



## MEMORANDUM

TO: Christine Mercado, City of San Diego  
Meghan Cedeño, City of San Diego

FROM: Stephen Cook, PE; Chen Ryan Associates

DATE: January 8, 2018

RE: Old Town Community Plan Update – I-8 Ramps / Taylor Street Supplemental Analysis

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The following Memo summarizes the peak hour intersection level of service (LOS) analyses results for the following three intersections under all six scenarios analyzed for the Old Town Community Plan Update, and determines if the implementation of the Old Town Community Plan would create a significant traffic related impact at any of the three key study intersections:

- Taylor Street / I-8 Eastbound (EB) Ramp
- Taylor Street / Hotel Circle South & Hotel Circle North
- I-8 Westbound (WB) Ramp / Hotel Circle North

It should be noted that these intersections were not included in the original scope of work for the program EIR (approved in 2009); however, it has been determined that since these intersections provide access to a freeway facility that serves the community, they should also be included for evaluation in the program EIR.

This Memo also summarizes the peak hour arterial analysis results and updates the significant impact of Taylor Street, between the Taylor Street / Morena Boulevard intersection and the Taylor Street / I-8 Eastbound (EB) Ramp intersection. It should be noted that this roadway segment was identified as operating at substandard LOS F in the Transportation Impact Study for the Midway-Pacific Highway and Old Town Communities Mobility Element Updates prepared by Chen Ryan Associates (December 2017).

### Intersection Analysis

The process utilized to develop the future year peak hour intersection volumes for the key study intersections is described in Chapter 5.0 of the Midway-Pacific Highway and Old Town Communities Mobility Report prepared by Chen Ryan Associates (March 2017). The SANDAG Series 12 Model Results for each scenario are also provided in Appendix D of the Mobility Study.

**Table 1** displays the LOS results for the key study intersections previously listed. LOS analyses were conducted using the methodologies described in Chapter 2.0 of the Midway-Pacific Highway and Old Town Communities Mobility Report prepared by Chen Ryan Associates (March 2017). Intersection peak

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hour count worksheets are included in **Attachment A**. Intersection LOS calculation worksheets are provided in **Attachment B**. Signal timing was assumed to be optimized under future year conditions.

Table 1 Peak Hour Intersection LOS and Delay Results

Scenario	Intersection	Control	AM Peak Hour		PM Peak Hour		Change from Existing (Sec)		SI? <sup>1</sup>
			Delay (Sec)	LOS	Delay (Sec)	LOS	AM	PM	
Existing	Taylor Street / I-8 EB Ramp	Signal	24.0	C	35.9	D	N/A	N/A	N/A
	Taylor Street / Hotel Circle South & Hotel Circle North <sup>2</sup>	AWSC	9.2	A	16.5	C	N/A	N/A	N/A
	I-8 WB Ramp / Hotel Circle North	Signal	22.8	C	15.9	B	N/A	N/A	N/A
1A	Taylor Street / I-8 EB Ramp	Signal	30.6	C	38.1	D	6.6	2.2	No
	Taylor Street / Hotel Circle South & Hotel Circle North <sup>2</sup>	AWSC	10.3	B	21.5	C	1.1	5.0	No
	I-8 WB Ramp / Hotel Circle North	Signal	41.9	D	19.5	B	19.1	3.6	No
1B	Taylor Street / I-8 EB Ramp	Signal	31.1	C	38.6	D	7.1	2.7	No
	Taylor Street / Hotel Circle South & Hotel Circle North <sup>2</sup>	AWSC	10.4	B	22.6	C	1.2	6.1	No
	I-8 WB Ramp / Hotel Circle North	Signal	41.8	D	19.5	B	19.0	3.6	No
2A	Taylor Street / I-8 EB Ramp	Signal	31.9	C	40.3	D	7.9	4.4	No
	Taylor Street / Hotel Circle South & Hotel Circle North <sup>2</sup>	AWSC	10.5	B	31.5	D	1.3	15.0	No
	I-8 WB Ramp / Hotel Circle North	Signal	46.8	D	18.9	B	24.0	3.0	No
2B	Taylor Street / I-8 EB Ramp	Signal	31.7	C	40.2	D	7.7	4.3	No
	Taylor Street / Hotel Circle South & Hotel Circle North <sup>2</sup>	AWSC	10.4	B	31.3	D	1.2	14.8	No
	I-8 WB Ramp / Hotel Circle North	Signal	46.5	D	18.6	B	23.7	2.7	No
3A	Taylor Street / I-8 EB Ramp	Signal	31.5	C	40.1	D	7.5	4.2	No
	Taylor Street / Hotel Circle South & Hotel Circle North <sup>2</sup>	AWSC	10.3	B	31.0	D	1.1	14.5	No
	I-8 WB Ramp / Hotel Circle North	Signal	46.6	D	18.7	B	23.8	2.8	No
3B	Taylor Street / I-8 EB Ramp	Signal	31.5	C	40.1	D	7.5	4.2	No
	Taylor Street / Hotel Circle South & Hotel Circle North <sup>2</sup>	AWSC	10.3	B	31.0	D	1.1	14.5	No
	I-8 WB Ramp / Hotel Circle North	Signal	46.6	D	18.7	B	23.8	2.8	No

Source: Chen Ryan Associates; January 2018

**Notes:**

<sup>1</sup>SI?: Indicates if the implementation of the Old Town Community Plan will result in a traffic related impact at the intersection.

<sup>2</sup>Due to the limitations of the Synchro Traffic Analysis software, the southbound free-right turn movement at the Taylor Street / Hotel Circle South & Hotel Circle North intersection was removed from the analysis. Since this is a free movement no delay is anticipated; therefore, removing it from the analysis will still accurately reflect intersection delay and LOS results.

N/A: Not applicable to the scenario.

As shown, all three key study intersections are projected to operate at LOS D or better under each Community Plan scenario. Therefore, the proposed project is not anticipated to have a traffic related impact at any of these intersections, regardless of which Community Plan Scenario is adopted.

## Peak Hour Arterial Analysis

The Transportation Impact Study for the Midway-Pacific Highway and Old Town Communities Mobility Element Updates (December 2017) identified Taylor Street, between the Taylor Street / Morena Boulevard intersection and the Taylor Street / I-8 Eastbound (EB) Ramp intersection as operating at substandard LOS F under all of the scenarios. Although the future volumes along this Taylor Street segment would exceed the theoretical capacity of the roadway, none of the proposed project scenarios would have a traffic related impact to this roadway segment for the following reasons:

- Taylor Street, between the Taylor Street / Morena Boulevard intersection and the Taylor Street / I-8 Eastbound (EB) Ramp intersection, is built out to its ultimate classification as a 2-Lane Collector, per the community plan.
- Both the Taylor Street / Morena Boulevard intersection and the Taylor Street / I-8 Eastbound (EB) Ramp intersection operate at acceptable LOS D or better under all of the scenarios and analysis peak hours.
- A peak hour HCM arterial analysis, which estimates average travel speed and facility level of service according to the roadway functional classification, was conducted in Synchro for this roadway segment. This roadway segment is projected to operate at acceptable LOS D or better under all of the scenarios. **Table 2** displays the arterial level of service for this roadway segment under each Community Plan Scenario. The respective analysis worksheets are included in **Attachment C**.

**Table 2** Peak Hour Arterial Analysis Results

Arterial	Direction	Free-Flow Speed (mph)	AM Peak Hour		PM Peak Hour	
			Speed (mph)	LOS	Speed (mph)	LOS
1A	EB	35	28.3	B	27.2	B
	WB	35	21.2	C	21.2	C
1B	EB	35	28.3	B	27.1	B
	WB	35	21.3	C	21.2	C
2A	EB	35	28.2	B	26.7	B
	WB	35	21.1	C	21.2	C
2B	EB	35	28.2	B	26.7	B
	WB	35	21.0	C	21.1	C
3A	EB	35	28.3	B	26.8	B
	WB	35	21.2	C	21.3	C
3B	EB	35	28.3	B	26.8	B
	WB	35	22.3	C	21.3	C

Source: Chen Ryan Associates; January 2018

**Attachment A**  
**Intersection Peak Hour Count Work Sheets**



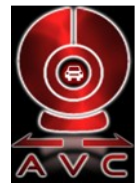
# Turn Count Summary

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



**Location:** Hotel Circle S @ Hotel Circle N  
**Date of Count:** Thursday, November 19, 2015  
**Analysts:** LV/CD  
**Weather:** Sunny  
**AVC Proj No:** 15-0452





**Location:** Hotel Circle S @ Hotel Circle N

AM Period (7:00 AM - 9:00 AM)								
	Southbound		Westbound			Eastbound		TOTAL
	Right	Left	Right	Thru		Thru	Left	
7:00 AM	164	19	14	24		17	22	260
7:15 AM	142	20	26	23		22	20	253
7:30 AM	168	22	24	21		29	35	299
7:45 AM	122	25	26	19		31	41	264
8:00 AM	169	31	24	19		20	41	304
8:15 AM	145	26	28	20		23	29	271
8:30 AM	136	45	25	20		37	35	298
8:45 AM	154	38	22	29		40	41	324
<b>Total</b>	<b>1,200</b>	<b>226</b>	<b>189</b>	<b>175</b>		<b>219</b>	<b>264</b>	<b>2,273</b>

AM Intersection Peak Hour : **8:00 AM - 9:00 AM** Intersection PHF : **0.92**

	Southbound		Westbound			Eastbound		TOTAL
	Right	Left	Right	Thru		Thru	Left	
Volume	604	140	99	88		120	146	1,197
PHF	0.89	0.78	0.88	0.76		0.75	0.89	0.92
Movement PHF	0.93		0.92			0.82		0.92

PM Period (4:00 PM - 6:00 PM)								
	Southbound		Westbound			Eastbound		TOTAL
	Right	Left	Right	Thru		Thru	Left	
4:00 PM	98	30	33	11		89	41	302
4:15 PM	93	36	24	15		97	63	328
4:30 PM	116	36	21	22		111	55	361
4:45 PM	117	38	17	16		99	66	353
5:00 PM	117	43	23	12		124	69	388
5:15 PM	129	39	14	17		93	70	362
5:30 PM	113	25	20	14		136	71	379
5:45 PM	127	45	23	20		119	52	386
<b>Total</b>	<b>910</b>	<b>292</b>	<b>175</b>	<b>127</b>		<b>868</b>	<b>487</b>	<b>2,859</b>

PM Intersection Peak Hour : **5:00 PM - 6:00 PM** Intersection PHF : **0.98**

	Southbound		Westbound			Eastbound		TOTAL
	Right	Left	Right	Thru		Thru	Left	
Volume	486	152	80	63		472	262	1515
PHF	0.94	0.844	0.87	0.788		0.868	0.923	0.98
Movement PHF	0.93		0.83			0.89		0.98





**Attachment B**  
**Synchro Analysis Worksheets**

# HCM Signalized Intersection Capacity Analysis

## 1: Taylor Street & I-8 EB Ramp

Existing AM  
01/04/2018



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↶	↷	↶↷		↶↷	↶
Traffic Volume (vph)	183	106	1341	74	196	114
Future Volume (vph)	183	106	1341	74	196	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	5.5	5.5		6.0	4.7
Lane Util. Factor	1.00	1.00	0.95		0.97	1.00
Frpb, ped/bikes	1.00	1.00	1.00		1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1863	3512		3433	1571
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1863	3512		3433	1571
Peak-hour factor, PHF	0.88	0.88	0.91	0.91	0.91	0.91
Adj. Flow (vph)	208	120	1474	81	215	125
RTOR Reduction (vph)	0	0	4	0	0	9
Lane Group Flow (vph)	208	120	1551	0	215	116
Confl. Peds. (#/hr)						4
Turn Type	Prot	NA	NA		Prot	pm+ov
Protected Phases	5	2	6		4	5
Permitted Phases						4
Actuated Green, G (s)	11.3	56.8	40.8		10.0	21.3
Effective Green, g (s)	11.3	56.8	40.8		10.0	21.3
Actuated g/C Ratio	0.14	0.73	0.52		0.13	0.27
Clearance Time (s)	4.7	5.5	5.5		6.0	4.7
Vehicle Extension (s)	1.0	2.0	2.0		1.0	1.0
Lane Grp Cap (vph)	255	1351	1830		438	427
v/s Ratio Prot	c0.12	0.06	c0.44		c0.06	0.04
v/s Ratio Perm						0.03
v/c Ratio	0.82	0.09	0.85		0.49	0.27
Uniform Delay, d1	32.5	3.2	16.1		31.8	22.4
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	17.1	0.1	5.1		0.3	0.1
Delay (s)	49.5	3.3	21.2		32.1	22.5
Level of Service	D	A	C		C	C
Approach Delay (s)		32.6	21.2		28.6	
Approach LOS		C	C		C	
<b>Intersection Summary</b>						
HCM 2000 Control Delay			24.0		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.78			
Actuated Cycle Length (s)			78.3		Sum of lost time (s)	16.2
Intersection Capacity Utilization			70.2%		ICU Level of Service	C
Analysis Period (min)			15			
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis  
 2: Taylor Street/Hotel Circle South & Hotel Circle North

Existing AM  
 01/04/2018



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↑	↗		↘	
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	146	120	88	99	140	0
Future Volume (vph)	146	120	88	99	140	0
Peak Hour Factor	0.82	0.82	0.92	0.92	0.93	0.93
Hourly flow rate (vph)	178	146	96	108	151	0

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total (vph)	178	146	204	151
Volume Left (vph)	178	0	0	151
Volume Right (vph)	0	0	108	0
Hadj (s)	0.53	0.03	-0.28	0.23
Departure Headway (s)	5.7	5.2	4.5	5.3
Degree Utilization, x	0.28	0.21	0.26	0.22
Capacity (veh/h)	613	676	756	628
Control Delay (s)	9.6	8.3	9.1	9.9
Approach Delay (s)	9.0		9.1	9.9
Approach LOS	A		A	A

Intersection Summary			
Delay		9.2	
Level of Service		A	
Intersection Capacity Utilization		36.9%	ICU Level of Service
Analysis Period (min)		15	A

HCM Signalized Intersection Capacity Analysis  
 3: I-8 WB Ramp/Taylor St & Hotel Circle North

Existing AM  
 01/04/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑	↗		↑↑	↗	↘		↗
Traffic Volume (vph)	0	0	0	0	231	438	0	811	43	137	0	137
Future Volume (vph)	0	0	0	0	231	438	0	811	43	137	0	137
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					6.5	6.5		5.0	5.0	5.0		4.0
Lane Util. Factor					1.00	1.00		0.95	1.00	1.00		1.00
Frt					1.00	0.85		1.00	0.85	1.00		0.85
Flt Protected					1.00	1.00		1.00	1.00	0.95		1.00
Satd. Flow (prot)					1863	1583		3539	1583	1770		1583
Flt Permitted					1.00	1.00		1.00	1.00	0.95		1.00
Satd. Flow (perm)					1863	1583		3539	1583	1770		1583
Peak-hour factor, PHF	0.25	0.25	0.25	0.79	0.79	0.79	0.82	0.82	0.82	0.67	0.67	0.67
Adj. Flow (vph)	0	0	0	0	292	554	0	989	52	204	0	204
RTOR Reduction (vph)	0	0	0	0	0	364	0	0	35	0	0	0
Lane Group Flow (vph)	0	0	0	0	292	190	0	989	17	204	0	204
Turn Type					NA	Perm		NA	Perm	Prot		Free
Protected Phases					6			8		7		
Permitted Phases						6			8			Free
Actuated Green, G (s)					14.6	14.6		19.7	19.7	10.5		61.3
Effective Green, g (s)					14.6	14.6		19.7	19.7	10.5		61.3
Actuated g/C Ratio					0.24	0.24		0.32	0.32	0.17		1.00
Clearance Time (s)					6.5	6.5		5.0	5.0	5.0		
Vehicle Extension (s)					4.0	4.0		1.0	1.0	1.0		
Lane Grp Cap (vph)					443	377		1137	508	303		1583
v/s Ratio Prot					c0.16			c0.28		c0.12		
v/s Ratio Perm						0.12			0.01			0.13
v/c Ratio					0.66	0.50		0.87	0.03	0.67		0.13
Uniform Delay, d1					21.1	20.2		19.6	14.3	23.8		0.0
Progression Factor					1.00	1.00		1.00	1.00	1.00		1.00
Incremental Delay, d2					3.9	1.4		7.1	0.0	4.6		0.2
Delay (s)					25.0	21.7		26.7	14.3	28.4		0.2
Level of Service					C	C		C	B	C		A
Approach Delay (s)		0.0			22.8			26.0			14.3	
Approach LOS		A			C			C			B	

Intersection Summary

HCM 2000 Control Delay	22.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	61.3	Sum of lost time (s)	16.5
Intersection Capacity Utilization	59.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

# HCM Signalized Intersection Capacity Analysis

## 1: Taylor Street & I-8 EB Ramp

Existing PM  
01/04/2018



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↶	↷	↶↷		↶↷	↷
Traffic Volume (vph)	594	342	394	156	311	81
Future Volume (vph)	594	342	394	156	311	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	5.5	5.5		6.0	4.7
Lane Util. Factor	1.00	1.00	0.95		0.97	1.00
Frbp, ped/bikes	1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.96		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1863	3389		3433	1577
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1863	3389		3433	1577
Peak-hour factor, PHF	0.90	0.90	0.95	0.95	0.75	0.75
Adj. Flow (vph)	660	380	415	164	415	108
RTOR Reduction (vph)	0	0	37	0	0	49
Lane Group Flow (vph)	660	380	542	0	415	59
Confl. Peds. (#/hr)					1	
Confl. Bikes (#/hr)						7
Turn Type	Prot	NA	NA		Prot	pm+ov
Protected Phases	5	2	6		4	5
Permitted Phases						4
Actuated Green, G (s)	41.1	76.6	30.8		16.1	57.2
Effective Green, g (s)	41.1	76.6	30.8		16.1	57.2
Actuated g/C Ratio	0.39	0.74	0.30		0.15	0.55
Clearance Time (s)	4.7	5.5	5.5		6.0	4.7
Vehicle Extension (s)	1.0	2.0	2.0		1.0	1.0
Lane Grp Cap (vph)	698	1369	1001		530	865
v/s Ratio Prot	c0.37	0.20	c0.16		c0.12	0.03
v/s Ratio Perm						0.01
v/c Ratio	0.95	0.28	0.54		0.78	0.07
Uniform Delay, d1	30.5	4.6	30.8		42.4	11.0
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	21.3	0.5	2.1		6.9	0.0
Delay (s)	51.8	5.1	32.9		49.2	11.0
Level of Service	D	A	C		D	B
Approach Delay (s)		34.7	32.9		41.3	
Approach LOS		C	C		D	

### Intersection Summary

HCM 2000 Control Delay	35.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	104.2	Sum of lost time (s)	16.2
Intersection Capacity Utilization	71.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis  
 2: Taylor Street/Hotel Circle South & Hotel Circle North

Existing PM  
 01/04/2018



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	262	472	63	80	152	0
Future Volume (vph)	262	472	63	80	152	0
Peak Hour Factor	0.89	0.89	0.83	0.83	0.93	0.93
Hourly flow rate (vph)	294	530	76	96	163	0

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total (vph)	294	530	172	163
Volume Left (vph)	294	0	0	163
Volume Right (vph)	0	0	96	0
Hadj (s)	0.53	0.03	-0.30	0.23
Departure Headway (s)	5.8	5.2	5.0	6.1
Degree Utilization, x	0.47	0.77	0.24	0.28
Capacity (veh/h)	612	674	682	556
Control Delay (s)	12.5	22.5	9.6	11.4
Approach Delay (s)	19.0		9.6	11.4
Approach LOS	C		A	B

Intersection Summary			
Delay		16.5	
Level of Service		C	
Intersection Capacity Utilization		41.3%	ICU Level of Service
Analysis Period (min)		15	A

HCM Signalized Intersection Capacity Analysis  
 3: I-8 WB Ramp/Taylor St & Hotel Circle North

Existing PM  
 01/04/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑	↗		↑↑	↗	↘		↗
Traffic Volume (vph)	0	0	0	0	131	251	0	405	106	218	0	97
Future Volume (vph)	0	0	0	0	131	251	0	405	106	218	0	97
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					6.5	6.5		5.0	5.0	5.0		4.0
Lane Util. Factor					1.00	1.00		0.95	1.00	1.00		1.00
Frbp, ped/bikes					1.00	1.00		1.00	1.00	1.00		0.98
Flpb, ped/bikes					1.00	1.00		1.00	1.00	1.00		1.00
Frt					1.00	0.85		1.00	0.85	1.00		0.85
Flt Protected					1.00	1.00		1.00	1.00	0.95		1.00
Satd. Flow (prot)					1863	1583		3539	1583	1770		1550
Flt Permitted					1.00	1.00		1.00	1.00	0.95		1.00
Satd. Flow (perm)					1863	1583		3539	1583	1770		1550
Peak-hour factor, PHF	0.25	0.25	0.25	0.77	0.77	0.77	0.91	0.91	0.91	0.89	0.89	0.89
Adj. Flow (vph)	0	0	0	0	170	326	0	445	116	245	0	109
RTOR Reduction (vph)	0	0	0	0	0	250	0	0	92	0	0	0
Lane Group Flow (vph)	0	0	0	0	170	76	0	445	24	245	0	109
Confl. Bikes (#/hr)												3
Turn Type					NA	Perm		NA	Perm	Prot		Free
Protected Phases					6			8		7		
Permitted Phases						6			8			Free
Actuated Green, G (s)					11.2	11.2		9.9	9.9	10.2		47.8
Effective Green, g (s)					11.2	11.2		9.9	9.9	10.2		47.8
Actuated g/C Ratio					0.23	0.23		0.21	0.21	0.21		1.00
Clearance Time (s)					6.5	6.5		5.0	5.0	5.0		
Vehicle Extension (s)					4.0	4.0		1.0	1.0	1.0		
Lane Grp Cap (vph)					436	370		732	327	377		1550
v/s Ratio Prot					c0.09			c0.13		c0.14		
v/s Ratio Perm						0.05			0.02			0.07
v/c Ratio					0.39	0.21		0.61	0.07	0.65		0.07
Uniform Delay, d1					15.4	14.7		17.2	15.3	17.2		0.0
Progression Factor					1.00	1.00		1.00	1.00	1.00		1.00
Incremental Delay, d2					0.8	0.4		1.0	0.0	2.9		0.1
Delay (s)					16.2	15.1		18.2	15.3	20.1		0.1
Level of Service					B	B		B	B	C		A
Approach Delay (s)		0.0			15.5			17.6			13.9	
Approach LOS		A			B			B			B	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			15.9		HCM 2000 Level of Service				B			
HCM 2000 Volume to Capacity ratio			0.54									
Actuated Cycle Length (s)			47.8		Sum of lost time (s)				16.5			
Intersection Capacity Utilization			43.1%		ICU Level of Service				A			
Analysis Period (min)			15									
c Critical Lane Group												

# HCM Signalized Intersection Capacity Analysis

## 1: Taylor Street & I-8 EB Ramp

1A - AM  
01/04/2018



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	200	115	1640	90	220	125
Future Volume (vph)	200	115	1640	90	220	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	5.5	5.5		6.0	4.7
Lane Util. Factor	1.00	1.00	0.95		0.97	1.00
Frpb, ped/bikes	1.00	1.00	1.00		1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1863	3512		3433	1571
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1863	3512		3433	1571
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	217	125	1783	98	239	136
RTOR Reduction (vph)	0	0	3	0	0	9
Lane Group Flow (vph)	217	125	1878	0	239	127
Confl. Peds. (#/hr)						4
Turn Type	Prot	NA	NA		Prot	pm+ov
Protected Phases	5	2	6		4	5
Permitted Phases						4
Actuated Green, G (s)	15.7	86.7	66.3		12.3	28.0
Effective Green, g (s)	15.7	86.7	66.3		12.3	28.0
Actuated g/C Ratio	0.14	0.78	0.60		0.11	0.25
Clearance Time (s)	4.7	5.5	5.5		6.0	4.7
Vehicle Extension (s)	1.0	2.0	2.0		1.0	1.0
Lane Grp Cap (vph)	251	1461	2107		382	398
v/s Ratio Prot	c0.12	0.07	c0.53		c0.07	0.05
v/s Ratio Perm						0.04
v/c Ratio	0.86	0.09	0.89		0.63	0.32
Uniform Delay, d1	46.4	2.7	19.0		46.9	33.5
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	24.4	0.1	6.2		2.3	0.2
Delay (s)	70.8	2.9	25.2		49.2	33.7
Level of Service	E	A	C		D	C
Approach Delay (s)		46.0	25.2		43.6	
Approach LOS		D	C		D	
<b>Intersection Summary</b>						
HCM 2000 Control Delay			30.6		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.85			
Actuated Cycle Length (s)			110.5		Sum of lost time (s)	16.2
Intersection Capacity Utilization			80.6%		ICU Level of Service	D
Analysis Period (min)			15			
c Critical Lane Group						



HCM Unsignalized Intersection Capacity Analysis  
 2: Taylor Street/Hotel Circle South & Hotel Circle North

1A - AM  
 01/04/2018



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↑	↗		↙	
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	175	160	115	125	190	0
Future Volume (vph)	175	160	115	125	190	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	190	174	125	136	207	0

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total (vph)	190	174	261	207
Volume Left (vph)	190	0	0	207
Volume Right (vph)	0	0	136	0
Hadj (s)	0.53	0.03	-0.28	0.23
Departure Headway (s)	5.9	5.4	4.8	5.6
Degree Utilization, x	0.31	0.26	0.35	0.32
Capacity (veh/h)	582	638	712	591
Control Delay (s)	10.4	9.1	10.4	11.2
Approach Delay (s)	9.8		10.4	11.2
Approach LOS	A		B	B

Intersection Summary			
Delay		10.3	
Level of Service		B	
Intersection Capacity Utilization		44.1%	ICU Level of Service A
Analysis Period (min)		15	

HCM Signalized Intersection Capacity Analysis  
 3: I-8 WB Ramp/Taylor St & Hotel Circle North

1A - AM  
 01/04/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑	↗		↑↑	↗	↘		↗
Traffic Volume (vph)	0	0	0	0	335	630	0	1090	60	185	0	180
Future Volume (vph)	0	0	0	0	335	630	0	1090	60	185	0	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					6.5	6.5		5.0	5.0	5.0		4.0
Lane Util. Factor					1.00	1.00		0.95	1.00	1.00		1.00
Frt					1.00	0.85		1.00	0.85	1.00		0.85
Flt Protected					1.00	1.00		1.00	1.00	0.95		1.00
Satd. Flow (prot)					1863	1583		3539	1583	1770		1583
Flt Permitted					1.00	1.00		1.00	1.00	0.95		1.00
Satd. Flow (perm)					1863	1583		3539	1583	1770		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	364	685	0	1185	65	201	0	196
RTOR Reduction (vph)	0	0	0	0	0	209	0	0	41	0	0	0
Lane Group Flow (vph)	0	0	0	0	364	476	0	1185	24	201	0	196
Turn Type					NA	Perm		NA	Perm	Prot		Free
Protected Phases					6			8		7		
Permitted Phases						6			8			Free
Actuated Green, G (s)					41.4	41.4		44.7	44.7	17.0		119.6
Effective Green, g (s)					41.4	41.4		44.7	44.7	17.0		119.6
Actuated g/C Ratio					0.35	0.35		0.37	0.37	0.14		1.00
Clearance Time (s)					6.5	6.5		5.0	5.0	5.0		
Vehicle Extension (s)					4.0	4.0		1.0	1.0	1.0		
Lane Grp Cap (vph)					644	547		1322	591	251		1583
v/s Ratio Prot					0.20			c0.33		c0.11		
v/s Ratio Perm						c0.30			0.02			0.12
v/c Ratio					0.57	0.87		0.90	0.04	0.80		0.12
Uniform Delay, d1					31.8	36.6		35.3	23.8	49.7		0.0
Progression Factor					1.00	1.00		1.00	1.00	1.00		1.00
Incremental Delay, d2					1.4	14.2		8.1	0.0	15.7		0.2
Delay (s)					33.2	50.8		43.3	23.8	65.4		0.2
Level of Service					C	D		D	C	E		A
Approach Delay (s)		0.0			44.7			42.3			33.2	
Approach LOS		A			D			D			C	

Intersection Summary

HCM 2000 Control Delay	41.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	119.6	Sum of lost time (s)	16.5
Intersection Capacity Utilization	78.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

# HCM Signalized Intersection Capacity Analysis

## 1: Taylor Street & I-8 EB Ramp

1A - PM  
01/04/2018



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↶	↷	↶↷		↶↷	↶
Traffic Volume (vph)	645	450	480	190	355	90
Future Volume (vph)	645	450	480	190	355	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	5.5	5.5		6.0	4.7
Lane Util. Factor	1.00	1.00	0.95		0.97	1.00
Frpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.96		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1863	3388		3433	1577
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1863	3388		3433	1577
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	701	489	522	207	386	98
RTOR Reduction (vph)	0	0	33	0	0	30
Lane Group Flow (vph)	701	489	696	0	386	68
Confl. Peds. (#/hr)					1	
Confl. Bikes (#/hr)						7
Turn Type	Prot	NA	NA		Prot	pm+ov
Protected Phases	5	2	6		4	5
Permitted Phases						4
Actuated Green, G (s)	47.6	86.6	34.3		16.3	63.9
Effective Green, g (s)	47.6	86.6	34.3		16.3	63.9
Actuated g/C Ratio	0.42	0.76	0.30		0.14	0.56
Clearance Time (s)	4.7	5.5	5.5		6.0	4.7
Vehicle Extension (s)	1.0	2.0	2.0		1.0	1.0
Lane Grp Cap (vph)	736	1410	1015		489	880
v/s Ratio Prot	c0.40	0.26	c0.21		c0.11	0.03
v/s Ratio Perm						0.01
v/c Ratio	0.95	0.35	0.69		0.79	0.08
Uniform Delay, d1	32.3	4.6	35.3		47.4	11.6
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	22.0	0.7	3.8		7.7	0.0
Delay (s)	54.3	5.3	39.1		55.0	11.7
Level of Service	D	A	D		E	B
Approach Delay (s)		34.1	39.1		46.3	
Approach LOS		C	D		D	

### Intersection Summary

HCM 2000 Control Delay	38.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	114.4	Sum of lost time (s)	16.2
Intersection Capacity Utilization	78.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis  
 2: Taylor Street/Hotel Circle South & Hotel Circle North

1A - PM  
 01/04/2018



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	290	515	80	120	205	0
Future Volume (vph)	290	515	80	120	205	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	315	560	87	130	223	0

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total (vph)	315	560	217	223
Volume Left (vph)	315	0	0	223
Volume Right (vph)	0	0	130	0
Hadj (s)	0.53	0.03	-0.33	0.23
Departure Headway (s)	6.1	5.6	5.4	6.3
Degree Utilization, x	0.53	0.87	0.32	0.39
Capacity (veh/h)	581	639	643	551
Control Delay (s)	14.6	32.8	10.9	13.3
Approach Delay (s)	26.2		10.9	13.3
Approach LOS	D		B	B

Intersection Summary			
Delay		21.5	
Level of Service		C	
Intersection Capacity Utilization		49.1%	ICU Level of Service A
Analysis Period (min)		15	

HCM Signalized Intersection Capacity Analysis  
 3: I-8 WB Ramp/Taylor St & Hotel Circle North

1A - PM  
 01/04/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑	↗		↑↑	↗	↘		↗
Traffic Volume (vph)	0	0	0	0	190	365	0	545	145	290	0	120
Future Volume (vph)	0	0	0	0	190	365	0	545	145	290	0	120
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					6.5	6.5		5.0	5.0	5.0		4.0
Lane Util. Factor					1.00	1.00		0.95	1.00	1.00		1.00
Frbp, ped/bikes					1.00	1.00		1.00	1.00	1.00		0.98
Flpb, ped/bikes					1.00	1.00		1.00	1.00	1.00		1.00
Frt					1.00	0.85		1.00	0.85	1.00		0.85
Flt Protected					1.00	1.00		1.00	1.00	0.95		1.00
Satd. Flow (prot)					1863	1583		3539	1583	1770		1550
Flt Permitted					1.00	1.00		1.00	1.00	0.95		1.00
Satd. Flow (perm)					1863	1583		3539	1583	1770		1550
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	207	397	0	592	158	315	0	130
RTOR Reduction (vph)	0	0	0	0	0	305	0	0	122	0	0	0
Lane Group Flow (vph)	0	0	0	0	207	92	0	592	36	315	0	130
Confl. Bikes (#/hr)												3
Turn Type					NA	Perm		NA	Perm	Prot		Free
Protected Phases					6			8		7		
Permitted Phases						6			8			Free
Actuated Green, G (s)					12.6	12.6		12.4	12.4	12.6		54.1
Effective Green, g (s)					12.6	12.6		12.4	12.4	12.6		54.1
Actuated g/C Ratio					0.23	0.23		0.23	0.23	0.23		1.00
Clearance Time (s)					6.5	6.5		5.0	5.0	5.0		
Vehicle Extension (s)					4.0	4.0		1.0	1.0	1.0		
Lane Grp Cap (vph)					433	368		811	362	412		1550
v/s Ratio Prot					c0.11			c0.17		c0.18		
v/s Ratio Perm						0.06			0.02			0.08
v/c Ratio					0.48	0.25		0.73	0.10	0.76		0.08
Uniform Delay, d1					17.9	16.9		19.3	16.4	19.4		0.0
Progression Factor					1.00	1.00		1.00	1.00	1.00		1.00
Incremental Delay, d2					1.1	0.5		2.8	0.0	7.4		0.1
Delay (s)					19.0	17.4		22.1	16.5	26.8		0.1
Level of Service					B	B		C	B	C		A
Approach Delay (s)		0.0			18.0			20.9			19.0	
Approach LOS		A			B			C			B	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			19.5		HCM 2000 Level of Service				B			
HCM 2000 Volume to Capacity ratio			0.66									
Actuated Cycle Length (s)			54.1		Sum of lost time (s)				16.5			
Intersection Capacity Utilization			54.0%		ICU Level of Service			A				
Analysis Period (min)			15									
c Critical Lane Group												

# HCM Signalized Intersection Capacity Analysis

## 1: Taylor Street & I-8 EB Ramp

1B - AM  
01/04/2018



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	→	↕		↗	↘
Traffic Volume (vph)	205	120	1640	90	220	125
Future Volume (vph)	205	120	1640	90	220	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	5.5	5.5		6.0	4.7
Lane Util. Factor	1.00	1.00	0.95		0.97	1.00
Frbp, ped/bikes	1.00	1.00	1.00		1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1863	3512		3433	1571
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1863	3512		3433	1571
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	223	130	1783	98	239	136
RTOR Reduction (vph)	0	0	3	0	0	9
Lane Group Flow (vph)	223	130	1878	0	239	127
Confl. Peds. (#/hr)						4
Turn Type	Prot	NA	NA		Prot	pm+ov
Protected Phases	5	2	6		4	5
Permitted Phases						4
Actuated Green, G (s)	16.0	86.7	66.0		12.3	28.3
Effective Green, g (s)	16.0	86.7	66.0		12.3	28.3
Actuated g/C Ratio	0.14	0.78	0.60		0.11	0.26
Clearance Time (s)	4.7	5.5	5.5		6.0	4.7
Vehicle Extension (s)	1.0	2.0	2.0		1.0	1.0
Lane Grp Cap (vph)	256	1461	2097		382	402
v/s Ratio Prot	c0.13	0.07	c0.53		c0.07	0.05
v/s Ratio Perm						0.04
v/c Ratio	0.87	0.09	0.90		0.63	0.32
Uniform Delay, d1	46.2	2.8	19.3		46.9	33.3
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	25.3	0.1	6.5		2.3	0.2
Delay (s)	71.6	2.9	25.7		49.2	33.4
Level of Service	E	A	C		D	C
Approach Delay (s)		46.3	25.7		43.5	
Approach LOS		D	C		D	
<b>Intersection Summary</b>						
HCM 2000 Control Delay			31.1		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.86			
Actuated Cycle Length (s)			110.5		Sum of lost time (s)	16.2
Intersection Capacity Utilization			80.8%		ICU Level of Service	D
Analysis Period (min)			15			
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis  
 2: Taylor Street/Hotel Circle South & Hotel Circle North

1B - AM  
 01/04/2018



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↑	↗		↙	
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	180	160	115	125	190	0
Future Volume (vph)	180	160	115	125	190	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	196	174	125	136	207	0

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total (vph)	196	174	261	207
Volume Left (vph)	196	0	0	207
Volume Right (vph)	0	0	136	0
Hadj (s)	0.53	0.03	-0.28	0.23
Departure Headway (s)	5.9	5.4	4.8	5.6
Degree Utilization, x	0.32	0.26	0.35	0.32
Capacity (veh/h)	582	638	711	589
Control Delay (s)	10.5	9.1	10.4	11.3
Approach Delay (s)	9.9		10.4	11.3
Approach LOS	A		B	B

**Intersection Summary**

Delay	10.4
Level of Service	B
Intersection Capacity Utilization	44.4%
ICU Level of Service	A
Analysis Period (min)	15

HCM Signalized Intersection Capacity Analysis  
 3: I-8 WB Ramp/Taylor St & Hotel Circle North

1B - AM  
 01/04/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑	↗		↑↑	↗	↘		↗
Traffic Volume (vph)	0	0	0	0	335	630	0	1090	60	185	0	185
Future Volume (vph)	0	0	0	0	335	630	0	1090	60	185	0	185
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					6.5	6.5		5.0	5.0	5.0		4.0
Lane Util. Factor					1.00	1.00		0.95	1.00	1.00		1.00
Frt					1.00	0.85		1.00	0.85	1.00		0.85
Flt Protected					1.00	1.00		1.00	1.00	0.95		1.00
Satd. Flow (prot)					1863	1583		3539	1583	1770		1583
Flt Permitted					1.00	1.00		1.00	1.00	0.95		1.00
Satd. Flow (perm)					1863	1583		3539	1583	1770		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	364	685	0	1185	65	201	0	201
RTOR Reduction (vph)	0	0	0	0	0	209	0	0	41	0	0	0
Lane Group Flow (vph)	0	0	0	0	364	476	0	1185	24	201	0	201
Turn Type					NA	Perm		NA	Perm	Prot		Free
Protected Phases					6			8		7		
Permitted Phases						6			8			Free
Actuated Green, G (s)					41.4	41.4		44.7	44.7	17.0		119.6
Effective Green, g (s)					41.4	41.4		44.7	44.7	17.0		119.6
Actuated g/C Ratio					0.35	0.35		0.37	0.37	0.14		1.00
Clearance Time (s)					6.5	6.5		5.0	5.0	5.0		
Vehicle Extension (s)					4.0	4.0		1.0	1.0	1.0		
Lane Grp Cap (vph)					644	547		1322	591	251		1583
v/s Ratio Prot					0.20			c0.33		c0.11		
v/s Ratio Perm						c0.30			0.02			0.13
v/c Ratio					0.57	0.87		0.90	0.04	0.80		0.13
Uniform Delay, d1					31.8	36.6		35.3	23.8	49.7		0.0
Progression Factor					1.00	1.00		1.00	1.00	1.00		1.00
Incremental Delay, d2					1.4	14.2		8.1	0.0	15.7		0.2
Delay (s)					33.2	50.8		43.3	23.8	65.4		0.2
Level of Service					C	D		D	C	E		A
Approach Delay (s)		0.0			44.7			42.3			32.8	
Approach LOS		A			D			D			C	

Intersection Summary

HCM 2000 Control Delay	41.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	119.6	Sum of lost time (s)	16.5
Intersection Capacity Utilization	78.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



# HCM Signalized Intersection Capacity Analysis

## 1: Taylor Street & I-8 EB Ramp

1B - PM  
01/04/2018



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	660	460	480	190	355	90
Future Volume (vph)	660	460	480	190	355	90
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	5.5	5.5		6.0	4.7
Lane Util. Factor	1.00	1.00	0.95		0.97	1.00
Frpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.96		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1863	3388		3433	1577
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1863	3388		3433	1577
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	717	500	522	207	386	98
RTOR Reduction (vph)	0	0	33	0	0	30
Lane Group Flow (vph)	717	500	696	0	386	68
Confl. Peds. (#/hr)					1	
Confl. Bikes (#/hr)						7
Turn Type	Prot	NA	NA		Prot	pm+ov
Protected Phases	5	2	6		4	5
Permitted Phases						4
Actuated Green, G (s)	48.3	86.6	33.6		16.3	64.6
Effective Green, g (s)	48.3	86.6	33.6		16.3	64.6
Actuated g/C Ratio	0.42	0.76	0.29		0.14	0.56
Clearance Time (s)	4.7	5.5	5.5		6.0	4.7
Vehicle Extension (s)	1.0	2.0	2.0		1.0	1.0
Lane Grp Cap (vph)	747	1410	995		489	890
v/s Ratio Prot	c0.41	0.27	c0.21		c0.11	0.03
v/s Ratio Perm						0.01
v/c Ratio	0.96	0.35	0.70		0.79	0.08
Uniform Delay, d1	32.1	4.6	35.9		47.4	11.3
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	23.0	0.7	4.1		7.7	0.0
Delay (s)	55.1	5.3	40.0		55.0	11.3
Level of Service	E	A	D		E	B
Approach Delay (s)		34.7	40.0		46.2	
Approach LOS		C	D		D	

### Intersection Summary

HCM 2000 Control Delay	38.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	114.4	Sum of lost time (s)	16.2
Intersection Capacity Utilization	79.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis  
 2: Taylor Street/Hotel Circle South & Hotel Circle North

1B - PM  
 01/04/2018



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	290	525	80	120	205	0
Future Volume (vph)	290	525	80	120	205	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	315	571	87	130	223	0

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total (vph)	315	571	217	223
Volume Left (vph)	315	0	0	223
Volume Right (vph)	0	0	130	0
Hadj (s)	0.53	0.03	-0.33	0.23
Departure Headway (s)	6.1	5.6	5.4	6.3
Degree Utilization, x	0.53	0.88	0.32	0.39
Capacity (veh/h)	581	640	642	552
Control Delay (s)	14.6	35.1	10.9	13.4
Approach Delay (s)	27.8		10.9	13.4
Approach LOS	D		B	B

**Intersection Summary**

Delay	22.6
Level of Service	C
Intersection Capacity Utilization	49.1%
ICU Level of Service	A
Analysis Period (min)	15

HCM Signalized Intersection Capacity Analysis  
 3: I-8 WB Ramp/Taylor St & Hotel Circle North

1B - PM  
 01/04/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑	↗		↑↑	↗	↘		↗
Traffic Volume (vph)	0	0	0	0	190	365	0	545	145	290	0	120
Future Volume (vph)	0	0	0	0	190	365	0	545	145	290	0	120
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					6.5	6.5		5.0	5.0	5.0		4.0
Lane Util. Factor					1.00	1.00		0.95	1.00	1.00		1.00
Frbp, ped/bikes					1.00	1.00		1.00	1.00	1.00		0.98
Flpb, ped/bikes					1.00	1.00		1.00	1.00	1.00		1.00
Frt					1.00	0.85		1.00	0.85	1.00		0.85
Flt Protected					1.00	1.00		1.00	1.00	0.95		1.00
Satd. Flow (prot)					1863	1583		3539	1583	1770		1550
Flt Permitted					1.00	1.00		1.00	1.00	0.95		1.00
Satd. Flow (perm)					1863	1583		3539	1583	1770		1550
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	207	397	0	592	158	315	0	130
RTOR Reduction (vph)	0	0	0	0	0	305	0	0	122	0	0	0
Lane Group Flow (vph)	0	0	0	0	207	92	0	592	36	315	0	130
Confl. Bikes (#/hr)												3
Turn Type					NA	Perm		NA	Perm	Prot		Free
Protected Phases					6			8		7		
Permitted Phases						6			8			Free
Actuated Green, G (s)					12.6	12.6		12.4	12.4	12.6		54.1
Effective Green, g (s)					12.6	12.6		12.4	12.4	12.6		54.1
Actuated g/C Ratio					0.23	0.23		0.23	0.23	0.23		1.00
Clearance Time (s)					6.5	6.5		5.0	5.0	5.0		
Vehicle Extension (s)					4.0	4.0		1.0	1.0	1.0		
Lane Grp Cap (vph)					433	368		811	362	412		1550
v/s Ratio Prot					c0.11			c0.17		c0.18		
v/s Ratio Perm						0.06			0.02			0.08
v/c Ratio					0.48	0.25		0.73	0.10	0.76		0.08
Uniform Delay, d1					17.9	16.9		19.3	16.4	19.4		0.0
Progression Factor					1.00	1.00		1.00	1.00	1.00		1.00
Incremental Delay, d2					1.1	0.5		2.8	0.0	7.4		0.1
Delay (s)					19.0	17.4		22.1	16.5	26.8		0.1
Level of Service					B	B		C	B	C		A
Approach Delay (s)		0.0			18.0			20.9			19.0	
Approach LOS		A			B			C			B	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			19.5		HCM 2000 Level of Service				B			
HCM 2000 Volume to Capacity ratio			0.66									
Actuated Cycle Length (s)			54.1		Sum of lost time (s)				16.5			
Intersection Capacity Utilization			54.0%		ICU Level of Service				A			
Analysis Period (min)			15									
c Critical Lane Group												

# HCM Signalized Intersection Capacity Analysis

## 1: Taylor Street & I-8 EB Ramp

2B - AM  
01/04/2018



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↶	↷	↶↷		↶↷	↶
Traffic Volume (vph)	205	120	1655	100	220	130
Future Volume (vph)	205	120	1655	100	220	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	5.5	5.5		6.0	4.7
Lane Util. Factor	1.00	1.00	0.95		0.97	1.00
Frpb, ped/bikes	1.00	1.00	1.00		1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1863	3509		3433	1571
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1863	3509		3433	1571
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	223	130	1799	109	239	141
RTOR Reduction (vph)	0	0	3	0	0	8
Lane Group Flow (vph)	223	130	1905	0	239	133
Confl. Peds. (#/hr)						4
Turn Type	Prot	NA	NA		Prot	pm+ov
Protected Phases	5	2	6		4	5
Permitted Phases						4
Actuated Green, G (s)	16.0	86.7	66.0		12.3	28.3
Effective Green, g (s)	16.0	86.7	66.0		12.3	28.3
Actuated g/C Ratio	0.14	0.78	0.60		0.11	0.26
Clearance Time (s)	4.7	5.5	5.5		6.0	4.7
Vehicle Extension (s)	1.0	2.0	2.0		1.0	1.0
Lane Grp Cap (vph)	256	1461	2095		382	402
v/s Ratio Prot	c0.13	0.07	c0.54		c0.07	0.05
v/s Ratio Perm						0.04
v/c Ratio	0.87	0.09	0.91		0.63	0.33
Uniform Delay, d1	46.2	2.8	19.6		46.9	33.4
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	25.3	0.1	7.3		2.3	0.2
Delay (s)	71.6	2.9	26.9		49.2	33.6
Level of Service	E	A	C		D	C
Approach Delay (s)		46.3	26.9		43.4	
Approach LOS		D	C		D	
<b>Intersection Summary</b>						
HCM 2000 Control Delay			31.9		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.87			
Actuated Cycle Length (s)			110.5		Sum of lost time (s)	16.2
Intersection Capacity Utilization			81.6%		ICU Level of Service	D
Analysis Period (min)			15			
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis  
 2: Taylor Street/Hotel Circle South & Hotel Circle North

2B - AM  
 01/04/2018



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↑	↗		↙	
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	180	160	120	135	190	0
Future Volume (vph)	180	160	120	135	190	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	196	174	130	147	207	0

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total (vph)	196	174	277	207
Volume Left (vph)	196	0	0	207
Volume Right (vph)	0	0	147	0
Hadj (s)	0.53	0.03	-0.28	0.23
Departure Headway (s)	6.0	5.4	4.8	5.6
Degree Utilization, x	0.32	0.26	0.37	0.32
Capacity (veh/h)	579	636	712	585
Control Delay (s)	10.6	9.2	10.6	11.3
Approach Delay (s)	9.9		10.6	11.3
Approach LOS	A		B	B

Intersection Summary			
Delay		10.5	
Level of Service		B	
Intersection Capacity Utilization		45.3%	ICU Level of Service A
Analysis Period (min)		15	

HCM Signalized Intersection Capacity Analysis  
 3: I-8 WB Ramp/Taylor St & Hotel Circle North

2B - AM  
 01/04/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑	↗		↑↑	↗	↘		↗
Traffic Volume (vph)	0	0	0	0	335	635	0	1180	60	195	0	195
Future Volume (vph)	0	0	0	0	335	635	0	1180	60	195	0	195
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					6.5	6.5		5.0	5.0	5.0		4.0
Lane Util. Factor					1.00	1.00		0.95	1.00	1.00		1.00
Frt					1.00	0.85		1.00	0.85	1.00		0.85
Flt Protected					1.00	1.00		1.00	1.00	0.95		1.00
Satd. Flow (prot)					1863	1583		3539	1583	1770		1583
Flt Permitted					1.00	1.00		1.00	1.00	0.95		1.00
Satd. Flow (perm)					1863	1583		3539	1583	1770		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	364	690	0	1283	65	212	0	212
RTOR Reduction (vph)	0	0	0	0	0	210	0	0	40	0	0	0
Lane Group Flow (vph)	0	0	0	0	364	480	0	1283	25	212	0	212
Turn Type					NA	Perm		NA	Perm	Prot		Free
Protected Phases					6			8		7		
Permitted Phases						6			8			Free
Actuated Green, G (s)					42.8	42.8		49.1	49.1	17.9		126.3
Effective Green, g (s)					42.8	42.8		49.1	49.1	17.9		126.3
Actuated g/C Ratio					0.34	0.34		0.39	0.39	0.14		1.00
Clearance Time (s)					6.5	6.5		5.0	5.0	5.0		
Vehicle Extension (s)					4.0	4.0		1.0	1.0	1.0		
Lane Grp Cap (vph)					631	536		1375	615	250		1583
v/s Ratio Prot					0.20			c0.36		c0.12		
v/s Ratio Perm						c0.30			0.02			0.13
v/c Ratio					0.58	0.90		0.93	0.04	0.85		0.13
Uniform Delay, d1					34.3	39.6		37.0	24.0	52.9		0.0
Progression Factor					1.00	1.00		1.00	1.00	1.00		1.00
Incremental Delay, d2					1.5	17.8		11.5	0.0	21.7		0.2
Delay (s)					35.8	57.4		48.6	24.0	74.6		0.2
Level of Service					D	E		D	C	E		A
Approach Delay (s)		0.0			50.0			47.4			37.4	
Approach LOS		A			D			D			D	

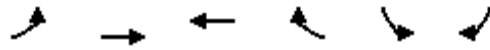
Intersection Summary			
HCM 2000 Control Delay	46.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	126.3	Sum of lost time (s)	16.5
Intersection Capacity Utilization	81.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

# HCM Signalized Intersection Capacity Analysis

## 1: Taylor Street & I-8 EB Ramp

2A PM  
01/04/2018



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↶	↷	↷↶		↷↶	↷
Traffic Volume (vph)	665	555	550	200	350	90
Future Volume (vph)	665	555	550	200	350	90
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	5.5	5.5		6.0	4.7
Lane Util. Factor	1.00	1.00	0.95		0.97	1.00
Frbp, ped/bikes	1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.96		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1863	3398		3433	1577
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1863	3398		3433	1577
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	723	603	598	217	380	98
RTOR Reduction (vph)	0	0	32	0	0	28
Lane Group Flow (vph)	723	603	783	0	380	70
Confl. Peds. (#/hr)					1	
Confl. Bikes (#/hr)						7
Turn Type	Prot	NA	NA		Prot	pm+ov
Protected Phases	5	2	6		4	5
Permitted Phases						4
Actuated Green, G (s)	41.4	76.6	30.5		15.2	56.6
Effective Green, g (s)	41.4	76.6	30.5		15.2	56.6
Actuated g/C Ratio	0.40	0.74	0.30		0.15	0.55
Clearance Time (s)	4.7	5.5	5.5		6.0	4.7
Vehicle Extension (s)	1.0	2.0	2.0		1.0	1.0
Lane Grp Cap (vph)	709	1381	1003		505	864
v/s Ratio Prot	c0.41	0.32	c0.23		c0.11	0.03
v/s Ratio Perm						0.01
v/c Ratio	1.02	0.44	0.78		0.75	0.08
Uniform Delay, d1	30.9	5.1	33.3		42.2	11.0
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	38.9	1.0	6.0		5.6	0.0
Delay (s)	69.8	6.1	39.3		47.8	11.1
Level of Service	E	A	D		D	B
Approach Delay (s)		40.8	39.3		40.3	
Approach LOS		D	D		D	

### Intersection Summary

HCM 2000 Control Delay	40.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	103.3	Sum of lost time (s)	16.2
Intersection Capacity Utilization	81.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis  
 2: Taylor Street/Hotel Circle South & Hotel Circle North

2A PM  
 01/04/2018



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	325	580	90	110	210	0
Future Volume (vph)	325	580	90	110	210	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	353	630	98	120	228	0

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total (vph)	353	630	218	228
Volume Left (vph)	353	0	0	228
Volume Right (vph)	0	0	120	0
Hadj (s)	0.53	0.03	-0.30	0.23
Departure Headway (s)	6.1	5.6	5.5	6.4
Degree Utilization, x	0.60	0.98	0.33	0.41
Capacity (veh/h)	579	630	643	551
Control Delay (s)	16.7	53.4	11.2	13.8
Approach Delay (s)	40.2		11.2	13.8
Approach LOS	E		B	B

**Intersection Summary**

Delay		31.5		
Level of Service		D		
Intersection Capacity Utilization		51.2%	ICU Level of Service	A
Analysis Period (min)		15		



HCM Signalized Intersection Capacity Analysis  
 3: I-8 WB Ramp/Taylor St & Hotel Circle North

2A PM  
 01/04/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑	↗		↑↑	↗	↘		↗
Traffic Volume (vph)	0	0	0	0	190	415	0	455	105	305	0	130
Future Volume (vph)	0	0	0	0	190	415	0	455	105	305	0	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					6.5	6.5		5.0	5.0	5.0		4.0
Lane Util. Factor					1.00	1.00		0.95	1.00	1.00		1.00
Frbp, ped/bikes					1.00	1.00		1.00	1.00	1.00		0.98
Flpb, ped/bikes					1.00	1.00		1.00	1.00	1.00		1.00
Frt					1.00	0.85		1.00	0.85	1.00		0.85
Flt Protected					1.00	1.00		1.00	1.00	0.95		1.00
Satd. Flow (prot)					1863	1583		3539	1583	1770		1550
Flt Permitted					1.00	1.00		1.00	1.00	0.95		1.00
Satd. Flow (perm)					1863	1583		3539	1583	1770		1550
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	207	451	0	495	114	332	0	141
RTOR Reduction (vph)	0	0	0	0	0	343	0	0	90	0	0	0
Lane Group Flow (vph)	0	0	0	0	207	108	0	495	24	332	0	141
Confl. Bikes (#/hr)												3
Turn Type					NA	Perm		NA	Perm	Prot		Free
Protected Phases					6			8		7		
Permitted Phases						6			8			Free
Actuated Green, G (s)					12.7	12.7		11.1	11.1	12.9		53.2
Effective Green, g (s)					12.7	12.7		11.1	11.1	12.9		53.2
Actuated g/C Ratio					0.24	0.24		0.21	0.21	0.24		1.00
Clearance Time (s)					6.5	6.5		5.0	5.0	5.0		
Vehicle Extension (s)					4.0	4.0		1.0	1.0	1.0		
Lane Grp Cap (vph)					444	377		738	330	429		1550
v/s Ratio Prot					c0.11			c0.14		c0.19		
v/s Ratio Perm						0.07			0.02			0.09
v/c Ratio					0.47	0.29		0.67	0.07	0.77		0.09
Uniform Delay, d1					17.3	16.5		19.4	16.9	18.8		0.0
Progression Factor					1.00	1.00		1.00	1.00	1.00		1.00
Incremental Delay, d2					1.1	0.6		1.9	0.0	7.7		0.1
Delay (s)					18.4	17.1		21.3	16.9	26.5		0.1
Level of Service					B	B		C	B	C		A
Approach Delay (s)		0.0			17.5			20.5			18.7	
Approach LOS		A			B			C			B	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			18.9		HCM 2000 Level of Service				B			
HCM 2000 Volume to Capacity ratio			0.64									
Actuated Cycle Length (s)			53.2		Sum of lost time (s)				16.5			
Intersection Capacity Utilization			52.4%		ICU Level of Service				A			
Analysis Period (min)			15									
c Critical Lane Group												

# HCM Signalized Intersection Capacity Analysis

## 1: Taylor Street & I-8 EB Ramp

2B - AM  
01/04/2018



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↶	↷	↶↷		↶↷	↶
Traffic Volume (vph)	205	120	1650	100	220	130
Future Volume (vph)	205	120	1650	100	220	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	5.5	5.5		6.0	4.7
Lane Util. Factor	1.00	1.00	0.95		0.97	1.00
Frbp, ped/bikes	1.00	1.00	1.00		1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1863	3509		3433	1571
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1863	3509		3433	1571
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	223	130	1793	109	239	141
RTOR Reduction (vph)	0	0	3	0	0	9
Lane Group Flow (vph)	223	130	1899	0	239	132
Confl. Peds. (#/hr)						4
Turn Type	Prot	NA	NA		Prot	pm+ov
Protected Phases	5	2	6		4	5
Permitted Phases						4
Actuated Green, G (s)	16.0	86.7	66.0		12.3	28.3
Effective Green, g (s)	16.0	86.7	66.0		12.3	28.3
Actuated g/C Ratio	0.14	0.78	0.60		0.11	0.26
Clearance Time (s)	4.7	5.5	5.5		6.0	4.7
Vehicle Extension (s)	1.0	2.0	2.0		1.0	1.0
Lane Grp Cap (vph)	256	1461	2095		382	402
v/s Ratio Prot	c0.13	0.07	c0.54		c0.07	0.05
v/s Ratio Perm						0.04
v/c Ratio	0.87	0.09	0.91		0.63	0.33
Uniform Delay, d1	46.2	2.8	19.5		46.9	33.4
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	25.3	0.1	7.1		2.3	0.2
Delay (s)	71.6	2.9	26.6		49.2	33.6
Level of Service	E	A	C		D	C
Approach Delay (s)		46.3	26.6		43.4	
Approach LOS		D	C		D	
<b>Intersection Summary</b>						
HCM 2000 Control Delay			31.7		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.86			
Actuated Cycle Length (s)			110.5		Sum of lost time (s)	16.2
Intersection Capacity Utilization			81.4%		ICU Level of Service	D
Analysis Period (min)			15			
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis  
 2: Taylor Street/Hotel Circle South & Hotel Circle North

2B - AM  
 01/04/2018



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↶	↷	↷		↶	
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	180	160	115	130	190	0
Future Volume (vph)	180	160	115	130	190	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	196	174	125	141	207	0

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total (vph)	196	174	266	207
Volume Left (vph)	196	0	0	207
Volume Right (vph)	0	0	141	0
Hadj (s)	0.53	0.03	-0.28	0.23
Departure Headway (s)	5.9	5.4	4.8	5.6
Degree Utilization, x	0.32	0.26	0.36	0.32
Capacity (veh/h)	581	638	712	588
Control Delay (s)	10.5	9.2	10.5	11.3
Approach Delay (s)	9.9		10.5	11.3
Approach LOS	A		B	B

**Intersection Summary**

Delay	10.4
Level of Service	B
Intersection Capacity Utilization	44.7%
ICU Level of Service	A
Analysis Period (min)	15

HCM Signalized Intersection Capacity Analysis  
 3: I-8 WB Ramp/Taylor St & Hotel Circle North

2B - AM  
 01/04/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑	↗		↑↑	↗	↘		↗
Traffic Volume (vph)	0	0	0	0	335	635	0	1180	60	190	0	195
Future Volume (vph)	0	0	0	0	335	635	0	1180	60	190	0	195
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					6.5	6.5		5.0	5.0	5.0		4.0
Lane Util. Factor					1.00	1.00		0.95	1.00	1.00		1.00
Frt					1.00	0.85		1.00	0.85	1.00		0.85
Flt Protected					1.00	1.00		1.00	1.00	0.95		1.00
Satd. Flow (prot)					1863	1583		3539	1583	1770		1583
Flt Permitted					1.00	1.00		1.00	1.00	0.95		1.00
Satd. Flow (perm)					1863	1583		3539	1583	1770		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	364	690	0	1283	65	207	0	212
RTOR Reduction (vph)	0	0	0	0	0	209	0	0	40	0	0	0
Lane Group Flow (vph)	0	0	0	0	364	481	0	1283	25	207	0	212
Turn Type					NA	Perm		NA	Perm	Prot		Free
Protected Phases					6			8		7		
Permitted Phases						6			8			Free
Actuated Green, G (s)					42.8	42.8		49.0	49.0	17.7		126.0
Effective Green, g (s)					42.8	42.8		49.0	49.0	17.7		126.0
Actuated g/C Ratio					0.34	0.34		0.39	0.39	0.14		1.00
Clearance Time (s)					6.5	6.5		5.0	5.0	5.0		
Vehicle Extension (s)					4.0	4.0		1.0	1.0	1.0		
Lane Grp Cap (vph)					632	537		1376	615	248		1583
v/s Ratio Prot					0.20			c0.36		c0.12		
v/s Ratio Perm						c0.30			0.02			0.13
v/c Ratio					0.58	0.90		0.93	0.04	0.83		0.13
Uniform Delay, d1					34.2	39.5		36.9	23.9	52.7		0.0
Progression Factor					1.00	1.00		1.00	1.00	1.00		1.00
Incremental Delay, d2					1.5	17.6		11.5	0.0	20.0		0.2
Delay (s)					35.7	57.1		48.4	23.9	72.8		0.2
Level of Service					D	E		D	C	E		A
Approach Delay (s)		0.0			49.7			47.2			36.0	
Approach LOS		A			D			D			D	

Intersection Summary

HCM 2000 Control Delay	46.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	126.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	81.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

# HCM Signalized Intersection Capacity Analysis

## 1: Taylor Street & I-8 EB Ramp

2B PM  
01/04/2018



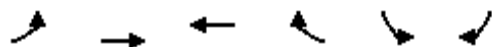
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↑	↑↑		↖↗	↖
Traffic Volume (vph)	665	555	545	200	350	90
Future Volume (vph)	665	555	545	200	350	90
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	5.5	5.5		6.0	4.7
Lane Util. Factor	1.00	1.00	0.95		0.97	1.00
Frpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.96		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1863	3397		3433	1577
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1863	3397		3433	1577
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	723	603	592	217	380	98
RTOR Reduction (vph)	0	0	33	0	0	28
Lane Group Flow (vph)	723	603	776	0	380	70
Confl. Peds. (#/hr)					1	
Confl. Bikes (#/hr)						7
Turn Type	Prot	NA	NA		Prot	pm+ov
Protected Phases	5	2	6		4	5
Permitted Phases						4
Actuated Green, G (s)	41.4	76.6	30.5		15.2	56.6
Effective Green, g (s)	41.4	76.6	30.5		15.2	56.6
Actuated g/C Ratio	0.40	0.74	0.30		0.15	0.55
Clearance Time (s)	4.7	5.5	5.5		6.0	4.7
Vehicle Extension (s)	1.0	2.0	2.0		1.0	1.0
Lane Grp Cap (vph)	709	1381	1002		505	864
v/s Ratio Prot	c0.41	0.32	c0.23		c0.11	0.03
v/s Ratio Perm						0.01
v/c Ratio	1.02	0.44	0.77		0.75	0.08
Uniform Delay, d1	30.9	5.1	33.3		42.2	11.0
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	38.9	1.0	5.8		5.6	0.0
Delay (s)	69.8	6.1	39.1		47.8	11.1
Level of Service	E	A	D		D	B
Approach Delay (s)		40.8	39.1		40.3	
Approach LOS		D	D		D	

Intersection Summary			
HCM 2000 Control Delay	40.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	103.3	Sum of lost time (s)	16.2
Intersection Capacity Utilization	81.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis  
 2: Taylor Street/Hotel Circle South & Hotel Circle North

2B PM  
 01/04/2018



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	325	580	85	105	210	0
Future Volume (vph)	325	580	85	105	210	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	353	630	92	114	228	0

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total (vph)	353	630	206	228
Volume Left (vph)	353	0	0	228
Volume Right (vph)	0	0	114	0
Hadj (s)	0.53	0.03	-0.30	0.23
Departure Headway (s)	6.1	5.6	5.5	6.4
Degree Utilization, x	0.60	0.98	0.31	0.41
Capacity (veh/h)	582	641	644	553
Control Delay (s)	16.6	52.5	11.0	13.7
Approach Delay (s)	39.6		11.0	13.7
Approach LOS	E		B	B

**Intersection Summary**

Delay		31.3		
Level of Service		D		
Intersection Capacity Utilization		50.6%	ICU Level of Service	A
Analysis Period (min)		15		

HCM Signalized Intersection Capacity Analysis  
 3: I-8 WB Ramp/Taylor St & Hotel Circle North

2B PM  
 01/04/2018

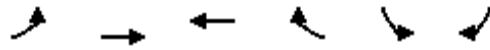


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑	↗		↑↑	↗	↘		↗
Traffic Volume (vph)	0	0	0	0	190	415	0	455	105	300	0	130
Future Volume (vph)	0	0	0	0	190	415	0	455	105	300	0	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					6.5	6.5		5.0	5.0	5.0		4.0
Lane Util. Factor					1.00	1.00		0.95	1.00	1.00		1.00
Frbp, ped/bikes					1.00	1.00		1.00	1.00	1.00		0.98
Flpb, ped/bikes					1.00	1.00		1.00	1.00	1.00		1.00
Frt					1.00	0.85		1.00	0.85	1.00		0.85
Flt Protected					1.00	1.00		1.00	1.00	0.95		1.00
Satd. Flow (prot)					1863	1583		3539	1583	1770		1550
Flt Permitted					1.00	1.00		1.00	1.00	0.95		1.00
Satd. Flow (perm)					1863	1583		3539	1583	1770		1550
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	207	451	0	495	114	326	0	141
RTOR Reduction (vph)	0	0	0	0	0	343	0	0	90	0	0	0
Lane Group Flow (vph)	0	0	0	0	207	108	0	495	24	326	0	141
Confl. Bikes (#/hr)												3
Turn Type					NA	Perm		NA	Perm	Prot		Free
Protected Phases					6			8		7		
Permitted Phases						6			8			Free
Actuated Green, G (s)					12.7	12.7		11.1	11.1	12.7		53.0
Effective Green, g (s)					12.7	12.7		11.1	11.1	12.7		53.0
Actuated g/C Ratio					0.24	0.24		0.21	0.21	0.24		1.00
Clearance Time (s)					6.5	6.5		5.0	5.0	5.0		
Vehicle Extension (s)					4.0	4.0		1.0	1.0	1.0		
Lane Grp Cap (vph)					446	379		741	331	424		1550
v/s Ratio Prot					c0.11			c0.14		c0.18		
v/s Ratio Perm						0.07			0.02			0.09
v/c Ratio					0.46	0.29		0.67	0.07	0.77		0.09
Uniform Delay, d1					17.2	16.4		19.3	16.8	18.8		0.0
Progression Factor					1.00	1.00		1.00	1.00	1.00		1.00
Incremental Delay, d2					1.0	0.6		1.8	0.0	7.4		0.1
Delay (s)					18.3	17.0		21.0	16.9	26.2		0.1
Level of Service					B	B		C	B	C		A
Approach Delay (s)		0.0			17.4			20.3			18.3	
Approach LOS		A			B			C			B	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			18.6		HCM 2000 Level of Service				B			
HCM 2000 Volume to Capacity ratio			0.63									
Actuated Cycle Length (s)			53.0		Sum of lost time (s)				16.5			
Intersection Capacity Utilization			52.1%		ICU Level of Service				A			
Analysis Period (min)			15									
c Critical Lane Group												

# HCM Signalized Intersection Capacity Analysis

## 1: Taylor Street & I-8 EB Ramp

3A - AM  
01/03/2018



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↶	↑	↶↷		↶↷	↶
Traffic Volume (vph)	205	120	1650	95	220	130
Future Volume (vph)	205	120	1650	95	220	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	5.5	5.5		6.0	4.7
Lane Util. Factor	1.00	1.00	0.95		0.97	1.00
Frbp, ped/bikes	1.00	1.00	1.00		1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1863	3510		3433	1571
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1863	3510		3433	1571
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	223	130	1793	103	239	141
RTOR Reduction (vph)	0	0	3	0	0	9
Lane Group Flow (vph)	223	130	1893	0	239	132
Confl. Peds. (#/hr)						4
Turn Type	Prot	NA	NA		Prot	pm+ov
Protected Phases	5	2	6		4	5
Permitted Phases						4
Actuated Green, G (s)	16.0	86.7	66.0		12.3	28.3
Effective Green, g (s)	16.0	86.7	66.0		12.3	28.3
Actuated g/C Ratio	0.14	0.78	0.60		0.11	0.26
Clearance Time (s)	4.7	5.5	5.5		6.0	4.7
Vehicle Extension (s)	1.0	2.0	2.0		1.0	1.0
Lane Grp Cap (vph)	256	1461	2096		382	402
v/s Ratio Prot	c0.13	0.07	c0.54		c0.07	0.05
v/s Ratio Perm						0.04
v/c Ratio	0.87	0.09	0.90		0.63	0.33
Uniform Delay, d1	46.2	2.8	19.5		46.9	33.4
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	25.3	0.1	6.9		2.3	0.2
Delay (s)	71.6	2.9	26.4		49.2	33.6
Level of Service	E	A	C		D	C
Approach Delay (s)		46.3	26.4		43.4	
Approach LOS		D	C		D	
<b>Intersection Summary</b>						
HCM 2000 Control Delay			31.5		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.86			
Actuated Cycle Length (s)			110.5		Sum of lost time (s)	16.2
Intersection Capacity Utilization			81.3%		ICU Level of Service	D
Analysis Period (min)			15			
c Critical Lane Group						



HCM Unsignalized Intersection Capacity Analysis  
 2: Taylor Street/Hotel Circle South & Hotel Circle North

3A - AM  
 01/03/2018



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↑	↗		↙	
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	180	160	110	125	190	0
Future Volume (vph)	180	160	110	125	190	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	196	174	120	136	207	0

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total (vph)	196	174	256	207
Volume Left (vph)	196	0	0	207
Volume Right (vph)	0	0	136	0
Hadj (s)	0.53	0.03	-0.28	0.23
Departure Headway (s)	5.9	5.4	4.8	5.6
Degree Utilization, x	0.32	0.26	0.34	0.32
Capacity (veh/h)	582	639	712	591
Control Delay (s)	10.5	9.1	10.3	11.2
Approach Delay (s)	9.9		10.3	11.2
Approach LOS	A		B	B

Intersection Summary			
Delay		10.3	
Level of Service		B	
Intersection Capacity Utilization		44.1%	ICU Level of Service A
Analysis Period (min)		15	

HCM Signalized Intersection Capacity Analysis  
 3: I-8 WB Ramp/Taylor St & Hotel Circle North

3A - AM  
 01/03/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑	↗		↑↑	↗	↘		↗
Traffic Volume (vph)	0	0	0	0	335	635	0	1180	60	190	0	190
Future Volume (vph)	0	0	0	0	335	635	0	1180	60	190	0	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					6.5	6.5		5.0	5.0	5.0		4.0
Lane Util. Factor					1.00	1.00		0.95	1.00	1.00		1.00
Frt					1.00	0.85		1.00	0.85	1.00		0.85
Flt Protected					1.00	1.00		1.00	1.00	0.95		1.00
Satd. Flow (prot)					1863	1583		3539	1583	1770		1583
Flt Permitted					1.00	1.00		1.00	1.00	0.95		1.00
Satd. Flow (perm)					1863	1583		3539	1583	1770		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	364	690	0	1283	65	207	0	207
RTOR Reduction (vph)	0	0	0	0	0	209	0	0	40	0	0	0
Lane Group Flow (vph)	0	0	0	0	364	481	0	1283	25	207	0	207
Turn Type					NA	Perm		NA	Perm	Prot		Free
Protected Phases					6			8		7		
Permitted Phases						6			8			Free
Actuated Green, G (s)					42.8	42.8		49.0	49.0	17.7		126.0
Effective Green, g (s)					42.8	42.8		49.0	49.0	17.7		126.0
Actuated g/C Ratio					0.34	0.34		0.39	0.39	0.14		1.00
Clearance Time (s)					6.5	6.5		5.0	5.0	5.0		
Vehicle Extension (s)					4.0	4.0		1.0	1.0	1.0		
Lane Grp Cap (vph)					632	537		1376	615	248		1583
v/s Ratio Prot					0.20			c0.36		c0.12		
v/s Ratio Perm						c0.30			0.02			0.13
v/c Ratio					0.58	0.90		0.93	0.04	0.83		0.13
Uniform Delay, d1					34.2	39.5		36.9	23.9	52.7		0.0
Progression Factor					1.00	1.00		1.00	1.00	1.00		1.00
Incremental Delay, d2					1.5	17.6		11.5	0.0	20.0		0.2
Delay (s)					35.7	57.1		48.4	23.9	72.8		0.2
Level of Service					D	E		D	C	E		A
Approach Delay (s)		0.0			49.7			47.2			36.5	
Approach LOS		A			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	46.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	126.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	81.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

# HCM Signalized Intersection Capacity Analysis

## 1: Taylor Street & I-8 EB Ramp

3A PM  
01/03/2018



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↶	↷	↶↷		↶↷	↶
Traffic Volume (vph)	665	555	545	195	350	90
Future Volume (vph)	665	555	545	195	350	90
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	5.5	5.5		6.0	4.7
Lane Util. Factor	1.00	1.00	0.95		0.97	1.00
Frpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.96		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1863	3399		3433	1577
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1863	3399		3433	1577
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	723	603	592	212	380	98
RTOR Reduction (vph)	0	0	32	0	0	28
Lane Group Flow (vph)	723	603	772	0	380	70
Confl. Peds. (#/hr)					1	
Confl. Bikes (#/hr)						7
Turn Type	Prot	NA	NA		Prot	pm+ov
Protected Phases	5	2	6		4	5
Permitted Phases						4
Actuated Green, G (s)	41.4	76.6	30.5		15.2	56.6
Effective Green, g (s)	41.4	76.6	30.5		15.2	56.6
Actuated g/C Ratio	0.40	0.74	0.30		0.15	0.55
Clearance Time (s)	4.7	5.5	5.5		6.0	4.7
Vehicle Extension (s)	1.0	2.0	2.0		1.0	1.0
Lane Grp Cap (vph)	709	1381	1003		505	864
v/s Ratio Prot	c0.41	0.32	c0.23		c0.11	0.03
v/s Ratio Perm						0.01
v/c Ratio	1.02	0.44	0.77		0.75	0.08
Uniform Delay, d1	30.9	5.1	33.2		42.2	11.0
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	38.9	1.0	5.7		5.6	0.0
Delay (s)	69.8	6.1	38.9		47.8	11.1
Level of Service	E	A	D		D	B
Approach Delay (s)		40.8	38.9		40.3	
Approach LOS		D	D		D	

### Intersection Summary

HCM 2000 Control Delay	40.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	103.3	Sum of lost time (s)	16.2
Intersection Capacity Utilization	81.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis  
 2: Taylor Street/Hotel Circle South & Hotel Circle North

3A PM  
 01/03/2018



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	325	580	80	100	210	0
Future Volume (vph)	325	580	80	100	210	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	353	630	87	109	228	0

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total (vph)	353	630	196	228
Volume Left (vph)	353	0	0	228
Volume Right (vph)	0	0	109	0
Hadj (s)	0.53	0.03	-0.30	0.23
Departure Headway (s)	6.1	5.6	5.5	6.4
Degree Utilization, x	0.60	0.98	0.30	0.40
Capacity (veh/h)	583	642	644	555
Control Delay (s)	16.5	51.8	10.8	13.6
Approach Delay (s)	39.1		10.8	13.6
Approach LOS	E		B	B

Intersection Summary			
Delay		31.0	
Level of Service		D	
Intersection Capacity Utilization		50.0%	ICU Level of Service A
Analysis Period (min)		15	

HCM Signalized Intersection Capacity Analysis  
 3: I-8 WB Ramp/Taylor St & Hotel Circle North

3A PM  
 01/03/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑	↗		↑↑	↗	↘		↗
Traffic Volume (vph)	0	0	0	0	190	415	0	455	106	300	0	125
Future Volume (vph)	0	0	0	0	190	415	0	455	106	300	0	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					6.5	6.5		5.0	5.0	5.0		4.0
Lane Util. Factor					1.00	1.00		0.95	1.00	1.00		1.00
Frbp, ped/bikes					1.00	1.00		1.00	1.00	1.00		0.98
Flpb, ped/bikes					1.00	1.00		1.00	1.00	1.00		1.00
Frt					1.00	0.85		1.00	0.85	1.00		0.85
Flt Protected					1.00	1.00		1.00	1.00	0.95		1.00
Satd. Flow (prot)					1863	1583		3539	1583	1770		1550
Flt Permitted					1.00	1.00		1.00	1.00	0.95		1.00
Satd. Flow (perm)					1863	1583		3539	1583	1770		1550
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	207	451	0	495	115	326	0	136
RTOR Reduction (vph)	0	0	0	0	0	343	0	0	91	0	0	0
Lane Group Flow (vph)	0	0	0	0	207	108	0	495	24	326	0	136
Confl. Bikes (#/hr)												3
Turn Type					NA	Perm		NA	Perm	Prot		Free
Protected Phases					6			8		7		
Permitted Phases						6			8			Free
Actuated Green, G (s)					12.7	12.7		11.1	11.1	12.7		53.0
Effective Green, g (s)					12.7	12.7		11.1	11.1	12.7		53.0
Actuated g/C Ratio					0.24	0.24		0.21	0.21	0.24		1.00
Clearance Time (s)					6.5	6.5		5.0	5.0	5.0		
Vehicle Extension (s)					4.0	4.0		1.0	1.0	1.0		
Lane Grp Cap (vph)					446	379		741	331	424		1550
v/s Ratio Prot					c0.11			c0.14		c0.18		
v/s Ratio Perm						0.07			0.02			0.09
v/c Ratio					0.46	0.29		0.67	0.07	0.77		0.09
Uniform Delay, d1					17.2	16.4		19.3	16.8	18.8		0.0
Progression Factor					1.00	1.00		1.00	1.00	1.00		1.00
Incremental Delay, d2					1.0	0.6		1.8	0.0	7.4		0.1
Delay (s)					18.3	17.0		21.0	16.9	26.2		0.1
Level of Service					B	B		C	B	C		A
Approach Delay (s)		0.0			17.4			20.2			18.5	
Approach LOS		A			B			C			B	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			18.7		HCM 2000 Level of Service				B			
HCM 2000 Volume to Capacity ratio			0.63									
Actuated Cycle Length (s)			53.0		Sum of lost time (s)				16.5			
Intersection Capacity Utilization			52.1%		ICU Level of Service				A			
Analysis Period (min)			15									
c Critical Lane Group												

# HCM Signalized Intersection Capacity Analysis

## 1: Taylor Street & I-8 EB Ramp

3B - AM  
01/03/2018



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↶	↷	↷↶		↷↶	↷
Traffic Volume (vph)	205	120	1650	95	220	130
Future Volume (vph)	205	120	1650	95	220	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	5.5	5.5		6.0	4.7
Lane Util. Factor	1.00	1.00	0.95		0.97	1.00
Frbp, ped/bikes	1.00	1.00	1.00		1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1863	3510		3433	1571
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1863	3510		3433	1571
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	223	130	1793	103	239	141
RTOR Reduction (vph)	0	0	3	0	0	9
Lane Group Flow (vph)	223	130	1893	0	239	132
Confl. Peds. (#/hr)						4
Turn Type	Prot	NA	NA		Prot	pm+ov
Protected Phases	5	2	6		4	5
Permitted Phases						4
Actuated Green, G (s)	16.0	86.7	66.0		12.3	28.3
Effective Green, g (s)	16.0	86.7	66.0		12.3	28.3
Actuated g/C Ratio	0.14	0.78	0.60		0.11	0.26
Clearance Time (s)	4.7	5.5	5.5		6.0	4.7
Vehicle Extension (s)	1.0	2.0	2.0		1.0	1.0
Lane Grp Cap (vph)	256	1461	2096		382	402
v/s Ratio Prot	c0.13	0.07	c0.54		c0.07	0.05
v/s Ratio Perm						0.04
v/c Ratio	0.87	0.09	0.90		0.63	0.33
Uniform Delay, d1	46.2	2.8	19.5		46.9	33.4
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	25.3	0.1	6.9		2.3	0.2
Delay (s)	71.6	2.9	26.4		49.2	33.6
Level of Service	E	A	C		D	C
Approach Delay (s)		46.3	26.4		43.4	
Approach LOS		D	C		D	
<b>Intersection Summary</b>						
HCM 2000 Control Delay			31.5		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.86			
Actuated Cycle Length (s)			110.5		Sum of lost time (s)	16.2
Intersection Capacity Utilization			81.3%		ICU Level of Service	D
Analysis Period (min)			15			
c Critical Lane Group						

HCM Unsignalized Intersection Capacity Analysis  
 2: Taylor Street/Hotel Circle South & Hotel Circle North

3B - AM  
 01/03/2018



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	180	160	110	125	190	0
Future Volume (vph)	180	160	110	125	190	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	196	174	120	136	207	0

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total (vph)	196	174	256	207
Volume Left (vph)	196	0	0	207
Volume Right (vph)	0	0	136	0
Hadj (s)	0.53	0.03	-0.28	0.23
Departure Headway (s)	5.9	5.4	4.8	5.6
Degree Utilization, x	0.32	0.26	0.34	0.32
Capacity (veh/h)	582	639	712	591
Control Delay (s)	10.5	9.1	10.3	11.2
Approach Delay (s)	9.9		10.3	11.2
Approach LOS	A		B	B

**Intersection Summary**

Delay	10.3
Level of Service	B
Intersection Capacity Utilization	44.1%
ICU Level of Service	A
Analysis Period (min)	15

HCM Signalized Intersection Capacity Analysis  
 3: I-8 WB Ramp/Taylor St & Hotel Circle North

3B - AM  
 01/03/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑	↗		↑↑	↗	↘		↗
Traffic Volume (vph)	0	0	0	0	335	635	0	1180	60	190	0	190
Future Volume (vph)	0	0	0	0	335	635	0	1180	60	190	0	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					6.5	6.5		5.0	5.0	5.0		4.0
Lane Util. Factor					1.00	1.00		0.95	1.00	1.00		1.00
Frt					1.00	0.85		1.00	0.85	1.00		0.85
Flt Protected					1.00	1.00		1.00	1.00	0.95		1.00
Satd. Flow (prot)					1863	1583		3539	1583	1770		1583
Flt Permitted					1.00	1.00		1.00	1.00	0.95		1.00
Satd. Flow (perm)					1863	1583		3539	1583	1770		1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	364	690	0	1283	65	207	0	207
RTOR Reduction (vph)	0	0	0	0	0	209	0	0	40	0	0	0
Lane Group Flow (vph)	0	0	0	0	364	481	0	1283	25	207	0	207
Turn Type					NA	Perm		NA	Perm	Prot		Free
Protected Phases					6			8		7		
Permitted Phases						6			8			Free
Actuated Green, G (s)					42.8	42.8		49.0	49.0	17.7		126.0
Effective Green, g (s)					42.8	42.8		49.0	49.0	17.7		126.0
Actuated g/C Ratio					0.34	0.34		0.39	0.39	0.14		1.00
Clearance Time (s)					6.5	6.5		5.0	5.0	5.0		
Vehicle Extension (s)					4.0	4.0		1.0	1.0	1.0		
Lane Grp Cap (vph)					632	537		1376	615	248		1583
v/s Ratio Prot					0.20			c0.36		c0.12		
v/s Ratio Perm						c0.30			0.02			0.13
v/c Ratio					0.58	0.90		0.93	0.04	0.83		0.13
Uniform Delay, d1					34.2	39.5		36.9	23.9	52.7		0.0
Progression Factor					1.00	1.00		1.00	1.00	1.00		1.00
Incremental Delay, d2					1.5	17.6		11.5	0.0	20.0		0.2
Delay (s)					35.7	57.1		48.4	23.9	72.8		0.2
Level of Service					D	E		D	C	E		A
Approach Delay (s)		0.0			49.7			47.2			36.5	
Approach LOS		A			D			D			D	

Intersection Summary

HCM 2000 Control Delay	46.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	126.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	81.5%	ICU Level of Service	D
Analysis Period (min)	15		

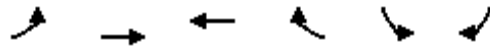
c Critical Lane Group



# HCM Signalized Intersection Capacity Analysis

## 1: Taylor Street & I-8 EB Ramp

3B PM  
01/03/2018



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↶	↷	↶↷		↶↷	↷
Traffic Volume (vph)	665	555	545	195	350	90
Future Volume (vph)	665	555	545	195	350	90
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.7	5.5	5.5		6.0	4.7
Lane Util. Factor	1.00	1.00	0.95		0.97	1.00
Frbp, ped/bikes	1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.96		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1863	3399		3433	1577
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	1863	3399		3433	1577
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	723	603	592	212	380	98
RTOR Reduction (vph)	0	0	32	0	0	28
Lane Group Flow (vph)	723	603	772	0	380	70
Confl. Peds. (#/hr)					1	
Confl. Bikes (#/hr)						7
Turn Type	Prot	NA	NA		Prot	pm+ov
Protected Phases	5	2	6		4	5
Permitted Phases						4
Actuated Green, G (s)	41.4	76.6	30.5		15.2	56.6
Effective Green, g (s)	41.4	76.6	30.5		15.2	56.6
Actuated g/C Ratio	0.40	0.74	0.30		0.15	0.55
Clearance Time (s)	4.7	5.5	5.5		6.0	4.7
Vehicle Extension (s)	1.0	2.0	2.0		1.0	1.0
Lane Grp Cap (vph)	709	1381	1003		505	864
v/s Ratio Prot	c0.41	0.32	c0.23		c0.11	0.03
v/s Ratio Perm						0.01
v/c Ratio	1.02	0.44	0.77		0.75	0.08
Uniform Delay, d1	30.9	5.1	33.2		42.2	11.0
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	38.9	1.0	5.7		5.6	0.0
Delay (s)	69.8	6.1	38.9		47.8	11.1
Level of Service	E	A	D		D	B
Approach Delay (s)		40.8	38.9		40.3	
Approach LOS		D	D		D	

### Intersection Summary

HCM 2000 Control Delay	40.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	103.3	Sum of lost time (s)	16.2
Intersection Capacity Utilization	81.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis  
 2: Taylor Street/Hotel Circle South & Hotel Circle North

3B PM  
 01/03/2018



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↑	↗		↙	
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	325	580	80	100	210	0
Future Volume (vph)	325	580	80	100	210	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	353	630	87	109	228	0

Direction, Lane #	EB 1	EB 2	WB 1	SB 1
Volume Total (vph)	353	630	196	228
Volume Left (vph)	353	0	0	228
Volume Right (vph)	0	0	109	0
Hadj (s)	0.53	0.03	-0.30	0.23
Departure Headway (s)	6.1	5.6	5.5	6.4
Degree Utilization, x	0.60	0.98	0.30	0.40
Capacity (veh/h)	583	642	644	555
Control Delay (s)	16.5	51.8	10.8	13.6
Approach Delay (s)	39.1		10.8	13.6
Approach LOS	E		B	B

Intersection Summary			
Delay		31.0	
Level of Service		D	
Intersection Capacity Utilization		50.0%	ICU Level of Service A
Analysis Period (min)		15	

HCM Signalized Intersection Capacity Analysis  
 3: I-8 WB Ramp/Taylor St & Hotel Circle North

3B PM  
 01/03/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑	↗		↑↑	↗	↘		↗
Traffic Volume (vph)	0	0	0	0	190	415	0	455	106	300	0	125
Future Volume (vph)	0	0	0	0	190	415	0	455	106	300	0	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					6.5	6.5		5.0	5.0	5.0		4.0
Lane Util. Factor					1.00	1.00		0.95	1.00	1.00		1.00
Frbp, ped/bikes					1.00	1.00		1.00	1.00	1.00		0.98
Flpb, ped/bikes					1.00	1.00		1.00	1.00	1.00		1.00
Frt					1.00	0.85		1.00	0.85	1.00		0.85
Flt Protected					1.00	1.00		1.00	1.00	0.95		1.00
Satd. Flow (prot)					1863	1583		3539	1583	1770		1550
Flt Permitted					1.00	1.00		1.00	1.00	0.95		1.00
Satd. Flow (perm)					1863	1583		3539	1583	1770		1550
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	207	451	0	495	115	326	0	136
RTOR Reduction (vph)	0	0	0	0	0	343	0	0	91	0	0	0
Lane Group Flow (vph)	0	0	0	0	207	108	0	495	24	326	0	136
Confl. Bikes (#/hr)												3
Turn Type					NA	Perm		NA	Perm	Prot		Free
Protected Phases					6			8		7		
Permitted Phases						6			8			Free
Actuated Green, G (s)					12.7	12.7		11.1	11.1	12.7		53.0
Effective Green, g (s)					12.7	12.7		11.1	11.1	12.7		53.0
Actuated g/C Ratio					0.24	0.24		0.21	0.21	0.24		1.00
Clearance Time (s)					6.5	6.5		5.0	5.0	5.0		
Vehicle Extension (s)					4.0	4.0		1.0	1.0	1.0		
Lane Grp Cap (vph)					446	379		741	331	424		1550
v/s Ratio Prot					c0.11			c0.14		c0.18		
v/s Ratio Perm						0.07			0.02			0.09
v/c Ratio					0.46	0.29		0.67	0.07	0.77		0.09
Uniform Delay, d1					17.2	16.4		19.3	16.8	18.8		0.0
Progression Factor					1.00	1.00		1.00	1.00	1.00		1.00
Incremental Delay, d2					1.0	0.6		1.8	0.0	7.4		0.1
Delay (s)					18.3	17.0		21.0	16.9	26.2		0.1
Level of Service					B	B		C	B	C		A
Approach Delay (s)		0.0			17.4			20.2			18.5	
Approach LOS		A			B			C			B	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			18.7		HCM 2000 Level of Service				B			
HCM 2000 Volume to Capacity ratio			0.63									
Actuated Cycle Length (s)			53.0		Sum of lost time (s)				16.5			
Intersection Capacity Utilization			52.1%		ICU Level of Service				A			
Analysis Period (min)			15									
c Critical Lane Group												

**Attachment C**  
**Synchro Arterial Analysis Worksheets**

Arterial Level of Service: EB Taylor Street

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
I-8 EB Ramp	III	35	56.6	3.5	60.1	0.47	28.3	B
Total	III		56.6	3.5	60.1	0.47	28.3	B

Arterial Level of Service: WB Taylor Street

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
I-8 EB Ramp	III	35	13.6	26.8	40.4	0.10	9.0	F
Morena Blvd	III	35	56.6	23.4	80.0	0.47	21.2	C
Total	III		70.2	50.2	120.4	0.57	17.1	D

Arterial Level of Service: EB Taylor Street

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
I-8 EB Ramp	III	35	56.2	5.8	62.0	0.47	27.2	B
Total	III		56.2	5.8	62.0	0.47	27.2	B

Arterial Level of Service: WB Taylor Street

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
I-8 EB Ramp	III	35	14.9	38.8	53.7	0.11	7.4	F
Morena Blvd	III	35	56.2	23.2	79.4	0.47	21.2	C
Total	III		71.1	62.0	133.1	0.58	15.6	D

Arterial Level of Service: EB Taylor Street

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
	III	35	19.2	8.5	27.7	0.15	19.5	C
I-8 EB Ramp	III	35	57.0	3.5	60.5	0.48	28.3	B
Total	III		76.2	12.0	88.2	0.63	25.5	B

Arterial Level of Service: WB Taylor Street

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
I-8 EB Ramp	III	35	14.1	27.3	41.4	0.10	9.1	F
Morena Blvd	III	35	57.0	23.4	80.4	0.48	21.3	C
Total	III		71.1	50.7	121.8	0.58	17.1	D

Arterial Level of Service: EB Taylor Street

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
I-8 EB Ramp	III	35	55.2	5.8	61.0	0.46	27.1	B
Total	III		55.2	5.8	61.0	0.46	27.1	B

Arterial Level of Service: WB Taylor Street

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
I-8 EB Ramp	III	35	15.9	39.6	55.5	0.12	7.6	F
Morena Blvd	III	35	55.2	22.8	78.0	0.46	21.2	C
Total	III		71.1	62.4	133.5	0.58	15.6	D



Arterial Level of Service: EB Taylor Street

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
I-8 EB Ramp	III	35	56.2	3.5	59.7	0.47	28.2	B
Total	III		56.2	3.5	59.7	0.47	28.2	B

Arterial Level of Service: WB Taylor Street

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
I-8 EB Ramp	III	35	14.3	28.2	42.5	0.11	9.0	F
Morena Blvd	III	35	56.2	23.7	79.9	0.47	21.1	C
Total	III		70.5	51.9	122.4	0.57	16.9	D

Arterial Level of Service: EB Taylor Street

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
I-8 EB Ramp	III	35	56.0	6.8	62.8	0.47	26.7	B
Total	III		56.0	6.8	62.8	0.47	26.7	B

Arterial Level of Service: WB Taylor Street

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
I-8 EB Ramp	III	35	15.1	38.4	53.5	0.11	7.5	F
Morena Blvd	III	35	56.0	23.2	79.2	0.47	21.2	C
Total	III		71.1	61.6	132.7	0.58	15.7	D

Arterial Level of Service: EB Taylor Street

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
I-8 EB Ramp	III	35	55.8	3.5	59.3	0.46	28.2	B
Total	III		55.8	3.5	59.3	0.46	28.2	B

Arterial Level of Service: WB Taylor Street

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
I-8 EB Ramp	III	35	15.4	28.2	43.6	0.11	9.4	F
Morena Blvd	III	35	55.8	23.7	79.5	0.46	21.0	C
Total	III		71.2	51.9	123.1	0.58	16.9	D

Arterial Level of Service: EB Taylor Street

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
I-8 EB Ramp	III	35	56.0	6.8	62.8	0.47	26.7	B
Total	III		56.0	6.8	62.8	0.47	26.7	B

Arterial Level of Service: WB Taylor Street

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
I-8 EB Ramp	III	35	14.8	38.1	52.9	0.11	7.5	F
Morena Blvd	III	35	56.0	23.4	79.4	0.47	21.1	C
Total	III		70.8	61.5	132.3	0.58	15.7	D

Arterial Level of Service: EB Taylor Street

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
I-8 EB Ramp	III	35	57.4	3.5	60.9	0.48	28.3	B
Total	III		57.4	3.5	60.9	0.48	28.3	B

Arterial Level of Service: WB Taylor Street

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
I-8 EB Ramp	III	35	14.7	27.9	42.6	0.11	9.2	F
Morena Blvd	III	35	57.4	23.7	81.1	0.48	21.2	C
Total	III		72.1	51.6	123.7	0.59	17.1	D

Arterial Level of Service: EB Taylor Street

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
I-8 EB Ramp	III	35	56.4	6.8	63.2	0.47	26.8	B
Total	III		56.4	6.8	63.2	0.47	26.8	B

Arterial Level of Service: WB Taylor Street

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
I-8 EB Ramp	III	35	14.5	38.0	52.5	0.11	7.4	F
Morena Blvd	III	35	56.4	23.2	79.6	0.47	21.3	C
Total	III		70.9	61.2	132.1	0.58	15.7	D

Arterial Level of Service: EB Taylor Street

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
	III	35	15.3	7.7	23.0	0.11	17.7	D
I-8 EB Ramp	III	35	58.8	3.5	62.3	0.49	28.3	B
Total	III		74.1	11.2	85.3	0.60	25.4	B

Arterial Level of Service: WB Taylor Street

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
I-8 EB Ramp	III	35	14.7	27.9	42.6	0.11	9.2	F
Morena Blvd	III	35	58.8	20.4	79.2	0.49	22.3	C
	III	35	15.3	12.8	28.1	0.11	14.5	D
Total	III		88.8	61.1	149.9	0.71	17.1	D

Arterial Level of Service: EB Taylor Street

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
I-8 EB Ramp	III	35	57.6	6.8	64.4	0.48	26.8	B
Total	III		57.6	6.8	64.4	0.48	26.8	B

Arterial Level of Service: WB Taylor Street

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
I-8 EB Ramp	III	35	14.4	38.0	52.4	0.11	7.4	F
Morena Blvd	III	35	57.6	23.4	81.0	0.48	21.3	C
Total	III		72.0	61.4	133.4	0.59	15.8	D