		
cM capacity (veh/h)	580	545	796	565	548	1055	1324			1588		

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	34	26	291
Volume Left	21	0	49
Volume Right	13	9	0
cSH	946	1700	1588
Volume to Capacity	0.04	0.02	0.03
Queue Length 95th (ft)	3	0	2
Control Delay (s)	10.7	0.0	1.5
Lane LOS	B		A
Approach Delay (s)	10.7	0.0	1.5
Approach LOS	B		

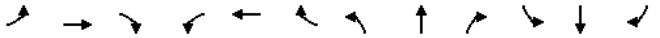
Intersection Summary				
Average Delay	2.2			
Intersection Capacity Utilization	30.9%	ICU Level of Service	A	
Analysis Period (min)	15			

LOS Engineering, Inc. — Synchro

AM 2013 + Project

3: Forrester Road & McCabe Rd

HCM Unsignalized Intersection Capacity Analysis



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	6	6	0	1	40	10	0	1	0	27	0	196
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	7	0	1	43	11	0	1	0	29	0	213
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	54			7			284	76	7	71	71	49
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	54			7			284	76	7	71	71	49
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	97	100	79
cM capacity (veh/h)	1551			1614			527	810	1076	916	816	1020

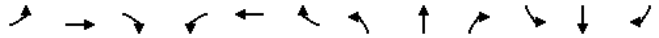
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	13	55	1	242
Volume Left	7	1	0	29
Volume Right	0	11	0	213
cSH	1551	1614	810	1006
Volume to Capacity	0.00	0.00	0.00	0.24
Queue Length 95th (ft)	0	0	0	24
Control Delay (s)	3.7	0.1	9.4	9.7
Lane LOS	A	A	A	A
Approach Delay (s)	3.7	0.1	9.4	9.7
Approach LOS			A	A

Intersection Summary				
Average Delay	7.8			
Intersection Capacity Utilization	31.1%	ICU Level of Service	A	
Analysis Period (min)	15			

AM 2013 + Project

4: Brockman Rd & Lyons Rd

HCM Unsignalized Intersection Capacity Analysis



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	11	0	7	2	1	2	16	5	61	177	3
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	12	0	8	2	1	2	17	5	66	192	3
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	353	354	194	357	353	20	196			23		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	353	354	194	357	353	20	196			23		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	98	100	99	100	100	100			96		
cM capacity (veh/h)	580	547	847	569	548	1058	1377			1592		

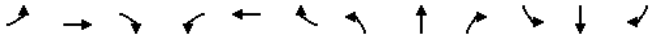
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	12	11	25	262
Volume Left	0	8	2	66
Volume Right	0	1	5	3
cSH	547	592	1377	1592
Volume to Capacity	0.02	0.02	0.00	0.04
Queue Length 95th (ft)	2	1	0	3
Control Delay (s)	11.7	11.2	0.7	2.1
Lane LOS	B	B	A	A
Approach Delay (s)	11.7	11.2	0.7	2.1
Approach LOS	B	B		

Intersection Summary				
Average Delay	2.7			
Intersection Capacity Utilization	32.6%	ICU Level of Service	A	
Analysis Period (min)	15			

AM 2013 + Project

5: Brockman Rd & Kubler Rd

HCM Unsignalized Intersection Capacity Analysis



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	2	0	1	2	4	3	19	10	6	167	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	2	0	1	2	4	3	21	11	7	182	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	233	233	182	228	227	26	182			32		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	233	233	182	228	227	26	182			32		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	100	100			100		
cM capacity (veh/h)	714	663	861	722	668	1050	1394			1581		

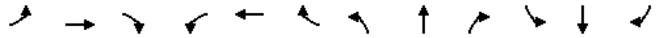
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	2	8	35	188
Volume Left	0	1	3	7
Volume Right	0	4	11	0
cSH	663	855	1394	1581
Volume to Capacity	0.00	0.01	0.00	0.00
Queue Length 95th (ft)	0	1	0	0
Control Delay (s)	10.4	9.3	0.7	0.3
Lane LOS	B	A	A	A
Approach Delay (s)	10.4	9.3	0.7	0.3
Approach LOS	B	A		

Intersection Summary				
Average Delay	0.7			
Intersection Capacity Utilization	20.1%	ICU Level of Service	A	
Analysis Period (min)	15			

AM 2013 + Project

6: Brockman Rd & SR-98

HCM Unsignalized Intersection Capacity Analysis



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	9	36	19	120	175	12	3	4	4	6	137	31
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	10	39	21	130	190	13	3	4	4	7	149	34
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	203			60			635	533	49	533	537	197
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	203			60			635	533	49	533	537	197
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			92			99	99	100	98	64	96
cM capacity (veh/h)	1368			1544			252	411	1019	420	409	844

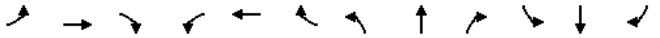
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	70	334	12	189
Volume Left	10	130	3	7
Volume Right	21	13	4	34
cSH	1368	1544	430	451
Volume to Capacity	0.01	0.08	0.03	0.42
Queue Length 95th (ft)	1	7	2	51
Control Delay (s)	1.1	3.4	13.6	18.6
Lane LOS	A	A	B	C
Approach Delay (s)	1.1	3.4	13.6	18.6
Approach LOS			B	C

Intersection Summary				
Average Delay	8.1			
Intersection Capacity Utilization	39.6%	ICU Level of Service	A	
Analysis Period (min)	15			

AM 2013 + Project

7: Brockman Rd & Anza Rd

HCM Unsignalized Intersection Capacity Analysis



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	1	4	0	0	13	5	0	0	0	16	0	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	4	0	0	14	5	0	0	0	17	0	5
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	20			4			29	26	4	23	23	17
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	20			4			29	26	4	23	23	17
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	98	100	99
cM capacity (veh/h)	1597			1617			975	867	1079	988	869	1062

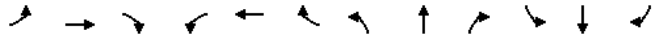
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	5	20	0	23
Volume Left	1	0	0	17
Volume Right	0	5	0	5
cSH	1597	1617	1700	1005
Volume to Capacity	0.00	0.00	0.00	0.02
Queue Length 95th (ft)	0	0	0	2
Control Delay (s)	1.5	0.0	0.0	8.7
Lane LOS	A		A	A
Approach Delay (s)	1.5	0.0	0.0	8.7
Approach LOS			A	A

Intersection Summary				
Average Delay	4.3			
Intersection Capacity Utilization	13.3%	ICU Level of Service	A	
Analysis Period (min)	15			

AM 2013 + Project

8: La Brucherie Rd & McCabe Rd

HCM Unsignalized Intersection Capacity Analysis



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	6	50	21	29	52	64	8	61	8	53	80	16
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	54	23	32	57	70	9	66	9	58	87	17

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	84	158	84	162
Volume Left (vph)	7	32	9	58
Volume Right (vph)	23	70	9	17
Hadj (s)	-0.11	-0.19	-0.01	0.04
Departure Headway (s)	4.6	4.4	4.7	4.6
Degree Utilization, x	0.11	0.19	0.11	0.21
Capacity (veh/h)	730	765	723	734
Control Delay (s)	8.1	8.5	8.2	8.8
Approach Delay (s)	8.1	8.5	8.2	8.8
Approach LOS	A	A	A	A

Intersection Summary				
Delay	8.5			
HCM Level of Service	A			
Intersection Capacity Utilization	36.4%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	4	8	12	3	13	1	7	15	0	6	155	36
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	9	13	3	14	1	8	16	0	7	168	39
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	15			22			168	46	15	53	52	15
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	15			22			168	46	15	53	52	15
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			99	98	100	99	80	96
cM capacity (veh/h)	1603			1594			645	842	1064	928	836	1065

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	26	18	24	214
Volume Left	4	3	8	7
Volume Right	13	1	0	39
cSH	1603	1594	767	873
Volume to Capacity	0.00	0.00	0.03	0.25
Queue Length 95th (ft)	0	0	2	24
Control Delay (s)	1.2	1.3	9.8	10.5
Lane LOS	A	A	A	B
Approach Delay (s)	1.2	1.3	9.8	10.5
Approach LOS			A	B

Intersection Summary				
Average Delay	9.0			
Intersection Capacity Utilization	20.8%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	1	1	2	1	1	1	39	18	1	3	131	18
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	1	2	1	1	1	42	20	1	3	142	20
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	265	264	152	266	273	20	162			21		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	265	264	152	266	273	20	162			21		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	100	97			100		
cM capacity (veh/h)	669	621	894	667	613	1058	1417			1595		

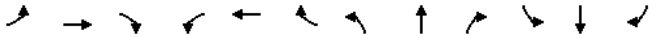
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	4	3	63	165
Volume Left	1	1	42	3
Volume Right	2	1	1	20
cSH	749	736	1417	1595
Volume to Capacity	0.01	0.00	0.03	0.00
Queue Length 95th (ft)	0	0	2	0
Control Delay (s)	9.8	9.9	5.2	0.2
Lane LOS	A	A	A	A
Approach Delay (s)	9.8	9.9	5.2	0.2
Approach LOS	A	A		

Intersection Summary				
Average Delay	1.8			
Intersection Capacity Utilization	24.8%	ICU Level of Service	A	
Analysis Period (min)	15			

AM 2013 + Project

11: Ferrell Rd & SR-98

HCM Unsignalized Intersection Capacity Analysis



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	2	30	5	72	260	38	4	9	1	8	97	43
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	33	5	78	283	41	4	10	1	9	105	47
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	324			38			599	520	35	505	502	303
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	324			38			599	520	35	505	502	303
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			95			99	98	100	98	76	94
cM capacity (veh/h)	1236			1572			305	437	1037	450	447	736

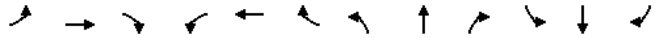
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	40	402	15	161
Volume Left	2	78	4	9
Volume Right	5	41	1	47
cSH	1236	1572	404	505
Volume to Capacity	0.00	0.05	0.04	0.32
Queue Length 95th (ft)	0	4	3	34
Control Delay (s)	0.4	1.8	14.3	15.4
Lane LOS	A	A	B	C
Approach Delay (s)	0.4	1.8	14.3	15.4
Approach LOS			B	C

Intersection Summary				
Average Delay	5.6			
Intersection Capacity Utilization	41.8%	ICU Level of Service	A	
Analysis Period (min)	15			

AM 2013 + Project

12: Ferrell Rd & Anza Rd

HCM Unsignalized Intersection Capacity Analysis



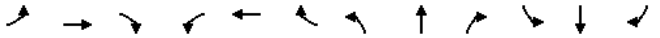
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	6	1	0	0	4	6	0	2	0	15	2	50
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	1	0	0	4	7	0	2	0	16	2	54
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	11			1			77	25	1	23	22	8
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	11			1			77	25	1	23	22	8
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	98	100	95
cM capacity (veh/h)	1608			1622			862	865	1083	984	868	1075

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	8	11	2	73
Volume Left	7	0	0	16
Volume Right	0	7	0	54
cSH	1608	1622	865	1046
Volume to Capacity	0.00	0.00	0.00	0.07
Queue Length 95th (ft)	0	0	0	6
Control Delay (s)	6.2	0.0	9.2	8.7
Lane LOS	A		A	A
Approach Delay (s)	6.2	0.0	9.2	8.7
Approach LOS			A	A

Intersection Summary				
Average Delay	7.5			
Intersection Capacity Utilization	22.5%	ICU Level of Service	A	
Analysis Period (min)	15			

PM 2013 + Project
1: Forrester Road & I-8 WB Ramp

HCM Unsignalized Intersection Capacity Analysis



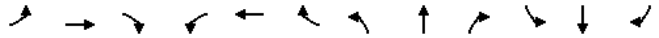
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	30	0	49	32	151	0	0	144	30
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	33	0	53	35	164	0	0	157	33
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)						2						
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	433	407	173	407	423	164	189			164		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	433	407	173	407	423	164	189			164		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	94	100	94	97			100		
cM capacity (veh/h)	491	520	871	544	509	880	1385			1414		

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	86	199	189
Volume Left	33	35	0
Volume Right	53	0	33
cSH	1419	1385	1700
Volume to Capacity	0.06	0.03	0.11
Queue Length 95th (ft)	5	2	0
Control Delay (s)	10.4	1.5	0.0
Lane LOS	B	A	
Approach Delay (s)	10.4	1.5	0.0
Approach LOS	B		

Intersection Summary					
Average Delay			2.5		
Intersection Capacity Utilization			32.5%	ICU Level of Service	A
Analysis Period (min)			15		

PM 2013 + Project
2: Forrester Road & I-8 EB Ramp

HCM Unsignalized Intersection Capacity Analysis



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	73	0	0	0	0	0	0	123	117	115	48	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	79	0	0	0	0	0	0	134	127	125	52	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)			2									
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	499	563	52	499	499	197	52			261		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	499	563	52	499	499	197	52			261		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	82	100	100	100	100	100	100			90		
cM capacity (veh/h)	446	394	1015	446	428	844	1554			1304		

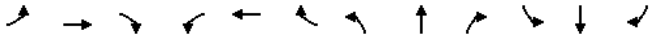
Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	79	261	177
Volume Left	79	0	125
Volume Right	0	127	0
cSH	442	1700	1304
Volume to Capacity	0.18	0.15	0.10
Queue Length 95th (ft)	16	0	8
Control Delay (s)	14.9	0.0	5.9
Lane LOS	B		A
Approach Delay (s)	14.9	0.0	5.9
Approach LOS	B		

Intersection Summary					
Average Delay			4.3		
Intersection Capacity Utilization			36.6%	ICU Level of Service	A
Analysis Period (min)			15		

PM 2013 + Project

3: Forrester Road & McCabe Rd

HCM Unsignalized Intersection Capacity Analysis



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	198	37	1	0	8	20	1	1	1	14	0	13
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	215	40	1	0	9	22	1	1	1	15	0	14
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	30			41			505	502	41	492	491	20
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	30			41			505	502	41	492	491	20
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	86			100			100	100	100	96	100	99
cM capacity (veh/h)	1582			1568			422	408	1030	435	413	1058

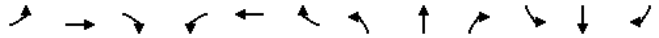
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	257	30	3	29
Volume Left	215	0	1	15
Volume Right	1	22	1	14
cSH	1582	1568	518	607
Volume to Capacity	0.14	0.00	0.01	0.05
Queue Length 95th (ft)	12	0	0	4
Control Delay (s)	6.6	0.0	12.0	11.2
Lane LOS	A		B	B
Approach Delay (s)	6.6	0.0	12.0	11.2
Approach LOS			B	B

Intersection Summary				
Average Delay	6.4			
Intersection Capacity Utilization	29.6%	ICU Level of Service	A	
Analysis Period (min)	15			

PM 2013 + Project

4: Brockman Rd & Lyons Rd

HCM Unsignalized Intersection Capacity Analysis



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	1	0	0	10	62	0	155	5	1	17	3
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	1	0	0	11	67	0	168	5	1	18	3
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	266	196	20	194	195	171	22			174		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	266	196	20	194	195	171	22			174		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	98	92	100			100		
cM capacity (veh/h)	625	699	1058	764	700	873	1594			1403		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	1	78	174	23
Volume Left	0	0	0	1
Volume Right	0	67	5	3
cSH	699	844	1594	1403
Volume to Capacity	0.00	0.09	0.00	0.00
Queue Length 95th (ft)	0	8	0	0
Control Delay (s)	10.2	9.7	0.0	0.4
Lane LOS	B	A		A
Approach Delay (s)	10.2	9.7	0.0	0.4
Approach LOS	B	A		

Intersection Summary				
Average Delay	2.8			
Intersection Capacity Utilization	19.5%	ICU Level of Service	A	
Analysis Period (min)	15			

PM 2013 + Project

5: Brockman Rd & Kubler Rd

HCM Unsignalized Intersection Capacity Analysis

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	4	0	3	10	2	4	0	156	4	3	7	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	0	3	11	2	4	0	170	4	3	8	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	191	188	8	189	186	172	8			174		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	191	188	8	189	186	172	8			174		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	100	99	100	100	100			100		
cM capacity (veh/h)	762	705	1075	767	707	872	1613			1403		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	8	17	174	11
Volume Left	4	11	0	3
Volume Right	3	4	4	0
cSH	870	782	1613	1403
Volume to Capacity	0.01	0.02	0.00	0.00
Queue Length 95th (ft)	1	2	0	0
Control Delay (s)	9.2	9.7	0.0	2.3
Lane LOS	A	A		A
Approach Delay (s)	9.2	9.7	0.0	2.3
Approach LOS	A	A		

Intersection Summary				
Average Delay			1.3	
Intersection Capacity Utilization			18.5%	ICU Level of Service
Analysis Period (min)			15	

PM 2013 + Project

6: Brockman Rd & SR-98

HCM Unsignalized Intersection Capacity Analysis

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	36	140	6	0	31	17	16	118	92	2	10	7
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	39	152	7	0	34	18	17	128	100	2	11	8
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	52			159			290	286	155	441	280	43
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	52			159			290	286	155	441	280	43
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			100			97	79	89	99	98	99
cM capacity (veh/h)	1554			1421			636	608	890	384	613	1027

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	198	52	246	21
Volume Left	39	0	17	2
Volume Right	7	18	100	8
cSH	1554	1421	701	670
Volume to Capacity	0.03	0.00	0.35	0.03
Queue Length 95th (ft)	2	0	39	2
Control Delay (s)	1.6	0.0	12.9	10.5
Lane LOS	A		B	B
Approach Delay (s)	1.6	0.0	12.9	10.5
Approach LOS			B	B

Intersection Summary				
Average Delay			7.2	
Intersection Capacity Utilization			38.4%	ICU Level of Service
Analysis Period (min)			15	

PM 2013 + Project
7: Brockman Rd & Anza Rd

HCM Unsignalized Intersection Capacity Analysis

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	3	11	0	0	6	19	0	0	0	11	0	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	12	0	0	7	21	0	0	0	12	0	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	27			12			36	46	12	35	35	17
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	27			12			36	46	12	35	35	17
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	99	100	100
cM capacity (veh/h)	1587			1607			967	844	1069	969	855	1062

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	15	27	0	13
Volume Left	3	0	0	12
Volume Right	0	21	0	1
cSH	1587	1607	1700	976
Volume to Capacity	0.00	0.00	0.00	0.01
Queue Length 95th (ft)	0	0	0	1
Control Delay (s)	1.6	0.0	0.0	8.7
Lane LOS	A		A	A
Approach Delay (s)	1.6	0.0	0.0	8.7
Approach LOS			A	A

Intersection Summary				
Average Delay	2.5			
Intersection Capacity Utilization	13.3%	ICU Level of Service	A	
Analysis Period (min)	15			

PM 2013 + Project
8: La Brucherie Rd & McCabe Rd

HCM Unsignalized Intersection Capacity Analysis

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	29	105	12	3	57	83	25	96	28	87	56	12
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	32	114	13	3	62	90	27	104	30	95	61	13

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	159	155	162	168
Volume Left (vph)	32	3	27	95
Volume Right (vph)	13	90	30	13
Hadj (s)	0.02	-0.31	-0.05	0.10
Departure Headway (s)	5.0	4.7	4.9	5.0
Degree Utilization, x	0.22	0.20	0.22	0.23
Capacity (veh/h)	668	711	687	668
Control Delay (s)	9.4	8.8	9.2	9.5
Approach Delay (s)	9.4	8.8	9.2	9.5
Approach LOS	A	A	A	A

Intersection Summary				
Delay	9.2			
HCM Level of Service	A			
Intersection Capacity Utilization	46.1%	ICU Level of Service	A	
Analysis Period (min)	15			

PM 2013 + Project

9: La Brucherie Rd & Wahl Rd — HCM Unsignalized Intersection Capacity Analysis

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	33	12	2	1	5	3	6	125	7	17	31	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	36	13	2	1	5	3	7	136	8	18	34	3
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	9			15			115	97	14	171	96	7
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	9			15			115	97	14	171	96	7
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			99	82	99	97	96	100
cM capacity (veh/h)	1611			1603			816	775	1066	670	776	1075

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	51	10	150	55
Volume Left	36	1	7	18
Volume Right	2	3	8	3
cSH	1611	1603	788	748
Volume to Capacity	0.02	0.00	0.19	0.07
Queue Length 95th (ft)	2	0	17	6
Control Delay (s)	5.2	0.8	10.6	10.2
Lane LOS	A	A	B	B
Approach Delay (s)	5.2	0.8	10.6	10.2
Approach LOS			B	B

Intersection Summary				
Average Delay	9.1			
Intersection Capacity Utilization	25.4%	ICU Level of Service	A	
Analysis Period (min)	15			

PM 2013 + Project

10: Ferrell Rd/La Brucherie Rd & Kubler Rd — HCM Unsignalized Intersection Capacity Analysis

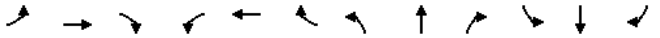
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	18	3	28	2	0	2	14	120	3	1	33	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	20	3	30	2	0	2	15	130	3	1	36	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	203	202	36	233	201	132	36			134		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	203	202	36	233	201	132	36			134		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	100	97	100	100	100	99			100		
cM capacity (veh/h)	748	687	1037	693	688	917	1575			1451		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	53	4	149	37
Volume Left	20	2	15	1
Volume Right	30	2	3	0
cSH	884	789	1575	1451
Volume to Capacity	0.06	0.01	0.01	0.00
Queue Length 95th (ft)	5	0	1	0
Control Delay (s)	9.3	9.6	0.8	0.2
Lane LOS	A	A	A	A
Approach Delay (s)	9.3	9.6	0.8	0.2
Approach LOS	A	A		

Intersection Summary				
Average Delay	2.7			
Intersection Capacity Utilization	23.0%	ICU Level of Service	A	
Analysis Period (min)	15			

PM 2013 + Project
11: Ferrell Rd & SR-98

HCM Unsignalized Intersection Capacity Analysis



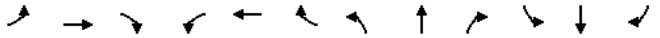
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	31	215	1	11	32	14	3	83	43	40	23	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	34	234	1	12	35	15	3	90	47	43	25	3
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	50			235			384	376	234	460	368	42
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	50			235			384	376	234	460	368	42
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			99			99	83	94	89	95	100
cM capacity (veh/h)	1557			1333			540	539	805	411	544	1028

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	268	62	140	72
Volume Left	34	12	3	43
Volume Right	1	15	47	3
cSH	1557	1333	605	463
Volume to Capacity	0.02	0.01	0.23	0.16
Queue Length 95th (ft)	2	1	22	14
Control Delay (s)	1.1	1.5	12.7	14.2
Lane LOS	A	A	B	B
Approach Delay (s)	1.1	1.5	12.7	14.2
Approach LOS			B	B

Intersection Summary				
Average Delay	5.9			
Intersection Capacity Utilization	36.5%	ICU Level of Service	A	
Analysis Period (min)	15			

PM 2013 + Project
12: Ferrell Rd & Anza Rd

HCM Unsignalized Intersection Capacity Analysis



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	50	16	1	0	3	3	0	1	0	11	0	9
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	54	17	1	0	3	3	0	1	0	12	0	10
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	7			18			141	133	18	132	132	5
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	7			18			141	133	18	132	132	5
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			100			100	100	100	99	100	99
cM capacity (veh/h)	1614			1598			800	732	1061	818	733	1078

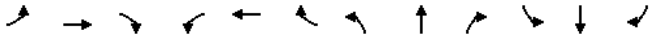
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	73	7	1	22
Volume Left	54	0	0	12
Volume Right	1	3	0	10
cSH	1614	1598	732	917
Volume to Capacity	0.03	0.00	0.00	0.02
Queue Length 95th (ft)	3	0	0	2
Control Delay (s)	5.5	0.0	9.9	9.0
Lane LOS	A		A	A
Approach Delay (s)	5.5	0.0	9.9	9.0
Approach LOS			A	A

Intersection Summary				
Average Delay	6.0			
Intersection Capacity Utilization	24.8%	ICU Level of Service	A	
Analysis Period (min)	15			

Appendix N

Year 2013 + Project Construction + Cumulative Intersection LOS Calculations

AM 2013 + Cumulative
1: Forrester Road & I-8 WB Ramp
HCM Unsignalized Intersection Capacity Analysis

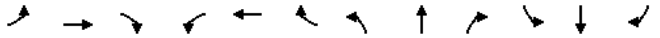


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	231	0	121	34	43	0	0	171	109
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	251	0	132	37	47	0	0	186	118
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)						2						
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	432	366	245	366	425	47	304			47		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	432	366	245	366	425	47	304			47		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	56	100	87	97			100		
cM capacity (veh/h)	455	546	794	577	506	1023	1256			1561		

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	383	84	304
Volume Left	251	37	0
Volume Right	132	0	118
cSH	879	1256	1700
Volume to Capacity	0.44	0.03	0.18
Queue Length 95th (ft)	56	2	0
Control Delay (s)	13.6	3.6	0.0
Lane LOS	B	A	
Approach Delay (s)	13.6	3.6	0.0
Approach LOS	B		

Intersection Summary				
Average Delay	7.1			
Intersection Capacity Utilization	42.6%	ICU Level of Service	A	
Analysis Period (min)	15			

AM 2013 + Cumulative
2: Forrester Road & I-8 EB Ramp
HCM Unsignalized Intersection Capacity Analysis



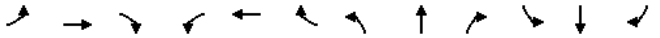
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	19	0	4	0	0	0	0	47	8	45	363	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	21	0	4	0	0	0	0	51	9	49	395	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)			2									
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	548	552	395	550	548	55	395			60		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	548	552	395	550	548	55	395			60		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	95	100	99	100	100	100	100			97		
cM capacity (veh/h)	436	428	655	432	430	1011	1164			1544		

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	25	60	443
Volume Left	21	0	49
Volume Right	4	9	0
cSH	528	1700	1544
Volume to Capacity	0.05	0.04	0.03
Queue Length 95th (ft)	4	0	2
Control Delay (s)	13.1	0.0	1.1
Lane LOS	B		A
Approach Delay (s)	13.1	0.0	1.1
Approach LOS	B		

Intersection Summary				
Average Delay	1.5			
Intersection Capacity Utilization	38.3%	ICU Level of Service	A	
Analysis Period (min)	15			

AM 2013 + Cumulative
3: Forrester Road & McCabe Rd

HCM Unsignalized Intersection Capacity Analysis



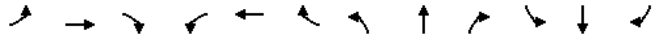
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	4	6	0	1	30	25	0	1	0	186	0	180
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	7	0	1	33	27	0	1	0	202	0	196
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	60			7			259	77	7	64	64	46
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	60			7			259	77	7	64	64	46
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	78	100	81
cM capacity (veh/h)	1544			1614			560	810	1076	927	824	1023

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	11	61	1	398
Volume Left	4	1	0	202
Volume Right	0	27	0	196
cSH	1544	1614	810	972
Volume to Capacity	0.00	0.00	0.00	0.41
Queue Length 95th (ft)	0	0	0	51
Control Delay (s)	2.9	0.1	9.4	11.2
Lane LOS	A	A	A	B
Approach Delay (s)	2.9	0.1	9.4	11.2
Approach LOS			A	B

Intersection Summary					
Average Delay	9.6				
Intersection Capacity Utilization	38.0%	ICU Level of Service		A	
Analysis Period (min)	15				

AM 2013 + Cumulative
4: Brockman Rd & Lyons Rd

HCM Unsignalized Intersection Capacity Analysis



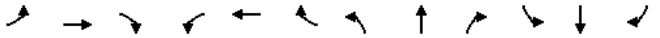
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	3	0	3	2	0	2	15	1	0	212	3
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	3	0	3	2	0	2	16	1	0	230	3
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	254	254	232	255	255	17	234			17		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	254	254	232	255	255	17	234			17		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	99	100	100	100	100	100			100		
cM capacity (veh/h)	696	649	807	695	648	1062	1334			1600		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	3	5	20	234
Volume Left	0	3	2	0
Volume Right	0	0	1	3
cSH	649	675	1334	1600
Volume to Capacity	0.01	0.01	0.00	0.00
Queue Length 95th (ft)	0	1	0	0
Control Delay (s)	10.6	10.4	0.9	0.0
Lane LOS	B	B	A	
Approach Delay (s)	10.6	10.4	0.9	0.0
Approach LOS	B	B		

Intersection Summary					
Average Delay	0.4				
Intersection Capacity Utilization	21.3%	ICU Level of Service		A	
Analysis Period (min)	15				

AM 2013 + Cumulative
5: Brockman Rd & Kubler Rd

HCM Unsignalized Intersection Capacity Analysis



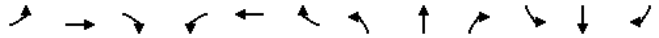
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	1	0	1	2	0	3	18	5	34	170	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	1	0	1	2	0	3	20	5	37	185	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	289	290	185	288	288	22	185			25		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	289	290	185	288	288	22	185			25		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	100	100			98		
cM capacity (veh/h)	649	604	857	650	606	1055	1390			1589		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	1	3	28	222
Volume Left	0	1	3	37
Volume Right	0	0	5	0
cSH	604	620	1390	1589
Volume to Capacity	0.00	0.01	0.00	0.02
Queue Length 95th (ft)	0	0	0	2
Control Delay (s)	11.0	10.8	0.9	1.4
Lane LOS	B	B	A	A
Approach Delay (s)	11.0	10.8	0.9	1.4
Approach LOS	B	B		

Intersection Summary				
Average Delay	1.5			
Intersection Capacity Utilization	26.3%	ICU Level of Service	A	
Analysis Period (min)	15			

AM 2013 + Cumulative
6: Brockman Rd & SR-98

HCM Unsignalized Intersection Capacity Analysis



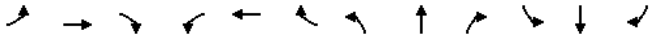
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	8	40	50	120	179	12	3	4	4	2	148	31
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	43	54	130	195	13	3	4	4	2	161	34
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	208			98			664	557	71	557	577	201
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	208			98			664	557	71	557	577	201
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			91			99	99	100	99	58	96
cM capacity (veh/h)	1363			1495			227	398	992	405	388	840

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	107	338	12	197
Volume Left	9	130	3	2
Volume Right	54	13	4	34
cSH	1363	1495	403	427
Volume to Capacity	0.01	0.09	0.03	0.46
Queue Length 95th (ft)	0	7	2	59
Control Delay (s)	0.7	3.4	14.2	20.4
Lane LOS	A	A	B	C
Approach Delay (s)	0.7	3.4	14.2	20.4
Approach LOS			B	C

Intersection Summary				
Average Delay	8.3			
Intersection Capacity Utilization	40.0%	ICU Level of Service	A	
Analysis Period (min)	15			

AM 2013 + Cumulative
7: Brockman Rd & Anza Rd

HCM Unsignalized Intersection Capacity Analysis



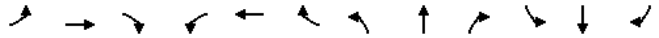
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	1	4	0	0	13	5	0	0	0	68	0	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	4	0	0	14	5	0	0	0	74	0	5
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	20			4			29	26	4	23	23	17
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	20			4			29	26	4	23	23	17
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	93	100	99
cM capacity (veh/h)	1597			1617			975	867	1079	988	869	1062

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	5	20	0	79
Volume Left	1	0	0	74
Volume Right	0	5	0	5
cSH	1597	1617	1700	993
Volume to Capacity	0.00	0.00	0.00	0.08
Queue Length 95th (ft)	0	0	0	7
Control Delay (s)	1.5	0.0	0.0	8.9
Lane LOS	A		A	A
Approach Delay (s)	1.5	0.0	0.0	8.9
Approach LOS			A	A

Intersection Summary				
Average Delay	6.9			
Intersection Capacity Utilization	14.1%	ICU Level of Service	A	
Analysis Period (min)	15			

AM 2013 + Cumulative
8: La Brucherie Rd & McCabe Rd

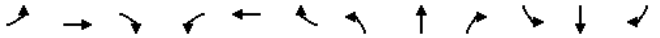
HCM Unsignalized Intersection Capacity Analysis



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	6	92	159	74	72	88	11	61	10	105	138	10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	100	173	80	78	96	12	66	11	114	150	11

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	279	254	89	275
Volume Left (vph)	7	80	12	114
Volume Right (vph)	173	96	11	11
Hadj (s)	-0.33	-0.13	-0.01	0.09
Departure Headway (s)	5.0	5.3	5.8	5.6
Degree Utilization, x	0.39	0.37	0.14	0.42
Capacity (veh/h)	663	634	531	600
Control Delay (s)	11.2	11.3	9.8	12.6
Approach Delay (s)	11.2	11.3	9.8	12.6
Approach LOS	B	B	A	B

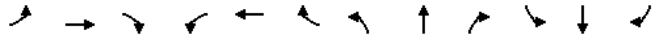
Intersection Summary				
Delay	11.5			
HCM Level of Service	B			
Intersection Capacity Utilization	58.5%	ICU Level of Service	B	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	2	8	12	3	13	1	7	19	0	6	426	6
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	9	13	3	14	1	8	21	0	7	463	7
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	15			22			279	41	15	51	47	15
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	15			22			279	41	15	51	47	15
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			98	98	100	99	45	99
cM capacity (veh/h)	1603			1594			377	848	1064	928	841	1065

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	24	18	28	476
Volume Left	2	3	8	7
Volume Right	13	1	0	7
cSH	1603	1594	634	845
Volume to Capacity	0.00	0.00	0.04	0.56
Queue Length 95th (ft)	0	0	3	90
Control Delay (s)	0.7	1.3	10.9	14.6
Lane LOS	A	A	B	B
Approach Delay (s)	0.7	1.3	10.9	14.6
Approach LOS			B	B

Intersection Summary				
Average Delay	13.4			
Intersection Capacity Utilization	33.3%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	1	1	1	1	1	1	25	19	11	23	348	52
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	1	1	1	1	1	27	21	12	25	378	57
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	539	543	407	539	566	27	435			33		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	539	543	407	539	566	27	435			33		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	100	98			98		
cM capacity (veh/h)	438	429	644	438	417	1049	1125			1579		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	3	3	60	460
Volume Left	1	1	27	25
Volume Right	1	1	12	57
cSH	487	532	1125	1579
Volume to Capacity	0.01	0.01	0.02	0.02
Queue Length 95th (ft)	1	0	2	1
Control Delay (s)	12.4	11.8	3.9	0.5
Lane LOS	B	B	A	A
Approach Delay (s)	12.4	11.8	3.9	0.5
Approach LOS	B	B		

Intersection Summary				
Average Delay	1.1			
Intersection Capacity Utilization	32.9%	ICU Level of Service	A	
Analysis Period (min)	15			

AM 2013 + Cumulative
11: Ferrell Rd & SR-98

HCM Unsignalized Intersection Capacity Analysis

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	2	30	5	95	251	50	4	8	2	17	85	43
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	33	5	103	273	54	4	9	2	18	92	47
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	327			38			639	573	35	553	549	300
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	327			38			639	573	35	553	549	300
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			93			98	98	100	96	78	94
cM capacity (veh/h)	1232			1572			287	401	1037	413	414	740

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	40	430	15	158
Volume Left	2	103	4	18
Volume Right	5	54	2	47
cSH	1232	1572	390	476
Volume to Capacity	0.00	0.07	0.04	0.33
Queue Length 95th (ft)	0	5	3	36
Control Delay (s)	0.4	2.2	14.6	16.3
Lane LOS	A	A	B	C
Approach Delay (s)	0.4	2.2	14.6	16.3
Approach LOS			B	C

Intersection Summary				
Average Delay	5.9			
Intersection Capacity Utilization	43.6%	ICU Level of Service	A	
Analysis Period (min)	15			

AM 2013 + Cumulative
12: Ferrell Rd & Anza Rd

HCM Unsignalized Intersection Capacity Analysis

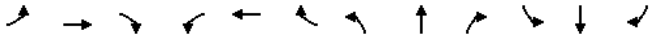
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	48	1	0	0	4	6	0	2	0	15	2	19
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	52	1	0	0	4	7	0	2	0	16	2	21
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	11			1			135	116	1	114	113	8
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	11			1			135	116	1	114	113	8
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			100			100	100	100	98	100	98
cM capacity (veh/h)	1608			1622			798	749	1083	840	752	1075

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	53	11	2	39
Volume Left	52	0	0	16
Volume Right	0	7	0	21
cSH	1608	1622	749	942
Volume to Capacity	0.03	0.00	0.00	0.04
Queue Length 95th (ft)	3	0	0	3
Control Delay (s)	7.2	0.0	9.8	9.0
Lane LOS	A		A	A
Approach Delay (s)	7.2	0.0	9.8	9.0
Approach LOS			A	A

Intersection Summary				
Average Delay	7.2			
Intersection Capacity Utilization	24.8%	ICU Level of Service	A	
Analysis Period (min)	15			

PM 2013 + Cumulative
1: Forrester Road & I-8 WB Ramp

HCM Unsignalized Intersection Capacity Analysis



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	33	0	49	52	257	0	0	166	32
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	36	0	53	57	279	0	0	180	35
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)						2						
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	617	590	198	590	608	279	215			279		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	617	590	198	590	608	279	215			279		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	91	100	93	96			100		
cM capacity (veh/h)	362	403	843	406	393	759	1355			1283		

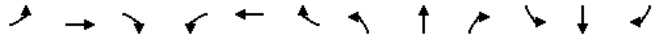
Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	89	336	215
Volume Left	36	57	0
Volume Right	53	0	35
cSH	1008	1355	1700
Volume to Capacity	0.09	0.04	0.13
Queue Length 95th (ft)	7	3	0
Control Delay (s)	12.0	1.6	0.0
Lane LOS	B	A	
Approach Delay (s)	12.0	1.6	0.0
Approach LOS	B		

Intersection Summary					
Average Delay	2.5				
Intersection Capacity Utilization	40.4%	ICU Level of Service		A	
Analysis Period (min)	15				

LOS Engineering, Inc. Synchro

PM 2013 + Cumulative
2: Forrester Road & I-8 EB Ramp

HCM Unsignalized Intersection Capacity Analysis



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	118	0	31	0	0	0	0	197	203	115	73	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	128	0	34	0	0	0	0	214	221	125	79	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)			2									
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	654	764	79	671	654	324	79			435		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	654	764	79	671	654	324	79			435		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	63	100	97	100	100	100	100			89		
cM capacity (veh/h)	348	297	981	327	343	717	1519			1125		

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	162	435	204
Volume Left	128	0	125
Volume Right	34	221	0
cSH	439	1700	1125
Volume to Capacity	0.37	0.26	0.11
Queue Length 95th (ft)	42	0	9
Control Delay (s)	18.7	0.0	5.6
Lane LOS	C		A
Approach Delay (s)	18.7	0.0	5.6
Approach LOS	C		

Intersection Summary					
Average Delay	5.2				
Intersection Capacity Utilization	49.5%	ICU Level of Service		A	
Analysis Period (min)	15				

LOS Engineering, Inc. Synchro

PM 2013 + Cumulative
3: Forrester Road & McCabe Rd

HCM Unsignalized Intersection Capacity Analysis

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	182	27	1	0	8	202	1	1	1	40	0	12
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	198	29	1	0	9	220	1	1	1	43	0	13
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	228			30			557	654	30	546	545	118
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	228			30			557	654	30	546	545	118
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	85			100			100	100	100	89	100	99
cM capacity (veh/h)	1340			1582			386	329	1045	397	380	933

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	228	228	3	57
Volume Left	198	0	1	43
Volume Right	1	220	1	13
cSH	1340	1582	455	457
Volume to Capacity	0.15	0.00	0.01	0.12
Queue Length 95th (ft)	13	0	1	10
Control Delay (s)	7.2	0.0	13.0	14.0
Lane LOS	A		B	B
Approach Delay (s)	7.2	0.0	13.0	14.0
Approach LOS			B	B

Intersection Summary				
Average Delay	4.8			
Intersection Capacity Utilization	40.6%	ICU Level of Service	A	
Analysis Period (min)	15			

PM 2013 + Cumulative
4: Brockman Rd & Lyons Rd

HCM Unsignalized Intersection Capacity Analysis

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	1	0	0	2	1	0	190	5	0	17	3
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	1	0	0	2	1	0	207	5	0	18	3
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	232	232	20	230	231	209	22			212		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	232	232	20	230	231	209	22			212		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	100	100			100		
cM capacity (veh/h)	721	668	1058	724	669	831	1594			1358		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	1	3	212	22
Volume Left	0	0	0	0
Volume Right	0	1	5	3
cSH	668	715	1594	1358
Volume to Capacity	0.00	0.00	0.00	0.00
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	10.4	10.1	0.0	0.0
Lane LOS	B	B		
Approach Delay (s)	10.4	10.1	0.0	0.0
Approach LOS	B	B		

Intersection Summary				
Average Delay	0.2			
Intersection Capacity Utilization	20.3%	ICU Level of Service	A	
Analysis Period (min)	15			

PM 2013 + Cumulative
5: Brockman Rd & Kubler Rd

HCM Unsignalized Intersection Capacity Analysis

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	4	0	3	5	1	36	0	159	4	3	7	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	0	3	5	1	39	0	173	4	3	8	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	229	191	8	192	189	175	8			177		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	229	191	8	192	189	175	8			177		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	100	99	100	95	100			100		
cM capacity (veh/h)	692	702	1075	764	704	868	1613			1399		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	8	46	177	11
Volume Left	4	5	0	3
Volume Right	3	39	4	0
cSH	816	850	1613	1399
Volume to Capacity	0.01	0.05	0.00	0.00
Queue Length 95th (ft)	1	4	0	0
Control Delay (s)	9.5	9.5	0.0	2.3
Lane LOS	A	A		A
Approach Delay (s)	9.5	9.5	0.0	2.3
Approach LOS	A	A		

Intersection Summary				
Average Delay			2.2	
Intersection Capacity Utilization			18.6%	ICU Level of Service
Analysis Period (min)			15	

PM 2013 + Cumulative
6: Brockman Rd & SR-98

HCM Unsignalized Intersection Capacity Analysis

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	36	144	7	0	35	3	47	129	92	2	11	6
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	39	157	8	0	38	3	51	140	100	2	12	7
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	41			164			291	280	160	448	282	40
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	41			164			291	280	160	448	282	40
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			92	77	89	99	98	99
cM capacity (veh/h)	1568			1414			635	613	885	373	611	1032

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	203	41	291	21
Volume Left	39	0	51	2
Volume Right	8	3	100	7
cSH	1568	1414	690	651
Volume to Capacity	0.02	0.00	0.42	0.03
Queue Length 95th (ft)	2	0	53	2
Control Delay (s)	1.6	0.0	14.0	10.7
Lane LOS	A		B	B
Approach Delay (s)	1.6	0.0	14.0	10.7
Approach LOS			B	B

Intersection Summary				
Average Delay			8.3	
Intersection Capacity Utilization			45.0%	ICU Level of Service
Analysis Period (min)			15	

PM 2013 + Cumulative
7: Brockman Rd & Anza Rd

HCM Unsignalized Intersection Capacity Analysis

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	3	11	0	0	6	71	0	0	0	13	0	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	12	0	0	7	77	0	0	0	14	0	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	84			12			65	102	12	64	64	45
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	84			12			65	102	12	64	64	45
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	98	100	100
cM capacity (veh/h)	1513			1607			927	786	1069	929	825	1025

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	15	84	0	15
Volume Left	3	0	0	14
Volume Right	0	77	0	1
cSH	1513	1607	1700	935
Volume to Capacity	0.00	0.00	0.00	0.02
Queue Length 95th (ft)	0	0	0	1
Control Delay (s)	1.6	0.0	0.0	8.9
Lane LOS	A		A	A
Approach Delay (s)	1.6	0.0	0.0	8.9
Approach LOS			A	A

Intersection Summary				
Average Delay	1.4			
Intersection Capacity Utilization	14.7%	ICU Level of Service	A	
Analysis Period (min)	15			

PM 2013 + Cumulative
8: La Brucherie Rd & McCabe Rd

HCM Unsignalized Intersection Capacity Analysis

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	23	132	17	4	96	117	179	154	73	106	58	12
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	25	143	18	4	104	127	195	167	79	115	63	13

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	187	236	441	191
Volume Left (vph)	25	4	195	115
Volume Right (vph)	18	127	79	13
Hadj (s)	0.00	-0.29	0.01	0.11
Departure Headway (s)	6.3	5.9	5.6	6.1
Degree Utilization, x	0.32	0.38	0.69	0.33
Capacity (veh/h)	495	546	614	516
Control Delay (s)	12.2	12.5	19.9	12.1
Approach Delay (s)	12.2	12.5	19.9	12.1
Approach LOS	B	B	C	B

Intersection Summary				
Delay	15.5			
HCM Level of Service	C			
Intersection Capacity Utilization	52.6%	ICU Level of Service	A	
Analysis Period (min)	15			

PM 2013 + Cumulative
9: La Brucherie Rd & Wahl Rd

HCM Unsignalized Intersection Capacity Analysis

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	3	12	2	1	5	3	6	412	7	17	41	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	13	2	1	5	3	7	448	8	18	45	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	9			15			53	32	14	261	31	7
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	9			15			53	32	14	261	31	7
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			99	48	99	95	95	100
cM capacity (veh/h)	1611			1603			905	859	1066	403	859	1075

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	18	10	462	64
Volume Left	3	1	7	18
Volume Right	2	3	8	1
cSH	1611	1603	862	650
Volume to Capacity	0.00	0.00	0.54	0.10
Queue Length 95th (ft)	0	0	81	8
Control Delay (s)	1.3	0.8	13.9	11.1
Lane LOS	A	A	B	B
Approach Delay (s)	1.3	0.8	13.9	11.1
Approach LOS			B	B

Intersection Summary					
Average Delay	12.9				
Intersection Capacity Utilization	32.6%	ICU Level of Service		A	
Analysis Period (min)	15				

PM 2013 + Cumulative
10: Ferrell Rd/La Brucherie Rd & Kubler Rd

HCM Unsignalized Intersection Capacity Analysis

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	52	3	14	12	0	22	13	268	3	2	40	2
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	57	3	15	13	0	24	14	291	3	2	43	2
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	394	372	45	387	371	293	46			295		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	394	372	45	387	371	293	46			295		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	90	99	99	98	100	97	99			100		
cM capacity (veh/h)	543	552	1025	556	553	746	1562			1267		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	75	37	309	48
Volume Left	57	13	14	2
Volume Right	15	24	3	2
cSH	601	666	1562	1267
Volume to Capacity	0.12	0.06	0.01	0.00
Queue Length 95th (ft)	11	4	1	0
Control Delay (s)	11.8	10.7	0.4	0.4
Lane LOS	B	B	A	A
Approach Delay (s)	11.8	10.7	0.4	0.4
Approach LOS	B	B		

Intersection Summary					
Average Delay	3.1				
Intersection Capacity Utilization	33.2%	ICU Level of Service		A	
Analysis Period (min)	15				

PM 2013 + Cumulative
11: Ferrell Rd & SR-98

HCM Unsignalized Intersection Capacity Analysis

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	31	206	1	12	32	13	3	71	66	42	22	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	34	224	1	13	35	14	3	77	72	46	24	3
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	49			225			375	367	224	470	360	42
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	49			225			375	367	224	470	360	42
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			99			99	86	91	89	96	100
cM capacity (veh/h)	1558			1344			548	544	815	400	549	1029

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	259	62	152	73
Volume Left	34	13	3	46
Volume Right	1	14	72	3
cSH	1558	1344	646	453
Volume to Capacity	0.02	0.01	0.24	0.16
Queue Length 95th (ft)	2	1	23	14
Control Delay (s)	1.1	1.7	12.3	14.5
Lane LOS	A	A	B	B
Approach Delay (s)	1.1	1.7	12.3	14.5
Approach LOS			B	B

Intersection Summary				
Average Delay	6.1			
Intersection Capacity Utilization	36.5%	ICU Level of Service	A	
Analysis Period (min)	15			

PM 2013 + Cumulative
12: Ferrell Rd & Anza Rd

HCM Unsignalized Intersection Capacity Analysis

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	61	16	1	0	3	3	0	1	0	11	0	9
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	66	17	1	0	3	3	0	1	0	12	0	10
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	7			18			165	157	18	156	156	5
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	7			18			165	157	18	156	156	5
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			100			100	100	100	98	100	99
cM capacity (veh/h)	1614			1598			767	705	1061	784	706	1078

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	85	7	1	22
Volume Left	66	0	0	12
Volume Right	1	3	0	10
cSH	1614	1598	705	894
Volume to Capacity	0.04	0.00	0.00	0.02
Queue Length 95th (ft)	3	0	0	2
Control Delay (s)	5.8	0.0	10.1	9.1
Lane LOS	A		B	A
Approach Delay (s)	5.8	0.0	10.1	9.1
Approach LOS			B	A

Intersection Summary				
Average Delay	6.1			
Intersection Capacity Utilization	25.4%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	282	0	121	34	44	0	0	191	109
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	307	0	132	37	48	0	0	208	118
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)						2						
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	454	389	267	389	448	48	326			48		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	454	389	267	389	448	48	326			48		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	45	100	87	97			100		
cM capacity (veh/h)	439	530	772	557	491	1021	1234			1559		

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	438	85	326
Volume Left	307	37	0
Volume Right	132	0	118
cSH	746	1234	1700
Volume to Capacity	0.59	0.03	0.19
Queue Length 95th (ft)	97	2	0
Control Delay (s)	16.5	3.6	0.0
Lane LOS	C	A	
Approach Delay (s)	16.5	3.6	0.0
Approach LOS	C		

Intersection Summary					
Average Delay		8.9			
Intersection Capacity Utilization		46.5%	ICU Level of Service		A
Analysis Period (min)		15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	19	0	14	0	0	0	0	48	10	45	434	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	21	0	15	0	0	0	0	52	11	49	472	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)			2									
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	627	633	472	635	627	58	472			63		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	627	633	472	635	627	58	472			63		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	95	100	97	100	100	100	100			97		
cM capacity (veh/h)	386	385	592	372	387	1009	1090			1540		

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	36	63	521
Volume Left	21	0	49
Volume Right	15	11	0
cSH	671	1700	1540
Volume to Capacity	0.05	0.04	0.03
Queue Length 95th (ft)	4	0	2
Control Delay (s)	13.3	0.0	1.0
Lane LOS	B		A
Approach Delay (s)	13.3	0.0	1.0
Approach LOS	B		

Intersection Summary					
Average Delay		1.6			
Intersection Capacity Utilization		42.0%	ICU Level of Service		A
Analysis Period (min)		15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	6	6	0	1	40	26	0	1	0	196	0	251
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	7	0	1	43	28	0	1	0	213	0	273
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	72			7			352	93	7	80	79	58
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	72			7			352	93	7	80	79	58
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	76	100	73
cM capacity (veh/h)	1528			1614			438	793	1076	904	807	1009

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	13	73	1	486
Volume Left	7	1	0	213
Volume Right	0	28	0	273
cSH	1528	1614	793	960
Volume to Capacity	0.00	0.00	0.00	0.51
Queue Length 95th (ft)	0	0	0	73
Control Delay (s)	3.7	0.1	9.5	12.5
Lane LOS	A	A	A	B
Approach Delay (s)	3.7	0.1	9.5	12.5
Approach LOS			A	B

Intersection Summary				
Average Delay	10.7			
Intersection Capacity Utilization	44.0%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	0	11	0	7	2	1	2	16	5	61	232	3
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	12	0	8	2	1	2	17	5	66	252	3
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	413	414	254	417	412	20	255			23		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	413	414	254	417	412	20	255			23		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	98	100	99	100	100	100			96		
cM capacity (veh/h)	529	506	785	519	507	1058	1310			1592		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	12	11	25	322
Volume Left	0	8	2	66
Volume Right	0	1	5	3
cSH	506	544	1310	1592
Volume to Capacity	0.02	0.02	0.00	0.04
Queue Length 95th (ft)	2	2	0	3
Control Delay (s)	12.3	11.8	0.7	1.8
Lane LOS	B	B	A	A
Approach Delay (s)	12.3	11.8	0.7	1.8
Approach LOS	B	B		

Intersection Summary				
Average Delay	2.4			
Intersection Capacity Utilization	35.5%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	0	3	0	1	2	4	3	19	15	38	190	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	3	0	1	2	4	3	21	16	41	207	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	330	333	207	326	324	29	207			37		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	330	333	207	326	324	29	207			37		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	99	100	100	100	100	100			97		
cM capacity (veh/h)	606	570	834	611	576	1046	1365			1574		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	3	8	40	248
Volume Left	0	1	3	41
Volume Right	0	4	16	0
cSH	570	784	1365	1574
Volume to Capacity	0.01	0.01	0.00	0.03
Queue Length 95th (ft)	0	1	0	2
Control Delay (s)	11.3	9.6	0.6	1.4
Lane LOS	B	A	A	A
Approach Delay (s)	11.3	9.6	0.6	1.4
Approach LOS	B	A		

Intersection Summary				
Average Delay	1.6			
Intersection Capacity Utilization	28.8%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	14	42	52	120	179	12	3	4	4	6	160	31
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	15	46	57	130	195	13	3	4	4	7	174	34
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	208			102			687	573	74	573	595	201
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	208			102			687	573	74	573	595	201
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			91			98	99	100	98	54	96
cM capacity (veh/h)	1363			1490			206	388	988	393	377	840

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	117	338	12	214
Volume Left	15	130	3	7
Volume Right	57	13	4	34
cSH	1363	1490	380	413
Volume to Capacity	0.01	0.09	0.03	0.52
Queue Length 95th (ft)	1	7	2	72
Control Delay (s)	1.1	3.4	14.8	22.7
Lane LOS	A	A	B	C
Approach Delay (s)	1.1	3.4	14.8	22.7
Approach LOS			B	C

Intersection Summary				
Average Delay	9.3			
Intersection Capacity Utilization	41.0%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	1	4	0	0	13	5	0	0	0	82	0	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	4	0	0	14	5	0	0	0	89	0	5
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	20			4			29	26	4	23	23	17
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	20			4			29	26	4	23	23	17
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	91	100	99
cM capacity (veh/h)	1597			1617			975	867	1079	988	869	1062

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	5	20	0	95
Volume Left	1	0	0	89
Volume Right	0	5	0	5
cSH	1597	1617	1700	992
Volume to Capacity	0.00	0.00	0.00	0.10
Queue Length 95th (ft)	0	0	0	8
Control Delay (s)	1.5	0.0	0.0	9.0
Lane LOS	A		A	A
Approach Delay (s)	1.5	0.0	0.0	9.0
Approach LOS			A	A

Intersection Summary					
Average Delay	7.2				
Intersection Capacity Utilization	14.8%	ICU Level of Service		A	
Analysis Period (min)	15				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	6	92	169	94	76	88	12	62	11	105	162	16
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	100	184	102	83	96	13	67	12	114	176	17

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	290	280	92	308
Volume Left (vph)	7	102	13	114
Volume Right (vph)	184	96	12	17
Hadj (s)	-0.34	-0.10	-0.02	0.07
Departure Headway (s)	5.2	5.5	6.1	5.7
Degree Utilization, x	0.42	0.43	0.16	0.49
Capacity (veh/h)	636	610	500	587
Control Delay (s)	12.0	12.5	10.2	14.0
Approach Delay (s)	12.0	12.5	10.2	14.0
Approach LOS	B	B	B	B

Intersection Summary					
Delay	12.6				
HCM Level of Service	B				
Intersection Capacity Utilization	62.1%	ICU Level of Service		B	
Analysis Period (min)	15				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	4	8	12	3	13	1	7	20	0	6	450	36
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	9	13	3	14	1	8	22	0	7	489	39
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	15			22			329	46	15	56	52	15
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	15			22			329	46	15	56	52	15
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			98	97	100	99	41	96
cM capacity (veh/h)	1603			1594			320	842	1064	919	836	1065

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	26	18	29	535
Volume Left	4	3	8	7
Volume Right	13	1	0	39
cSH	1603	1594	592	850
Volume to Capacity	0.00	0.00	0.05	0.63
Queue Length 95th (ft)	0	0	4	114
Control Delay (s)	1.2	1.3	11.4	16.1
Lane LOS	A	A	B	C
Approach Delay (s)	1.2	1.3	11.4	16.1
Approach LOS			B	C

Intersection Summary				
Average Delay	14.8			
Intersection Capacity Utilization	36.4%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	1	1	2	1	1	1	49	20	11	23	366	58
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	1	2	1	1	1	53	22	12	25	398	63
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	615	620	429	616	645	28	461			34		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	615	620	429	616	645	28	461			34		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	100	95			98		
cM capacity (veh/h)	382	378	626	381	366	1048	1100			1578		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	4	3	87	486
Volume Left	1	1	53	25
Volume Right	2	1	12	63
cSH	473	475	1100	1578
Volume to Capacity	0.01	0.01	0.05	0.02
Queue Length 95th (ft)	1	1	4	1
Control Delay (s)	12.7	12.6	5.3	0.5
Lane LOS	B	B	A	A
Approach Delay (s)	12.7	12.6	5.3	0.5
Approach LOS	B	B		

Intersection Summary				
Average Delay	1.4			
Intersection Capacity Utilization	34.4%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	2	30	5	105	269	68	4	9	2	18	107	43
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	33	5	114	292	74	4	10	2	20	116	47
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	366			38			702	634	35	604	600	329
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	366			38			702	634	35	604	600	329
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			93			98	97	100	95	70	93
cM capacity (veh/h)	1192			1572			239	367	1037	378	384	712

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	40	480	16	183
Volume Left	2	114	4	20
Volume Right	5	74	2	47
cSH	1192	1572	347	434
Volume to Capacity	0.00	0.07	0.05	0.42
Queue Length 95th (ft)	0	6	4	51
Control Delay (s)	0.4	2.3	15.9	19.2
Lane LOS	A	A	C	C
Approach Delay (s)	0.4	2.3	15.9	19.2
Approach LOS			C	C

Intersection Summary				
Average Delay	6.8			
Intersection Capacity Utilization	47.6%	ICU Level of Service	A	
Analysis Period (min)	15			

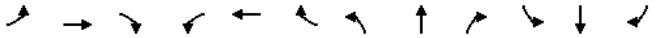
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Volume (veh/h)	49	1	0	0	4	6	0	2	0	15	2	51
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	53	1	0	0	4	7	0	2	0	16	2	55
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	11			1			172	118	1	116	115	8
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	11			1			172	118	1	116	115	8
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			100			100	100	100	98	100	95
cM capacity (veh/h)	1608			1622			730	746	1083	837	749	1075

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	54	11	2	74
Volume Left	53	0	0	16
Volume Right	0	7	0	55
cSH	1608	1622	746	999
Volume to Capacity	0.03	0.00	0.00	0.07
Queue Length 95th (ft)	3	0	0	6
Control Delay (s)	7.2	0.0	9.8	8.9
Lane LOS	A		A	A
Approach Delay (s)	7.2	0.0	9.8	8.9
Approach LOS			A	A

Intersection Summary				
Average Delay	7.6			
Intersection Capacity Utilization	26.8%	ICU Level of Service	A	
Analysis Period (min)	15			

PM 2013 + Cumulative + Project
1: Forrester Road & I-8 WB Ramp

HCM Unsignalized Intersection Capacity Analysis



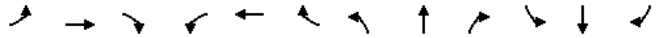
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	35	0	49	62	277	0	0	167	32
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	38	0	53	67	301	0	0	182	35
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)						2						
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	661	635	199	635	652	301	216			301		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	661	635	199	635	652	301	216			301		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	90	100	93	95			100		
cM capacity (veh/h)	335	376	842	376	368	739	1353			1260		

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	91	368	216
Volume Left	38	67	0
Volume Right	53	0	35
cSH	903	1353	1700
Volume to Capacity	0.10	0.05	0.13
Queue Length 95th (ft)	8	4	0
Control Delay (s)	12.5	1.8	0.0
Lane LOS	B	A	
Approach Delay (s)	12.5	1.8	0.0
Approach LOS	B		

Intersection Summary				
Average Delay	2.7			
Intersection Capacity Utilization	42.1%	ICU Level of Service	A	
Analysis Period (min)	15			

PM 2013 + Cumulative + Project
2: Forrester Road & I-8 EB Ramp

HCM Unsignalized Intersection Capacity Analysis



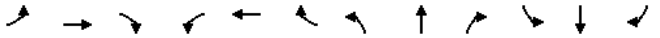
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	118	0	31	0	0	0	0	227	254	115	76	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	128	0	34	0	0	0	0	247	276	125	83	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)			2									
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	717	855	83	734	717	385	83			523		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	717	855	83	734	717	385	83			523		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	59	100	97	100	100	100	100			88		
cM capacity (veh/h)	313	260	977	294	313	663	1515			1044		

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	162	523	208
Volume Left	128	0	125
Volume Right	34	276	0
cSH	395	1700	1044
Volume to Capacity	0.41	0.31	0.12
Queue Length 95th (ft)	49	0	10
Control Delay (s)	21.1	0.0	5.8
Lane LOS	C		A
Approach Delay (s)	21.1	0.0	5.8
Approach LOS	C		

Intersection Summary				
Average Delay	5.2			
Intersection Capacity Utilization	54.4%	ICU Level of Service	A	
Analysis Period (min)	15			

PM 2013 + Cumulative + Project
3: Forrester Road & McCabe Rd

HCM Unsignalized Intersection Capacity Analysis



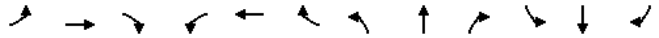
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	253	37	1	0	8	212	1	1	1	41	0	14
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	275	40	1	0	9	230	1	1	1	45	0	15
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	239			41			730	830	41	716	715	124
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	239			41			730	830	41	716	715	124
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	79			100			100	100	100	85	100	98
cM capacity (veh/h)	1328			1568			279	242	1030	289	282	927

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	316	239	3	60
Volume Left	275	0	1	45
Volume Right	1	230	1	15
cSH	1328	1568	346	350
Volume to Capacity	0.21	0.00	0.01	0.17
Queue Length 95th (ft)	19	0	1	15
Control Delay (s)	7.6	0.0	15.5	17.4
Lane LOS	A		C	C
Approach Delay (s)	7.6	0.0	15.5	17.4
Approach LOS			C	C

Intersection Summary				
Average Delay	5.6			
Intersection Capacity Utilization	45.9%	ICU Level of Service	A	
Analysis Period (min)	15			

PM 2013 + Cumulative + Project
4: Brockman Rd & Lyons Rd

HCM Unsignalized Intersection Capacity Analysis



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	1	0	0	10	62	0	210	5	1	18	3
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	1	0	0	11	67	0	228	5	1	20	3
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	327	257	21	255	256	231	23			234		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	327	257	21	255	256	231	23			234		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	98	92	100			100		
cM capacity (veh/h)	566	646	1056	697	647	808	1592			1334		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	1	78	234	24
Volume Left	0	0	0	1
Volume Right	0	67	5	3
cSH	646	781	1592	1334
Volume to Capacity	0.00	0.10	0.00	0.00
Queue Length 95th (ft)	0	8	0	0
Control Delay (s)	10.6	10.1	0.0	0.4
Lane LOS	B	B		A
Approach Delay (s)	10.6	10.1	0.0	0.4
Approach LOS	B	B		

Intersection Summary				
Average Delay	2.4			
Intersection Capacity Utilization	22.4%	ICU Level of Service	A	
Analysis Period (min)	15			

PM 2013 + Cumulative + Project
5: Brockman Rd & Kubler Rd

HCM Unsignalized Intersection Capacity Analysis

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	4	0	3	15	3	36	0	179	4	3	8	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	0	3	16	3	39	0	195	4	3	9	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	253	214	9	215	212	197	9			199		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	253	214	9	215	212	197	9			199		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	100	98	100	95	100			100		
cM capacity (veh/h)	664	682	1073	738	684	844	1611			1373		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	8	59	199	12
Volume Left	4	16	0	3
Volume Right	3	39	4	0
cSH	794	802	1611	1373
Volume to Capacity	0.01	0.07	0.00	0.00
Queue Length 95th (ft)	1	6	0	0
Control Delay (s)	9.6	9.8	0.0	2.1
Lane LOS	A	A		A
Approach Delay (s)	9.6	9.8	0.0	2.1
Approach LOS	A	A		

Intersection Summary				
Average Delay			2.4	
Intersection Capacity Utilization			19.7%	ICU Level of Service
Analysis Period (min)			15	

PM 2013 + Cumulative + Project
6: Brockman Rd & SR-98

HCM Unsignalized Intersection Capacity Analysis

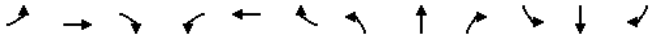
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	36	144	7	0	37	17	49	141	92	2	11	12
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	39	157	8	0	40	18	53	153	100	2	12	13
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	59			164			307	297	160	465	292	49
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	59			164			307	297	160	465	292	49
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			100			91	74	89	99	98	99
cM capacity (veh/h)	1545			1414			615	599	885	355	603	1019

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	203	59	307	27
Volume Left	39	0	53	2
Volume Right	8	18	100	13
cSH	1545	1414	673	701
Volume to Capacity	0.03	0.00	0.46	0.04
Queue Length 95th (ft)	2	0	60	3
Control Delay (s)	1.6	0.0	14.7	10.3
Lane LOS	A		B	B
Approach Delay (s)	1.6	0.0	14.7	10.3
Approach LOS			B	B

Intersection Summary				
Average Delay			8.6	
Intersection Capacity Utilization			45.7%	ICU Level of Service
Analysis Period (min)			15	

PM 2013 + Cumulative + Project
7: Brockman Rd & Anza Rd

HCM Unsignalized Intersection Capacity Analysis



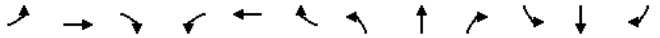
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	3	11	0	0	6	85	0	0	0	13	0	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	12	0	0	7	92	0	0	0	14	0	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	99			12			72	117	12	71	71	53
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	99			12			72	117	12	71	71	53
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	98	100	100
cM capacity (veh/h)	1494			1607			916	771	1069	919	817	1015

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	15	99	0	15
Volume Left	3	0	0	14
Volume Right	0	92	0	1
cSH	1494	1607	1700	925
Volume to Capacity	0.00	0.00	0.00	0.02
Queue Length 95th (ft)	0	0	0	1
Control Delay (s)	1.6	0.0	0.0	9.0
Lane LOS	A		A	A
Approach Delay (s)	1.6	0.0	0.0	9.0
Approach LOS			A	A

Intersection Summary				
Average Delay	1.2			
Intersection Capacity Utilization	15.6%	ICU Level of Service	A	
Analysis Period (min)	15			

PM 2013 + Cumulative + Project
8: La Brucherie Rd & McCabe Rd

HCM Unsignalized Intersection Capacity Analysis



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	29	136	18	5	96	117	189	178	93	106	59	12
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	32	148	20	5	104	127	205	193	101	115	64	13

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	199	237	500	192
Volume Left (vph)	32	5	205	115
Volume Right (vph)	20	127	101	13
Hadj (s)	0.01	-0.28	-0.01	0.11
Departure Headway (s)	6.6	6.2	5.7	6.4
Degree Utilization, x	0.36	0.41	0.80	0.34
Capacity (veh/h)	491	508	611	494
Control Delay (s)	13.3	13.4	27.3	12.8
Approach Delay (s)	13.3	13.4	27.3	12.8
Approach LOS	B	B	D	B

Intersection Summary				
Delay	19.4			
HCM Level of Service	C			
Intersection Capacity Utilization	58.3%	ICU Level of Service	B	
Analysis Period (min)	15			

PM 2013 + Cumulative + Project
9: La Brucherie Rd & Wahl Rd

HCM Unsignalized Intersection Capacity Analysis

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	33	12	2	1	5	3	6	436	7	17	42	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	36	13	2	1	5	3	7	474	8	18	46	3
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	9			15			121	97	14	340	96	7
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	9			15			121	97	14	340	96	7
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			99	39	99	94	94	100
cM capacity (veh/h)	1611			1603			799	775	1066	307	776	1075

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	51	10	488	67
Volume Left	36	1	7	18
Volume Right	2	3	8	3
cSH	1611	1603	779	552
Volume to Capacity	0.02	0.00	0.63	0.12
Queue Length 95th (ft)	2	0	112	10
Control Delay (s)	5.2	0.8	17.1	12.4
Lane LOS	A	A	C	B
Approach Delay (s)	5.2	0.8	17.1	12.4
Approach LOS			C	B

Intersection Summary				
Average Delay	15.3			
Intersection Capacity Utilization	39.8%	ICU Level of Service	A	
Analysis Period (min)	15			

PM 2013 + Cumulative + Project
10: Ferrell Rd/La Brucherie Rd & Kubler Rd

HCM Unsignalized Intersection Capacity Analysis

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	58	3	38	12	0	22	14	286	3	2	41	2
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	63	3	41	13	0	24	15	311	3	2	45	2
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	417	395	46	436	394	312	47			314		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	417	395	46	436	394	312	47			314		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	88	99	96	97	100	97	99			100		
cM capacity (veh/h)	524	536	1024	502	536	728	1561			1246		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	108	37	329	49
Volume Left	63	13	15	2
Volume Right	41	24	3	2
cSH	645	628	1561	1246
Volume to Capacity	0.17	0.06	0.01	0.00
Queue Length 95th (ft)	15	5	1	0
Control Delay (s)	11.7	11.1	0.4	0.4
Lane LOS	B	B	A	A
Approach Delay (s)	11.7	11.1	0.4	0.4
Approach LOS	B	B		

Intersection Summary				
Average Delay	3.5			
Intersection Capacity Utilization	36.4%	ICU Level of Service	A	
Analysis Period (min)	15			

PM 2013 + Cumulative + Project
11: Ferrell Rd & SR-98

HCM Unsignalized Intersection Capacity Analysis

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	31	224	1	12	32	14	3	93	76	60	23	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	34	243	1	13	35	15	3	101	83	65	25	3
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	50			245			396	388	244	513	380	42
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	50			245			396	388	244	513	380	42
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			99			99	81	90	81	95	100
cM capacity (veh/h)	1557			1322			529	530	795	352	535	1028

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	278	63	187	93
Volume Left	34	13	3	65
Volume Right	1	15	83	3
cSH	1557	1322	621	398
Volume to Capacity	0.02	0.01	0.30	0.24
Queue Length 95th (ft)	2	1	32	23
Control Delay (s)	1.1	1.7	13.3	16.8
Lane LOS	A	A	B	C
Approach Delay (s)	1.1	1.7	13.3	16.8
Approach LOS			B	C

Intersection Summary				
Average Delay	7.2			
Intersection Capacity Utilization	40.3%	ICU Level of Service	A	
Analysis Period (min)	15			

PM 2013 + Cumulative + Project
12: Ferrell Rd & Anza Rd

HCM Unsignalized Intersection Capacity Analysis

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	93	16	1	0	3	3	0	1	0	11	0	10
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	101	17	1	0	3	3	0	1	0	12	0	11
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	7			18			236	227	18	226	226	5
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	7			18			236	227	18	226	226	5
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	94			100			100	100	100	98	100	99
cM capacity (veh/h)	1614			1598			677	631	1061	694	631	1078

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	120	7	1	23
Volume Left	101	0	0	12
Volume Right	1	3	0	11
cSH	1614	1598	631	836
Volume to Capacity	0.06	0.00	0.00	0.03
Queue Length 95th (ft)	5	0	0	2
Control Delay (s)	6.3	0.0	10.7	9.4
Lane LOS	A		B	A
Approach Delay (s)	6.3	0.0	10.7	9.4
Approach LOS			B	A

Intersection Summary				
Average Delay	6.5			
Intersection Capacity Utilization	27.3%	ICU Level of Service	A	
Analysis Period (min)	15			

Appendix O

Growth Factor Support Data

LAND USE ELEMENT
of the Imperial County
GENERAL PLAN

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Planning & Development Services Director

Approved By:

Board of Supervisors

October 17, 2006

II. EXISTING CONDITIONS AND TRENDS

A. Preface

Knowledge, experience and reasoned expectations of future conditions determines the scope of the issues that the Land Use Element must address. This chapter includes a generalized description of existing physical, cultural, and land use features within the County, from both a historic and expected future perspective.

B. Land Use/Population

Imperial County is, and will continue for the foreseeable future to be, a predominantly agricultural area, **although in 2003 a significant increase in urbanization began to show.** Presently, approximately one-fifth (534,328) of the nearly 3 million acres of the County is irrigated for agricultural purposes. In addition, approximately 50 percent of County lands are largely undeveloped and under federal ownership. The developed area where the County's incorporated cities, 'nincorporated communities, and supporting facilities are situated comprise less than one percent of the land (see Table 1).

Imperial County Planning & Development Services Department bases its population estimates on building permits and housing unit change. From this annual compilation, the Population Research Unit of the California Department of Finance (DOF) estimates the annual change in population. According to the Department of Finance's January 1, 2006, estimates, the population for the unincorporated area is 36,166 with the total population for Imperial County being 166,585. This compares to the 1990 census results of 27,339 for the unincorporated area with the total population for the County being 109,303 and the 2000 census results of 32,772 for the unincorporated area and 147,361 for the entire County (see Table 2). According to DOF 2006 figures, the average household size county-wide is approximately 3.32 persons per household, with the average in cities being 3.42 persons per household and the average in the unincorporated area being 2.96 persons per household.

Population in the unincorporated areas of the County tends to concentrate in agricultural areas and in recreation/retirement communities. Agricultural related communities include the townsites of Heber, Niland and Seeley in the Imperial Valley. Along the Colorado River, in the eastern portion of the County, small population clusters exist within the townsites of Palo Verde and Winterhaven. Recreation/retirement communities include Ocotillo/Nomirage located in the southwest portion of the County, and Hot Mineral Spa and Bombay Beach, on the northeastern shore of the Salton Sea. The West Shores communities of Salton City, Salton Sea Beach, and Desert Shores are also largely retirement and recreation communities, though increasingly their populations are becoming more diversified. These communities experience a noticeable increase in population during the winter months when visitors converge to the area to avoid cold/wet winters in other parts of the country.

E-2. California County Population Estimates and Components of Change
Revised July 1, 2006 and Provisional July 1, 2007
Table 1.

County	Total Population		Change 2006-2007		Components of Change					
	Revised July 1, 2006	Provisional July 1, 2007	Number	Percent	Births	Deaths	Natural Increase	Net Migration	Net Immigration	Net Domestic Migration
Alameda	1,513,859	1,530,620	16,761	1.11	20,906	9,384	11,522	5,239	10,033	-4,794
Alpine	1,254	1,261	7	0.56	16	9	7	0	2	-2
Amador	38,083	38,320	237	0.62	291	418	-127	364	19	345
Butte	217,548	219,101	1,553	0.71	2,584	2,148	436	1,117	312	805
Calaveras	45,663	45,950	287	0.63	390	429	-39	326	32	294
Colusa	21,551	21,945	394	1.83	400	142	258	136	108	28
Contra Costa	1,031,012	1,044,201	13,189	1.28	13,584	6,836	6,748	6,441	4,168	2,273
Del Norte	29,009	29,207	198	0.68	374	290	84	114	25	89
El Dorado	176,969	178,689	1,720	0.97	1,981	1,250	731	989	290	699
Fresno	906,365	923,052	16,687	1.84	17,110	5,951	11,159	5,528	4,365	1,163
Glenn	28,628	29,018	390	1.36	455	249	206	184	99	85
Humboldt	131,876	132,364	488	0.37	1,605	1,255	350	138	77	61
Imperial	168,979	174,322	5,343	3.16	3,280	914	2,366	2,977	2,373	604
Inyo	18,221	18,253	32	0.18	242	239	3	29	28	1
Kern	790,246	809,903	19,657	2.49	15,446	5,406	10,040	9,617	3,114	6,503
Kings	149,883	153,268	3,385	2.26	2,742	841	1,901	1,484	564	920
Lake	63,618	63,821	203	0.32	737	850	-113	316	155	161
Lassen	35,521	36,223	702	1.98	268	209	59	643	19	624
Los Angeles	10,247,672	10,294,280	46,608	0.45	152,479	60,800	91,679	-45,071	69,567	-114,638
Madera	146,064	149,916	3,852	2.64	2,565	921	1,644	2,208	505	1,703
Marin	254,000	256,310	2,310	0.91	2,625	1,787	838	1,472	534	938
Mariposa	18,187	18,356	169	0.93	148	176	-28	197	13	184
Mendocino	89,264	89,669	405	0.45	1,137	857	280	125	238	-113
Merced	248,258	252,544	4,286	1.73	4,867	1,435	3,432	854	1,271	-417
Modoc	9,690	9,747	57	0.59	77	114	-37	94	3	91
Mono	14,019	14,055	36	0.26	167	47	120	-84	43	-127
Monterey	421,463	425,356	3,893	0.92	7,371	2,431	4,940	-1,047	2,490	-3,537
Napa	134,186	135,554	1,368	1.02	1,760	1,266	494	874	615	259
Nevada	99,248	99,587	339	0.34	773	982	-209	548	95	453
Orange	3,075,341	3,098,183	22,842	0.74	44,582	17,389	27,193	-4,351	17,584	-21,935
Placer	322,953	329,818	6,865	2.13	3,897	2,257	1,640	5,225	699	4,526
Plumas	21,013	20,891	-122	-0.58	174	226	-52	-70	29	-99
Riverside	2,004,174	2,070,315	66,141	3.30	35,144	13,539	21,605	44,536	7,898	36,638
Sacramento	1,396,496	1,415,117	18,621	1.33	21,703	9,716	11,987	6,634	5,424	1,210
San Benito	57,128	57,493	365	0.64	886	275	611	-246	245	-491
San Bernardino	2,011,404	2,039,467	28,063	1.40	35,351	12,227	23,124	4,939	6,907	-1,968
San Diego	3,077,877	3,120,088	42,211	1.37	46,460	20,298	26,162	16,049	13,067	2,982
San Francisco	806,210	817,537	11,327	1.40	8,683	6,105	2,578	8,749	9,192	-443
San Joaquin	671,115	680,183	9,068	1.35	11,880	4,392	7,488	1,580	3,572	-1,992
San Luis Obispo	264,972	267,154	2,182	0.82	2,740	2,082	658	1,524	431	1,093
San Mateo	726,260	734,453	8,193	1.13	9,667	4,626	5,041	3,152	4,820	-1,668
Santa Barbara	421,337	425,710	4,373	1.04	5,998	2,884	3,114	1,259	1,884	-625
Santa Clara	1,790,272	1,820,176	29,904	1.67	26,347	8,454	17,893	12,011	12,867	-856
Santa Cruz	262,150	265,183	3,033	1.16	3,583	1,666	1,917	1,116	1,340	-224
Shasta	180,129	181,380	1,251	0.69	2,213	1,838	375	876	107	769
Sierra	3,464	3,400	-64	-1.85	14	37	-23	-41	1	-42
Siskiyou	45,618	45,695	77	0.17	532	533	-1	78	43	35
Solano	421,815	423,970	2,155	0.51	5,909	2,668	3,241	-1,086	1,637	-2,723
Sonoma	477,615	482,034	4,419	0.93	5,874	3,836	2,038	2,381	1,226	1,155
Stanislaus	515,660	523,095	7,435	1.44	8,918	3,598	5,320	2,115	1,959	156
Sutter	92,715	95,516	2,801	3.02	1,634	725	909	1,892	871	1,021
Tehama	61,369	62,093	724	1.18	839	641	198	526	109	417
Trinity	13,959	14,012	53	0.38	124	153	-29	82	6	76
Tulare	422,594	430,974	8,380	1.98	8,633	2,668	5,965	2,415	2,106	309
Tuolumne	56,882	56,910	28	0.05	497	620	-123	151	42	109
Ventura	818,803	826,550	7,747	0.95	12,442	5,120	7,322	425	3,575	-3,150
Yolo	193,262	197,530	4,268	2.21	2,689	1,121	1,568	2,700	949	1,751
Yuba	70,053	71,612	1,559	2.23	1,376	554	822	737	184	553
California	37,332,976	37,771,431	438,455	1.17	565,169	237,884	327,285	111,170	199,931	-88,761

POPULATION PROJECTIONS BY RACE/ETHNICITY FOR CALIFORNIA AND ITS COUNTIES 2000-2050
REPORT 06 P-1

TABLE 1	TOTAL POPULATION					
	2000	2010	2020	2030	2040	2050
ALAMEDA	1,453,078	1,550,133	1,663,481	1,791,721	1,923,505	2,047,658
ALPINE	1,261	1,369	1,453	1,462	1,411	1,377
AMADOR	35,357	40,337	47,593	54,788	61,550	68,487
BUTTE	204,065	230,116	281,442	334,842	387,743	441,596
CALAVERAS	40,870	47,750	56,318	64,572	72,230	80,424
COLUSA	19,027	23,787	29,588	34,488	38,131	41,662
CONTRA COSTA	956,497	1,075,931	1,237,544	1,422,840	1,609,257	1,812,242
DEL NORTE	27,680	30,983	36,077	42,420	49,029	56,218
EL DORADO	158,621	189,308	221,140	247,570	280,720	314,126
FRESNO	804,508	983,478	1,201,792	1,429,228	1,670,542	1,928,411
GLENN	26,764	30,880	37,959	45,181	54,000	63,586
HUMBOLDT	126,839	134,785	142,167	147,217	150,121	152,333
IMPERIAL	143,763	189,675	239,149	283,693	334,951	387,763
INYO	18,181	19,183	20,495	22,132	23,520	25,112
KERN	665,519	871,728	1,086,113	1,352,627	1,707,239	2,106,024
KINGS	130,202	164,535	205,707	250,516	299,770	352,750
LAKE	58,724	67,530	77,912	87,066	96,885	106,887
LASSEN	34,108	37,918	42,394	47,240	51,596	55,989
LOS ANGELES	9,578,960	10,514,663	11,214,237	11,920,289	12,491,606	13,061,787
MADERA	124,696	162,114	212,874	273,456	344,455	413,569
MARIN	248,449	253,682	260,305	273,151	287,153	307,868
MARIPOSA	17,150	19,108	21,743	23,981	26,169	28,091
MENDOCINO	86,736	93,166	102,017	111,151	121,780	134,358
MERCED	211,481	273,935	348,690	439,905	541,161	652,355
MODOC	9,628	10,809	13,134	16,250	20,064	24,085
MONO	13,013	14,833	18,080	22,894	29,099	36,081
MONTEREY	404,031	433,283	476,642	529,145	584,878	646,590
NAPA	125,146	142,767	165,786	191,734	219,156	251,630
NEVADA	92,532	102,649	114,451	123,940	130,404	136,113
ORANGE	2,863,834	3,227,836	3,520,265	3,705,322	3,849,650	3,987,625
PLACER	252,223	347,543	428,535	512,509	625,964	751,208
PLUMAS	20,868	21,824	22,934	24,530	26,279	28,478
RIVERSIDE	1,559,039	2,239,053	2,904,848	3,507,498	4,103,182	4,730,922
SACRAMENTO	1,233,575	1,451,866	1,622,306	1,803,872	1,989,221	2,176,508
SAN BENITO	53,927	64,230	83,792	103,340	123,406	145,570
SAN BERNARDINO	1,721,942	2,177,596	2,581,371	2,958,939	3,309,292	3,662,193
SAN DIEGO	2,836,303	3,199,706	3,550,714	3,950,757	4,241,399	4,508,728
SAN FRANCISCO	781,209	818,163	844,466	854,675	858,532	854,852
SAN JOAQUIN	569,083	741,417	965,094	1,205,198	1,477,473	1,783,973
SAN LUIS OBISPO	248,322	269,734	293,540	316,613	338,760	364,748
SAN MATEO	711,031	736,667	761,455	786,069	807,587	819,125
SANTA BARBARA	401,115	434,497	459,498	484,570	509,920	534,447
SANTA CLARA	1,693,128	1,837,361	1,992,805	2,192,501	2,412,411	2,624,670
SANTA CRUZ	256,695	268,016	287,480	304,465	318,413	333,083
SHASTA	164,794	191,722	224,386	260,179	295,281	331,724
SIERRA	3,701	3,628	3,508	3,290	3,356	3,547
SISKIYOU	44,634	47,109	51,283	55,727	60,656	66,588
SOLANO	396,995	441,061	503,248	590,166	697,206	815,524
SONOMA	461,618	495,412	546,151	606,346	676,179	761,177
STANISLAUS	451,190	559,708	699,144	857,893	1,014,365	1,191,344
SUTTER	79,632	102,326	141,159	182,401	229,620	282,894
TEHAMA	56,130	65,593	79,484	93,477	108,345	124,475
TRINITY	13,155	15,172	18,236	22,136	26,030	30,209
TULARE	369,873	466,893	599,117	742,969	879,480	1,026,755
TUOLUMNE	54,863	58,721	64,161	67,510	70,325	73,291
VENTURA	758,884	855,876	956,392	1,049,758	1,135,684	1,229,737
YOLO	170,190	206,100	245,052	275,360	301,934	327,982
YUBA	60,598	80,411	109,216	137,322	168,040	201,327
CALIFORNIA	34,105,437	39,135,676	44,135,923	49,240,891	54,226,115	59,507,876

Department of Finance
Demographic Research Unit
2007

COUNTY OF IMPERIAL

2000-2005 HOUSING ELEMENT

JURG HEUBERGER, AICP, CEP
Planning Director

Prepared By:

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The exception of this low density aspect can be found in the several small rural unincorporated communities such as Heber, Seeley, Niland, Salton City and Palo Verde that have the basic infrastructure (to a lesser extent) associated with the incorporated cities. These small rural communities tend to be isolated from the cities. Beyond these small rural communities and located in the agricultural lands and the desert open space areas of the unincorporated County, there is a relatively small and geographically dispersed population that lacks the infrastructure associated with either the incorporated cities or the small rural communities.

The majority of the growth that occurs in the County tends to happen in the incorporated cities or in the areas surrounding the cities. The County has essentially established urban buffer areas around all the cities and communities located in agricultural areas (Please see the "Urban Areas" illustrated in the County General Plan Land Use Map provided in Appendix A of this Element). It is these buffer areas where growth outside of the incorporated cities tends to occur. Development in these areas is accomplished through the connection of services from a neighboring city, annexation into the city, or the establishment of new services to support the development. Growth outside of the "urban area" tends to be on a single lot basis. With the exception of a few small districts, neither major subdivisions nor major developments typically occur in the unincorporated areas outside of the "urban areas" due to the County's rural character, lack of available infrastructure and the agricultural based activities.

2. County Growth Trends

The best available source of demographic information is the federal census, which is conducted once every ten years. The Population Research Unit of the California Department of Finance is the best source for annual population estimates. One problem with the federal census is that it does not take into account the seasonal population changes. Imperial County attracts many seasonal migratory workers and retired people, especially during the months of November through February.

Population Characteristics

Based on the 1990 census, the total population of Imperial County increased from 92,500 to 109,303 between 1980 and 1990, an increase of 16,803 persons or 18.2 percent. The unincorporated area increased from 24,459 to 27,339 persons in the same period of time. This 11.8 percent increase represents a population growth of 2,880 persons in the unincorporated area and highlights the lower population growth in the unincorporated areas when compared to the County as a whole. Based on April 1998 SCAG estimates, the year 2000 population of Imperial County is 148,980, with an estimated 39,422 people living in unincorporated areas.

There are a number of potential factors that may support an accelerated population growth in the near future. These factors include: growth of the geothermal industry in the County; additional prisons; an additional USA/Mexico border crossing; the possible expansion of the U.S. Naval Air Facility; and a possible regional airport.

Household Characteristics

A household is any group of people living together in a residence, whether related or unrelated. A survey of household characteristics is useful to determine household size trends, income, overcrowding or under-utilization of housing, and the number of special needs households such as large families and female-headed households.

According to the 1997 Housing Survey there were an estimated 4,388 households in the unincorporated portions of the County in 1997. Approximately 24.5 percent of the households were renter-occupied, while the remaining 75.5 percent were owner-occupied.

The average household size was estimated to be 3.45 persons per household. Further, larger households with five or more persons per household comprised 29.7 percent of the community, while three or four person households constituted 36.8 percent of the households in the unincorporated County.

As depicted in Table 1, approximately 66 percent of the owner- and renter-occupied households in the unincorporated County have annual incomes below 80 percent of the area median income, meaning 2/3 of the households are considered lower income households. In addition, Table 1 also shows that a majority of renter households have annual incomes less than 50 percent of the median income, or 60 percent of the renter households are considered very low income.

Community Development Division
Southern California Association of Governments

SCAG

2004 Regional Transportation Plan/ Growth Vision:

SOCIO-ECONOMIC FORECAST REPORT

June 2004




Counties and Subregions

Imperial County Subregion

Population and Households

Imperial County shares a border with Mexico and is primarily agricultural. The county currently has about 1 percent of the SCAG regional population and about 1 percent of the households. The 2000 July figure shows that the population is 147,000 with 39,500 households.

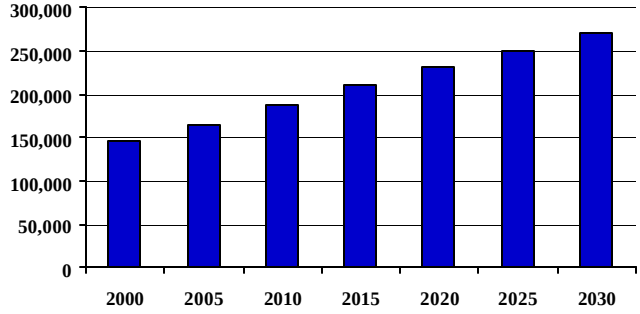

Figure 24

Imperial County's population is projected to be 270,000 in 2030, an 84 percent increase from its 2000 population. The number of households is projected to be 84,000 in 2030, up 112 percent from 2000. Based on the SCAG adopted 2004 RTP Socioeconomic Forecast, the Imperial County population and households are expected to grow at a faster pace than the regional average. Population is projected to grow at an annual rate of 2.8 percent and households are projected to grow at annual rate of 3.7 percent.

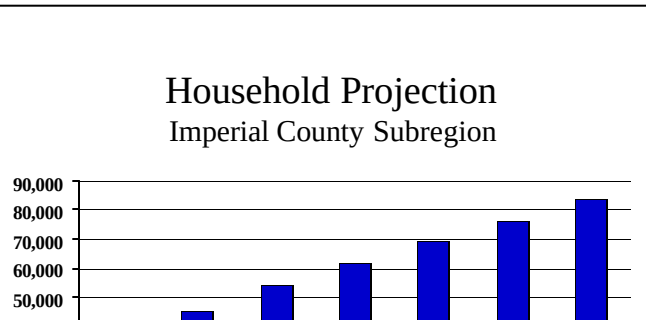

Figure 25

The County's rapid growth rate is primarily a result of the large Hispanic population in the county. In 2000, seventy two percent of the Imperial County population was Hispanic. Hispanics have the highest fertility rate,

IMPERIAL COUNTY

2013 TRANSPORTATION PLAN

NOVEMBER 2013

Updated by:

Imperial County Transportation Commission
1405 N. Imperial Ave., Suite 1
El Centro, CA 92243
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In coordination with:

Southern California Association of Governments

California Department of Transportation, District 11

CHAPTER 4
FUTURE CONDITIONS

Two criteria will dominate future conditions; the growth in population and traffic related to border crossings.

The distance to commute to larger employment centers from housing in Imperial County will be a challenge, but home buyers in Imperial County are nevertheless commuting to work in San Diego.

The California Department of Finance estimated the rate of growth in Imperial County to be 0.5% in 2012. While that growth rate has been curtailed due to the recent economic slump, the population will still likely increase significantly in the next 25 years. SCAG in their 2012 Regional Transportation Plan indicated that much of the population growth in the region is greatly influenced by net migration and the major economic recession of 2007-2009.

The growth will likely mean added congestion management compliance requirements under California Government Code 65088 and 65089, which complements, but does not replace federal congestion planning requirements under 23CFR540.320.
In addition, the existing border crossings create bottlenecks on both sides of the border. Much of the congestion in Imperial County can be attributed to border traffic.
Future conditions could include potential developments such as the Silicon Border Development, a cargo airport, and a Calexico casino. Added to this development pressure is the GSAs plan for improvements to the Calexico POE and associated changes to traffic circulation. Both northbound and southbound traffic will be relocated to the west of the existing facility to a location previously used as the commercial gate (adjacent to the New River). Improvements are also expected for pedestrian and bus traffic operations.

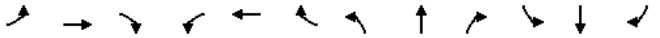
To address this potential growth local agencies have been updating their circulation plans to deal with the future demand. The County of Imperial, the City of Calexico and the City of El Centro have all developed new circulation plans. In addition, the County and the Cities of El Centro and Brawley are also working on development impact fee programs to pay for the new facilities that will be required to service the new demand. The California Complete Streets Act (AB1358) requires all jurisdictions substantially revising their general plans after January 2011 must consider the needs of all roadway users, including bicyclists, pedestrians and the handicapped.

Future LOS, ADT, and LOS C capacity are provided in Table 4-1 for north-south facilities and Table 4-2 for east-west facilities.

Appendix P

Year 2016 Intersection LOS Calculations

AM 2016
1: Forrester Road & I-8 WB Ramp
HCM Unsignalized Intersection Capacity Analysis



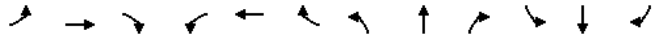
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	102	0	131	4	33	0	0	105	70
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	111	0	142	4	36	0	0	114	76
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)						2						
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	268	197	152	197	235	36	190			36		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	268	197	152	197	235	36	190			36		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	85	100	86	100			100		
cM capacity (veh/h)	589	697	894	760	664	1037	1384			1575		

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	253	40	190
Volume Left	111	4	0
Volume Right	142	0	76
cSH	1737	1384	1700
Volume to Capacity	0.15	0.00	0.11
Queue Length 95th (ft)	13	0	0
Control Delay (s)	9.7	0.8	0.0
Lane LOS	A	A	
Approach Delay (s)	9.7	0.8	0.0
Approach LOS	A		

Intersection Summary					
Average Delay	5.1				
Intersection Capacity Utilization	22.1%	ICU Level of Service		A	
Analysis Period (min)	15				

LOS Engineering, Inc. Synchro

AM 2016
2: Forrester Road & I-8 EB Ramp
HCM Unsignalized Intersection Capacity Analysis



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	21	0	2	0	0	0	0	16	7	49	165	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	23	0	2	0	0	0	0	17	8	53	179	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)			2									
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	307	311	179	308	307	21	179			25		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	307	311	179	308	307	21	179			25		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	96	100	100	100	100	100	100			97		
cM capacity (veh/h)	629	584	863	626	586	1056	1396			1589		

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	25	25	233
Volume Left	23	0	53
Volume Right	2	8	0
cSH	689	1700	1589
Volume to Capacity	0.04	0.01	0.03
Queue Length 95th (ft)	3	0	3
Control Delay (s)	10.8	0.0	1.9
Lane LOS	B		A
Approach Delay (s)	10.8	0.0	1.9
Approach LOS	B		

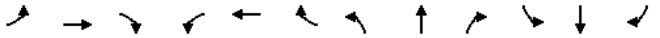
Intersection Summary					
Average Delay	2.5				
Intersection Capacity Utilization	28.1%	ICU Level of Service		A	
Analysis Period (min)	15				

LOS Engineering, Inc. Synchro

AM 2016

3: Forrester Road & McCabe Rd

HCM Unsignalized Intersection Capacity Analysis



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	4	7	0	1	33	10	0	1	0	18	0	136
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	8	0	1	36	11	0	1	0	20	0	148
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	47			8			208	65	8	60	60	41
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	47			8			208	65	8	60	60	41
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	98	100	86
cM capacity (veh/h)	1561			1613			641	823	1075	932	828	1030

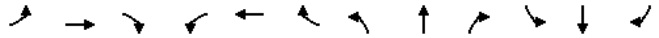
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	12	48	1	167
Volume Left	4	1	0	20
Volume Right	0	11	0	148
cSH	1561	1613	823	1017
Volume to Capacity	0.00	0.00	0.00	0.16
Queue Length 95th (ft)	0	0	0	15
Control Delay (s)	2.7	0.2	9.4	9.2
Lane LOS	A	A	A	A
Approach Delay (s)	2.7	0.2	9.4	9.2
Approach LOS			A	A

Intersection Summary				
Average Delay	7.0			
Intersection Capacity Utilization	26.1%	ICU Level of Service	A	
Analysis Period (min)	15			

AM 2016

4: Brockman Rd & Lyons Rd

HCM Unsignalized Intersection Capacity Analysis



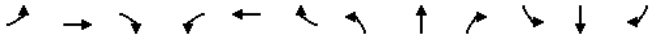
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	3	0	3	2	0	2	16	1	0	171	3
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	3	0	3	2	0	2	17	1	0	186	3
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	211	210	188	211	211	18	189			18		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	211	210	188	211	211	18	189			18		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	100	100			100		
cM capacity (veh/h)	744	686	855	742	685	1061	1385			1598		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	3	5	21	189
Volume Left	0	3	2	0
Volume Right	0	0	1	3
cSH	686	718	1385	1598
Volume to Capacity	0.00	0.01	0.00	0.00
Queue Length 95th (ft)	0	1	0	0
Control Delay (s)	10.3	10.1	0.8	0.0
Lane LOS	B	B	A	
Approach Delay (s)	10.3	10.1	0.8	0.0
Approach LOS	B	B		

Intersection Summary				
Average Delay	0.5			
Intersection Capacity Utilization	19.2%	ICU Level of Service	A	
Analysis Period (min)	15			

AM 2016
5: Brockman Rd & Kubler Rd

HCM Unsignalized Intersection Capacity Analysis



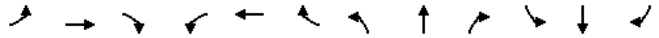
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	1	2	0	3	20	0	2	160	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	1	2	0	3	22	0	2	174	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	208	207	174	207	207	22	174			22		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	208	207	174	207	207	22	174			22		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	100	100			100		
cM capacity (veh/h)	746	688	870	749	688	1055	1403			1594		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	0	3	25	176
Volume Left	0	1	3	2
Volume Right	0	0	0	0
cSH	1700	707	1403	1594
Volume to Capacity	0.00	0.00	0.00	0.00
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	0.0	10.1	1.0	0.1
Lane LOS	A	B	A	A
Approach Delay (s)	0.0	10.1	1.0	0.1
Approach LOS	A	B		

Intersection Summary				
Average Delay	0.4			
Intersection Capacity Utilization	18.8%	ICU Level of Service	A	
Analysis Period (min)	15			

AM 2016
6: Brockman Rd & SR-98

HCM Unsignalized Intersection Capacity Analysis



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	3	37	18	120	175	13	3	4	4	2	125	34
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	40	20	130	190	14	3	4	4	2	136	37
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	204			60			620	522	50	521	524	197
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	204			60			620	522	50	521	524	197
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			92			99	99	100	99	68	96
cM capacity (veh/h)	1367			1544			269	420	1018	430	418	844

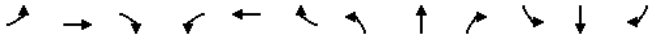
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	63	335	12	175
Volume Left	3	130	3	2
Volume Right	20	14	4	37
cSH	1367	1544	447	468
Volume to Capacity	0.00	0.08	0.03	0.37
Queue Length 95th (ft)	0	7	2	43
Control Delay (s)	0.4	3.4	13.3	17.2
Lane LOS	A	A	B	C
Approach Delay (s)	0.4	3.4	13.3	17.2
Approach LOS			B	C

Intersection Summary				
Average Delay	7.4			
Intersection Capacity Utilization	38.8%	ICU Level of Service	A	
Analysis Period (min)	15			

AM 2016

7: Brockman Rd & Anza Rd

HCM Unsignalized Intersection Capacity Analysis



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	1	4	0	0	14	5	0	0	0	2	0	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	4	0	0	15	5	0	0	0	2	0	5
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	21			4			30	27	4	24	24	18
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	21			4			30	27	4	24	24	18
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	100	100	99
cM capacity (veh/h)	1595			1617			973	865	1079	986	868	1061

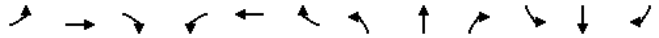
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	5	21	0	8
Volume Left	1	0	0	2
Volume Right	0	5	0	5
cSH	1595	1617	1700	1038
Volume to Capacity	0.00	0.00	0.00	0.01
Queue Length 95th (ft)	0	0	0	1
Control Delay (s)	1.5	0.0	0.0	8.5
Lane LOS	A		A	A
Approach Delay (s)	1.5	0.0	0.0	8.5
Approach LOS			A	A

Intersection Summary				
Average Delay	2.2			
Intersection Capacity Utilization	13.3%	ICU Level of Service	A	
Analysis Period (min)	15			

AM 2016

8: La Brucherie Rd & McCabe Rd

HCM Unsignalized Intersection Capacity Analysis



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	7	54	12	10	52	70	8	65	8	58	61	11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	59	13	11	57	76	9	71	9	63	66	12

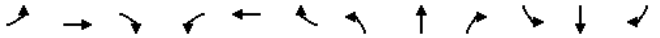
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	79	143	88	141
Volume Left (vph)	8	11	9	63
Volume Right (vph)	13	76	9	12
Hadj (s)	-0.05	-0.27	-0.01	0.07
Departure Headway (s)	4.6	4.3	4.6	4.6
Degree Utilization, x	0.10	0.17	0.11	0.18
Capacity (veh/h)	732	788	739	738
Control Delay (s)	8.1	8.2	8.2	8.6
Approach Delay (s)	8.1	8.2	8.2	8.6
Approach LOS	A	A	A	A

Intersection Summary				
Delay	8.3			
HCM Level of Service	A			
Intersection Capacity Utilization	29.9%	ICU Level of Service	A	
Analysis Period (min)	15			

AM 2016

9: La Brucherie Rd & Wahl Rd

HCM Unsignalized Intersection Capacity Analysis



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	2	9	13	3	14	1	8	15	0	7	142	7
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	10	14	3	15	1	9	16	0	8	154	8
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	16			24			128	44	17	52	51	16
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	16			24			128	44	17	52	51	16
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			99	98	100	99	82	99
cM capacity (veh/h)	1601			1591			718	845	1062	931	838	1064

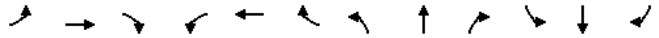
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	26	20	25	170
Volume Left	2	3	9	8
Volume Right	14	1	0	8
cSH	1601	1591	796	850
Volume to Capacity	0.00	0.00	0.03	0.20
Queue Length 95th (ft)	0	0	2	19
Control Delay (s)	0.6	1.2	9.7	10.3
Lane LOS	A	A	A	B
Approach Delay (s)	0.6	1.2	9.7	10.3
Approach LOS			A	B

Intersection Summary					
Average Delay	8.4				
Intersection Capacity Utilization	18.4%	ICU Level of Service		A	
Analysis Period (min)	15				

AM 2016

10: Ferrell Rd/La Brucherie Rd & Kubler Rd

HCM Unsignalized Intersection Capacity Analysis



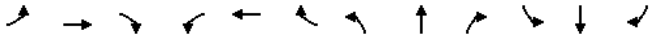
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	1	1	1	1	1	1	16	18	1	3	123	13
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	1	1	1	1	1	17	20	1	3	134	14
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	204	203	141	204	209	20	148			21		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	204	203	141	204	209	20	148			21		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	100	99			100		
cM capacity (veh/h)	744	684	907	744	678	1058	1434			1595		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	3	3	38	151
Volume Left	1	1	17	3
Volume Right	1	1	1	14
cSH	768	797	1434	1595
Volume to Capacity	0.00	0.00	0.01	0.00
Queue Length 95th (ft)	0	0	1	0
Control Delay (s)	9.7	9.5	3.5	0.2
Lane LOS	A	A	A	A
Approach Delay (s)	9.7	9.5	3.5	0.2
Approach LOS	A	A		

Intersection Summary					
Average Delay	1.1				
Intersection Capacity Utilization	20.9%	ICU Level of Service		A	
Analysis Period (min)	15				

AM 2016
11: Ferrell Rd & SR-98

HCM Unsignalized Intersection Capacity Analysis



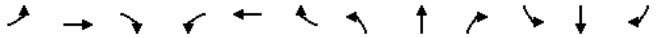
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	2	33	5	67	263	22	4	9	1	8	81	47
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	36	5	73	286	24	4	10	1	9	88	51
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	310			41			582	498	39	492	489	298
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	310			41			582	498	39	492	489	298
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			95			99	98	100	98	81	93
cM capacity (veh/h)	1251			1568			325	451	1033	461	456	742

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	43	383	15	148
Volume Left	2	73	4	9
Volume Right	5	24	1	51
cSH	1251	1568	421	527
Volume to Capacity	0.00	0.05	0.04	0.28
Queue Length 95th (ft)	0	4	3	29
Control Delay (s)	0.4	1.8	13.9	14.5
Lane LOS	A	A	B	B
Approach Delay (s)	0.4	1.8	13.9	14.5
Approach LOS			B	B

Intersection Summary				
Average Delay	5.2			
Intersection Capacity Utilization	40.1%	ICU Level of Service		A
Analysis Period (min)	15			

AM 2016
12: Ferrell Rd & Anza Rd

HCM Unsignalized Intersection Capacity Analysis



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	5	1	0	0	4	7	0	2	0	16	2	20
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	1	0	0	4	8	0	2	0	17	2	22
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	12			1			43	24	1	21	20	8
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	12			1			43	24	1	21	20	8
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	98	100	98
cM capacity (veh/h)	1607			1622			936	867	1083	987	871	1074

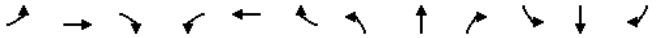
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	7	12	2	41
Volume Left	5	0	0	17
Volume Right	0	8	0	22
cSH	1607	1622	867	1023
Volume to Capacity	0.00	0.00	0.00	0.04
Queue Length 95th (ft)	0	0	0	3
Control Delay (s)	6.0	0.0	9.2	8.7
Lane LOS	A		A	A
Approach Delay (s)	6.0	0.0	9.2	8.7
Approach LOS			A	A

Intersection Summary				
Average Delay	6.7			
Intersection Capacity Utilization	19.9%	ICU Level of Service		A
Analysis Period (min)	15			

PM 2016

1: Forrester Road & I-8 WB Ramp

HCM Unsignalized Intersection Capacity Analysis



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	30	0	53	24	142	0	0	155	33
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	33	0	58	26	154	0	0	168	36
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)						2						
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	422	393	186	393	411	154	204			154		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	422	393	186	393	411	154	204			154		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	94	100	94	98			100		
cM capacity (veh/h)	500	533	856	558	521	892	1367			1426		

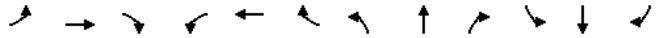
Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	90	180	204
Volume Left	33	26	0
Volume Right	58	0	36
cSH	1396	1367	1700
Volume to Capacity	0.06	0.02	0.12
Queue Length 95th (ft)	5	1	0
Control Delay (s)	10.2	1.2	0.0
Lane LOS	B	A	
Approach Delay (s)	10.2	1.2	0.0
Approach LOS	B		

Intersection Summary				
Average Delay	2.4			
Intersection Capacity Utilization	32.3%	ICU Level of Service	A	
Analysis Period (min)	15			

PM 2016

2: Forrester Road & I-8 EB Ramp

HCM Unsignalized Intersection Capacity Analysis



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	79	0	0	0	0	0	0	101	72	125	49	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	86	0	0	0	0	0	0	110	78	136	53	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)			2									
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	474	513	53	474	474	149	53			188		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	474	513	53	474	474	149	53			188		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	81	100	100	100	100	100	100			90		
cM capacity (veh/h)	463	419	1014	463	441	898	1552			1386		

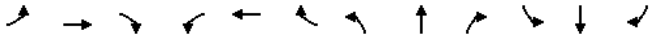
Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	86	188	189
Volume Left	86	0	136
Volume Right	0	78	0
cSH	459	1700	1386
Volume to Capacity	0.19	0.11	0.10
Queue Length 95th (ft)	17	0	8
Control Delay (s)	14.6	0.0	5.9
Lane LOS	B		A
Approach Delay (s)	14.6	0.0	5.9
Approach LOS	B		

Intersection Summary				
Average Delay	5.1			
Intersection Capacity Utilization	33.6%	ICU Level of Service	A	
Analysis Period (min)	15			

PM 2016

3: Forrester Road & McCabe Rd

HCM Unsignalized Intersection Capacity Analysis



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	138	29	1	0	9	11	1	1	1	14	0	12
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	150	32	1	0	10	12	1	1	1	15	0	13
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	22			33			361	354	32	349	348	16
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	22			33			361	354	32	349	348	16
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	91			100			100	100	100	97	100	99
cM capacity (veh/h)	1594			1579			545	518	1042	560	521	1064

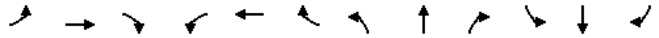
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	183	22	3	28
Volume Left	150	0	1	15
Volume Right	1	12	1	13
cSH	1594	1579	635	717
Volume to Capacity	0.09	0.00	0.01	0.04
Queue Length 95th (ft)	8	0	0	3
Control Delay (s)	6.3	0.0	10.7	10.2
Lane LOS	A		B	B
Approach Delay (s)	6.3	0.0	10.7	10.2
Approach LOS			B	B

Intersection Summary				
Average Delay	6.2			
Intersection Capacity Utilization	25.9%	ICU Level of Service	A	
Analysis Period (min)	15			

PM 2016

4: Brockman Rd & Lyons Rd

HCM Unsignalized Intersection Capacity Analysis



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	1	0	0	2	1	0	147	5	0	17	3
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	1	0	0	2	1	0	160	5	0	18	3
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	185	185	20	183	184	162	22			165		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	185	185	20	183	184	162	22			165		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	100	100			100		
cM capacity (veh/h)	773	709	1058	777	710	882	1594			1413		

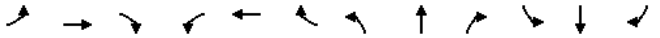
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	1	3	165	22
Volume Left	0	0	0	0
Volume Right	0	1	5	3
cSH	709	759	1594	1413
Volume to Capacity	0.00	0.00	0.00	0.00
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	10.1	9.8	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	10.1	9.8	0.0	0.0
Approach LOS	B	A		

Intersection Summary				
Average Delay	0.2			
Intersection Capacity Utilization	18.0%	ICU Level of Service	A	
Analysis Period (min)	15			

PM 2016

5: Brockman Rd & Kubler Rd

HCM Unsignalized Intersection Capacity Analysis



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	4	0	3	0	0	4	0	148	4	3	7	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	0	3	0	0	4	0	161	4	3	8	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	182	179	8	180	177	163	8			165		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	182	179	8	180	177	163	8			165		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	100	100	100	100	100			100		
cM capacity (veh/h)	775	713	1075	777	715	882	1613			1413		

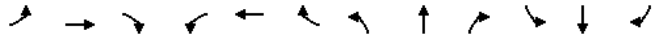
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	8	4	165	11
Volume Left	4	0	0	3
Volume Right	3	4	4	0
cSH	880	882	1613	1413
Volume to Capacity	0.01	0.00	0.00	0.00
Queue Length 95th (ft)	1	0	0	0
Control Delay (s)	9.1	9.1	0.0	2.3
Lane LOS	A	A		A
Approach Delay (s)	9.1	9.1	0.0	2.3
Approach LOS	A	A		

Intersection Summary				
Average Delay	0.7			
Intersection Capacity Utilization	18.7%	ICU Level of Service	A	
Analysis Period (min)	15			

PM 2016

6: Brockman Rd & SR-98

HCM Unsignalized Intersection Capacity Analysis



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	39	152	7	0	31	3	15	115	100	2	11	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	42	165	8	0	34	3	16	125	109	2	12	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	37			173			296	291	169	460	293	35
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	37			173			296	291	169	460	293	35
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			100			97	79	88	99	98	100
cM capacity (veh/h)	1574			1404			632	603	875	369	601	1037

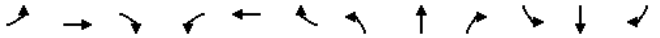
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	215	37	250	15
Volume Left	42	0	16	2
Volume Right	8	3	109	1
cSH	1574	1404	700	567
Volume to Capacity	0.03	0.00	0.36	0.03
Queue Length 95th (ft)	2	0	41	2
Control Delay (s)	1.6	0.0	13.0	11.5
Lane LOS	A		B	B
Approach Delay (s)	1.6	0.0	13.0	11.5
Approach LOS			B	B

Intersection Summary				
Average Delay	7.3			
Intersection Capacity Utilization	38.7%	ICU Level of Service	A	
Analysis Period (min)	15			

PM 2016

7: Brockman Rd & Anza Rd

HCM Unsignalized Intersection Capacity Analysis



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	3	12	0	0	7	5	0	0	0	12	0	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	13	0	0	8	5	0	0	0	13	0	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	13			13			31	33	13	30	30	10
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	13			13			31	33	13	30	30	10
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	99	100	100
cM capacity (veh/h)	1605			1605			975	858	1067	977	861	1071

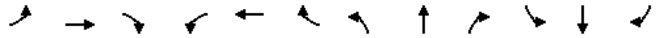
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	16	13	0	14
Volume Left	3	0	0	13
Volume Right	0	5	0	1
cSH	1605	1605	1700	984
Volume to Capacity	0.00	0.00	0.00	0.01
Queue Length 95th (ft)	0	0	0	1
Control Delay (s)	1.5	0.0	0.0	8.7
Lane LOS	A		A	A
Approach Delay (s)	1.5	0.0	0.0	8.7
Approach LOS			A	A

Intersection Summary					
Average Delay	3.4				
Intersection Capacity Utilization	13.3%	ICU Level of Service		A	
Analysis Period (min)	15				

PM 2016

8: La Brucherie Rd & McCabe Rd

HCM Unsignalized Intersection Capacity Analysis



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	25	110	12	2	62	90	16	78	9	94	60	13
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	27	120	13	2	67	98	17	85	10	102	65	14

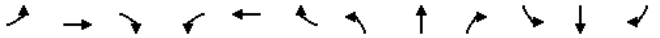
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	160	167	112	182
Volume Left (vph)	27	2	17	102
Volume Right (vph)	13	98	10	14
Hadj (s)	0.02	-0.31	0.01	0.10
Departure Headway (s)	4.9	4.6	5.0	5.0
Degree Utilization, x	0.22	0.21	0.15	0.25
Capacity (veh/h)	683	731	667	676
Control Delay (s)	9.2	8.8	8.9	9.6
Approach Delay (s)	9.2	8.8	8.9	9.6
Approach LOS	A	A	A	A

Intersection Summary					
Delay	9.2				
HCM Level of Service	A				
Intersection Capacity Utilization	42.6%	ICU Level of Service		A	
Analysis Period (min)	15				

PM 2016

9: La Brucherie Rd & Wahl Rd

HCM Unsignalized Intersection Capacity Analysis



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	3	13	2	1	5	3	7	110	8	18	33	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	14	2	1	5	3	8	120	9	20	36	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	9			16			50	33	15	99	32	7
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	9			16			50	33	15	99	32	7
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			99	86	99	97	96	100
cM capacity (veh/h)	1611			1601			917	858	1064	780	858	1075

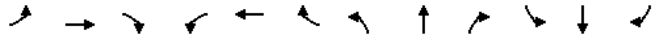
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	20	10	136	57
Volume Left	3	1	8	20
Volume Right	2	3	9	1
cSH	1611	1601	872	833
Volume to Capacity	0.00	0.00	0.16	0.07
Queue Length 95th (ft)	0	0	14	5
Control Delay (s)	1.2	0.8	9.9	9.6
Lane LOS	A	A	A	A
Approach Delay (s)	1.2	0.8	9.9	9.6
Approach LOS			A	A

Intersection Summary					
Average Delay	8.7				
Intersection Capacity Utilization	18.9%	ICU Level of Service		A	
Analysis Period (min)	15				

PM 2016

10: Ferrell Rd/La Brucherie Rd & Kubler Rd

HCM Unsignalized Intersection Capacity Analysis



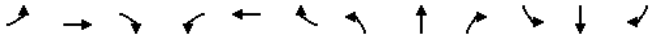
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	13	3	4	2	0	2	14	111	3	1	35	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	14	3	4	2	0	2	15	121	3	1	38	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	195	195	38	199	193	122	38			124		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	195	195	38	199	193	122	38			124		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	100	100	100	100	100	99			100		
cM capacity (veh/h)	756	693	1034	748	695	929	1572			1463		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	22	4	139	39
Volume Left	14	2	15	1
Volume Right	4	2	3	0
cSH	788	829	1572	1463
Volume to Capacity	0.03	0.01	0.01	0.00
Queue Length 95th (ft)	2	0	1	0
Control Delay (s)	9.7	9.4	0.9	0.2
Lane LOS	A	A	A	A
Approach Delay (s)	9.7	9.4	0.9	0.2
Approach LOS	A	A		

Intersection Summary					
Average Delay	1.9				
Intersection Capacity Utilization	22.8%	ICU Level of Service		A	
Analysis Period (min)	15				

PM 2016
11: Ferrell Rd & SR-98

HCM Unsignalized Intersection Capacity Analysis



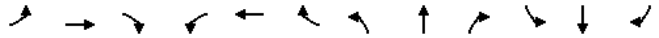
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	34	214	1	12	35	14	3	66	36	24	24	3
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	37	233	1	13	38	15	3	72	39	26	26	3
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	53			234			395	386	233	454	379	46
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	53			234			395	386	233	454	379	46
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			99			99	86	95	94	95	100
cM capacity (veh/h)	1552			1334			528	530	806	429	534	1024

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	271	66	114	55
Volume Left	37	13	3	26
Volume Right	1	15	39	3
cSH	1552	1334	600	492
Volume to Capacity	0.02	0.01	0.19	0.11
Queue Length 95th (ft)	2	1	17	9
Control Delay (s)	1.2	1.6	12.4	13.3
Lane LOS	A	A	B	B
Approach Delay (s)	1.2	1.6	12.4	13.3
Approach LOS			B	B

Intersection Summary				
Average Delay	5.1			
Intersection Capacity Utilization	32.1%	ICU Level of Service	A	
Analysis Period (min)	15			

PM 2016
12: Ferrell Rd & Anza Rd

HCM Unsignalized Intersection Capacity Analysis



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	20	17	1	0	3	3	0	1	0	12	0	9
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	18	1	0	3	3	0	1	0	13	0	10
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	7			20			77	69	19	68	68	5
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	7			20			77	69	19	68	68	5
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			100	100	100	99	100	99
cM capacity (veh/h)	1614			1597			894	810	1059	914	812	1078

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	41	7	1	23
Volume Left	22	0	0	13
Volume Right	1	3	0	10
cSH	1614	1597	810	978
Volume to Capacity	0.01	0.00	0.00	0.02
Queue Length 95th (ft)	1	0	0	2
Control Delay (s)	3.9	0.0	9.4	8.8
Lane LOS	A		A	A
Approach Delay (s)	3.9	0.0	9.4	8.8
Approach LOS			A	A

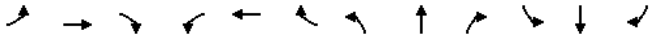
Intersection Summary				
Average Delay	5.2			
Intersection Capacity Utilization	23.3%	ICU Level of Service	A	
Analysis Period (min)	15			

Appendix Q

Year 2016 + Project Construction Intersection LOS Calculations

AM 2016 + Project

1: Forrester Road & I-8 WB Ramp — HCM Unsignalized Intersection Capacity Analysis



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	153	0	131	4	34	0	0	125	70
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	166	0	142	4	37	0	0	136	76
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)						2						
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	291	220	174	220	258	37	212			37		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	291	220	174	220	258	37	212			37		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	77	100	86	100			100		
cM capacity (veh/h)	569	677	870	735	644	1035	1358			1574		

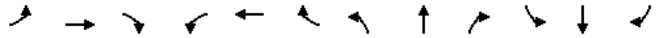
Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	309	41	212
Volume Left	166	4	0
Volume Right	142	0	76
cSH	1364	1358	1700
Volume to Capacity	0.23	0.00	0.12
Queue Length 95th (ft)	22	0	0
Control Delay (s)	10.3	0.8	0.0
Lane LOS	B	A	
Approach Delay (s)	10.3	0.8	0.0
Approach LOS	B		

Intersection Summary				
Average Delay	5.7			
Intersection Capacity Utilization	26.0%	ICU Level of Service	A	
Analysis Period (min)	15			

LOS Engineering, Inc. — Synchro

AM 2016 + Project

2: Forrester Road & I-8 EB Ramp — HCM Unsignalized Intersection Capacity Analysis



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	21	0	12	0	0	0	0	17	9	49	236	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	23	0	13	0	0	0	0	18	10	53	257	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)			2									
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	386	391	257	393	386	23	257			28		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	386	391	257	393	386	23	257			28		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	96	100	98	100	100	100	100			97		
cM capacity (veh/h)	557	526	782	543	529	1053	1308			1585		

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	36	28	310
Volume Left	23	0	53
Volume Right	13	10	0
cSH	876	1700	1585
Volume to Capacity	0.04	0.02	0.03
Queue Length 95th (ft)	3	0	3
Control Delay (s)	11.0	0.0	1.5
Lane LOS	B		A
Approach Delay (s)	11.0	0.0	1.5
Approach LOS	B		

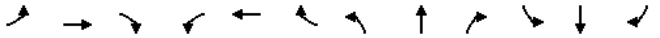
Intersection Summary				
Average Delay	2.3			
Intersection Capacity Utilization	31.8%	ICU Level of Service	A	
Analysis Period (min)	15			

LOS Engineering, Inc. — Synchro

AM 2016 + Project

3: Forrester Road & McCabe Rd

HCM Unsignalized Intersection Capacity Analysis



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	6	7	0	1	43	11	0	1	0	28	0	207
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	7	8	0	1	47	12	0	1	0	30	0	225
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	59			8			301	82	8	76	76	53
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	59			8			301	82	8	76	76	53
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	97	100	78
cM capacity (veh/h)	1545			1613			505	805	1075	909	811	1015

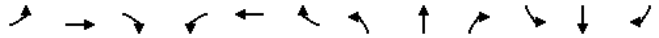
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	14	60	1	255
Volume Left	7	1	0	30
Volume Right	0	12	0	225
cSH	1545	1613	805	1001
Volume to Capacity	0.00	0.00	0.00	0.26
Queue Length 95th (ft)	0	0	0	25
Control Delay (s)	3.4	0.1	9.5	9.8
Lane LOS	A	A	A	A
Approach Delay (s)	3.4	0.1	9.5	9.8
Approach LOS			A	A

Intersection Summary				
Average Delay	7.8			
Intersection Capacity Utilization	31.9%	ICU Level of Service	A	
Analysis Period (min)	15			

AM 2016 + Project

4: Brockman Rd & Lyons Rd

HCM Unsignalized Intersection Capacity Analysis



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	11	0	7	2	1	2	17	5	61	191	3
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	12	0	8	2	1	2	18	5	66	208	3
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	370	370	209	373	369	21	211			24		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	370	370	209	373	369	21	211			24		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	98	100	99	100	100	100			96		
cM capacity (veh/h)	565	535	831	555	536	1056	1360			1591		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	12	11	26	277
Volume Left	0	8	2	66
Volume Right	0	1	5	3
cSH	535	578	1360	1591
Volume to Capacity	0.02	0.02	0.00	0.04
Queue Length 95th (ft)	2	1	0	3
Control Delay (s)	11.9	11.3	0.6	2.0
Lane LOS	B	B	A	A
Approach Delay (s)	11.9	11.3	0.6	2.0
Approach LOS	B	B		

Intersection Summary				
Average Delay	2.6			
Intersection Capacity Utilization	33.4%	ICU Level of Service	A	
Analysis Period (min)	15			