

# **TRAFFIC IMPACT STUDY**

for

## **Enloe Medical Office Building**

**April 27, 2018**

**PREPARED FOR:**  
**Modern Building, Inc.**

**PREPARED BY:**  
**TRAFFIC**  
**WORKS** LLC



## LIST OF FIGURES

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## Intersections

Intersection level of service methodology is established in the *Highway Capacity Manual (HCM)*, 2010, published by the Transportation Research Board (TRB). The methodology for signalized intersections determines the level of service by comparing the average control delay for the overall intersection to the delay thresholds in **Table 1**. The level of service at unsignalized (side-street stop controlled) intersections is determined by comparing the average control delay for the worst movement/approach to the delay thresholds in **Table 1**.

**Table 1: Level of Service Definition for Intersections**

Level of Service	Brief Description	Average Delay (seconds per vehicle)	
		Unsignalized Intersections	Signalized Intersections
A	Free flow conditions.	< 10	< 10
B	Stable conditions with some affect from other vehicles.	10 to 15	10 to 20
C	Stable conditions with significant affect from other vehicles.	15 to 25	20 to 35
D	High density traffic conditions still with stable flow.	25 to 35	35 to 55
E	At or near capacity flows.	35 to 50	55 to 80
F	Over capacity conditions.	> 50	> 80

Source: Highway Capacity Manual (2010), Chapters 18 & 19

Level of service calculations were performed for the study intersections using the Synchro 9 software package with results reported in accordance with the current *HCM 2010* methodology.

## Level of Service Policy

### City of Chico

The City of Chico *2030 General Plan* Circulation Element includes the following level of service policy:

*Policy CIRC-1.4 (Level of Service Standards) – Maintain LOS D or better for roadways and intersections at the peak PM period, except as specified below:*

- *LOS E is acceptable for City streets and intersections under the following circumstances:*
  - *Downtown streets within the boundaries identified in Figure DT-1 of the Downtown Element.*
  - *Arterials served by scheduled transit.*
  - *Arterials not served by scheduled transit, if bicycle and pedestrian facilities are provided within or adjacent to the roadway.*
  - *Utilize Caltrans LOS standards for Caltrans' facilities.*
  - *There are no LOS standards for private roads.*

*Segment 16 [of SR 99] is a 4-lane freeway beginning south of Chico, running from Southgate Avenue to north of Eaton Road.*

*The segment currently operates at LOS F, with AADT at 73,000. By the year 2035, peak hour operation is expected to remain at LOS F, with AADT increasing to 111,370.*

*Caltrans will collaborate and coordinate with BCAG and City of Chico on future projects and studies that will improve mobility along the SR 99 corridor.*

#### Level of Service Threshold Summary

LOS E was used as the threshold (i.e. the minimum acceptable LOS) for this project consistent with the City of Chico and Caltrans policies outlined above.

Where intersections are already experiencing level of service beyond the thresholds, conditions should not be exacerbated. In practice, this has often been interpreted as not increasing average delay per vehicle by more than 5 seconds at signalized intersections.

## **EXISTING TRANSPORTATION FACILITIES**

### ***Roadway Facilities***

A brief description of the key roadways in the study area is provided below.

*State Route (SR) 99* is a north-south highway that intersects Interstate 5 (I-5) near Redding, CA at its north end and I-5 south of Bakersfield, CA at its south end. Within the analysis area, SR 99 is a divided freeway with two through lanes in each direction.

*W. East Avenue* is an Arterial roadway in the City of Chico running in a northeast-southwest direction west of SR 99. East of SR 99, the roadway is called East Avenue. Within the project area, East Avenue is a four-lane roadway (two lanes in each direction) with left-turn pockets or a two-way left-turn lane for the entire length. Some intersections on East Avenue also have right-turn pockets. The posted speed limit on East Avenue varies from 25 mph near SR 99 to 45 mph at Cussick Avenue and Holly Avenue.

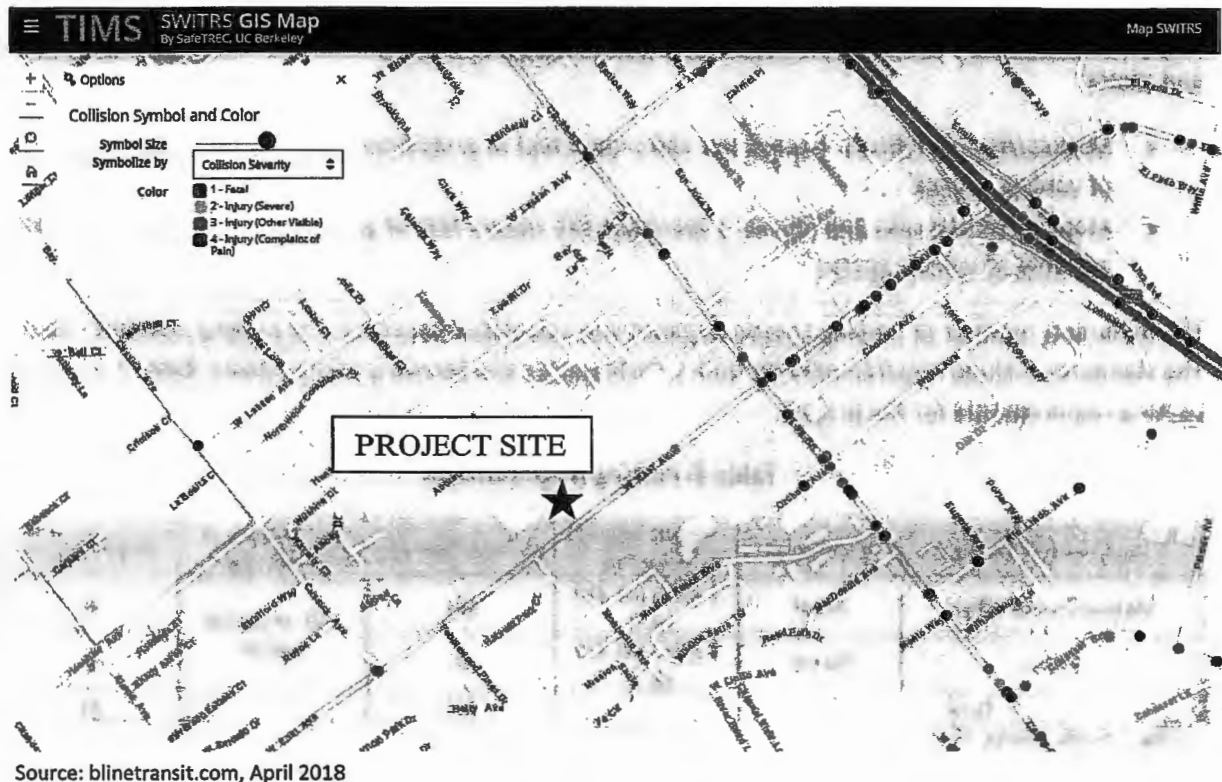
*Esplanade* is an Arterial roadway that generally parallels SR 99 west of the highway. In the project area, Esplanade is a four-lane roadway (two lanes in each direction) with a two-way left-turn lane. The posted speed limit on Esplanade near East Avenue is 35 mph.

*Cussick Avenue/Holly Avenue* is a two-lane Collector roadway. North of East Avenue the roadway is Cussick Avenue and south of East Avenue the roadway is called Holly Avenue. Cussick Avenue and Holly Avenue primarily serve residential uses. The posted speed limit on Cussick Avenue north of East Avenue is 25 mph. The posted speed limit on Holly Avenue south of East Avenue is 35 mph.



**TRAFFIC  
WORKS**

## 5-Year Collision History



## PROJECT CONDITIONS

### *Project Description*

The proposed project consists of a 120,292 square foot medical office building that would likely include approximately 90,000 square feet (75 percent) of medical/dental office and 30,000 square feet (25 percent) of clinical space. The project site is located on the north side of East Avenue on the vacant parcel between Enloe Rehabilitation Center and the Save Mart anchored shopping center.

### *Project Access*

As shown on the project site plan (Figure 2), the proposed project includes two access driveways, one connecting west to the existing East Avenue / Harvest Park Court/ Enloe Rehab Hospital signalized intersection and a new driveway on East Avenue east of Harvest Park Court. The new driveway would include right-in/right-out/left-in access only. Left-out access would be prohibited for safety and traffic operations reasons. Emergency access will be adequately provided with the multiple points of ingress and egress to the site.

**Table 4: Project Trip Generation**

Land Use (ITE Code)	Size/Units <sup>1</sup>	Trips <sup>2</sup>						
		Daily	AM	AM In	AM Out	PM	PM In	PM Out
Medical Dental Office (720)	90.25 ksf	3,140	251	196	55	312	87	225
Clinic (630)	30.05 ksf	1,147	111	87	24	99	29	70
<b>Total</b>		<b>4,287</b>	<b>362</b>	<b>283</b>	<b>79</b>	<b>411</b>	<b>116</b>	<b>295</b>

Notes: 1. ksf = 1,000 square feet

2. Based on the following ITE trip rates:

*Medical Dental Office:* Daily – 34.8 trips per ksf; AM – 2.78 trips per ksf (78% in / 22% out); PM – 3.46 trips per ksf (28% in / 72% out)

*Clinic:* 38.16 trips per ksf; AM – 3.69 trips per ksf (78% in / 22% out); PM – 3.28 trips per ksf (29% in / 71% out)

Source: Traffic Works, 2018

### ***Trip Distribution and Assignment***

Project generated traffic was distributed to the surrounding roadway network based on existing traffic volumes and traffic patterns in the area and the locations of complimentary land uses. The following trip distribution percentages were used:

- 15 % to/from west on East Avenue
  - 5 % to/from west on East Avenue
  - 5 % to/from north on Cussick Avenue
  - 5 % to/from south on Holly Avenue
- 85 % to/from east on East Avenue
  - 2 % to/from the Save Mart Driveway
  - 3 % to/from the Raley's Driveway
  - 10 % to/from north on Esplanade
  - 25 % to/from south on Esplanade
  - 10 % to/from north on SR 99
  - 25 % to/from south on SR 99
  - 10 % to/from east on East Avenue

The project trip distribution and assignment is shown on **Figure 5**.

### ***Vehicle Miles Travelled (VMT) Estimation***

With adoption of and implementation of California Senate Bill 743, Vehicle Miles Travelled (VMT) is an important consideration and a key metric of vehicular travel contributions to Green House Gas (GHG) emissions and energy consumption. VMT is typically expressed in miles per day and can simplistically be calculated by multiplying the number of daily project generated trips by the anticipated trip length(s).

The average trip length and percentage of each type of commercial based trip in Butte County was obtained from the California Emissions Estimator Model (CalEEMod). The CalEEMod trip length output

**Table 6: Existing Plus Project Conditions Intersection Level of Service**

Intersection	Control	Existing				Existing Plus Project			
		AM		PM		AM		PM	
		Delay <sup>1</sup>	LOS	Delay <sup>1</sup>	LOS	Delay <sup>1</sup>	LOS	Delay <sup>1</sup>	LOS
East Ave/Holly Ave/Cussick Ave	Signal	15.7	B	20.6	C	16.0	B	21.7	C
East Ave/Harvest Park Ct <sup>2</sup>	Signal	6.1	A	8.4	A	7.6	A	15.9	B
East Ave/Project Driveway	Side Street STOP								
Southbound Right		N/A				13.6	A	19.8	C
Eastbound Left						11.3	B	11.8	B
East Ave/Raley's Dwy/Save Mart Dwy	Signal	7.3	A	16.3	B	7.5	A	18.0	B
East Ave/Esplanade	Signal	30.6	C	31.7	C	33.0	C	32.8	C
East Ave/SR 99 SB Ramps	Signal	14.2	B	14.8	B	14.2	B	14.9	B
East Ave/SR 99 NB Ramps	Signal	19.4	B	18.5	B	20.1	C	18.5	B

Notes: 1. Delay is reported in seconds per vehicle for the overall intersection for signalized intersections.

2. Delay and LOS reported based on HCM 2000 methodology because HCM 2010 cannot analyze U-turn movements.

Source: Traffic Works, 2018

As shown in the table, all the study intersections are expected to operate at acceptable levels of service during the AM and PM peak hours under Existing Plus Project conditions.

## CUMULATIVE CONDITIONS

### Traffic Volume Forecasts

Future year (2040) traffic volume forecasts were developed using outputs from the Butte County Association of Governments (BCAG) regional travel demand forecasting model. The BCAG model provides traffic volumes forecasts for the years 2014 and 2040 which were used to develop annual average growth rates for major roadways in the project area. Based on the BCAG model forecasts, the following growth rates were applied to the existing traffic volumes to develop future year (2040) traffic volume forecasts:

- 1.2 percent per year growth on East Avenue, Cussick Avenue/Holly Avenue, and Esplanade
- 2.0 percent per year growth on the SR 99 Ramps
- Zero percent growth was assumed at Harvest Park Court and Save Mart and Raley's Driveways, as the areas these roadways serve are already built-out

The final 2040 turning movement volumes were rounded to the nearest 5 (if the volume was less than or equal to 5) or 10 (if the volume was greater than 5) vehicles. Volumes were also adjusted to be balanced between intersections based on existing traffic volumes. The future year (2040) traffic volumes at the study intersections are shown on **Figure 7**.



## CUMULATIVE PLUS PROJECT CONDITIONS

### *Traffic Volumes*

Cumulative Plus Project traffic volumes were developed by adding the project generated trips (Figure 5) to the Cumulative No Project traffic volumes (Figure 7) and are shown on Figure 8, attached.

### *Intersection Level of Service Analysis*

Table 8 presents the level of service analysis summary for the Cumulative Plus Project scenario assuming the Cumulative No Project intersection configurations and traffic controls (same as Existing Conditions). Detailed calculation sheets are provided in Appendix D, attached.

**Table 8: Cumulative Plus Project Conditions Intersection Level of Service**

Intersection	Control	Cumulative				Cumulative Plus Project			
		AM		PM		AM		PM	
		Delay <sup>1</sup>	LOS	Delay <sup>1</sup>	LOS	Delay <sup>1</sup>	LOS	Delay <sup>1</sup>	LOS
East Ave/Holly Ave/Cussick Ave	Signal	19.6	B	39.9	D	19.9	B	42.4	D
East Ave/Harvest Park Ct <sup>2</sup>	Signal	6.6	A	10.0	B	11.1	B	48.3	D
East Ave/Project Driveway	Side Street STOP								
Southbound Right		N/A				15.7	C	28.2	D
Eastbound Left						13.1	B	14.1	B
East Ave/Raley's Dwy/Save Mart Dwy	Signal	15.5	B	20.9	C	19.0	B	24.0	C
East Ave/Esplanade	Signal	35.2	D	45.2	D	37.8	D	53.3	D
East Ave/SR 99 SB Ramps	Signal	15.6	B	15.9	B	15.7	B	15.8	B
East Ave/SR 99 NB Ramps	Signal	21.1	C	20.5	C	22.0	C	21.0	C

Notes: 1. Delay is reported in seconds per vehicle for the overall intersection for signalized intersections.

2. Delay and LOS reported based on HCM 2000 methodology because HCM 2010 cannot analyze U-turn movements.

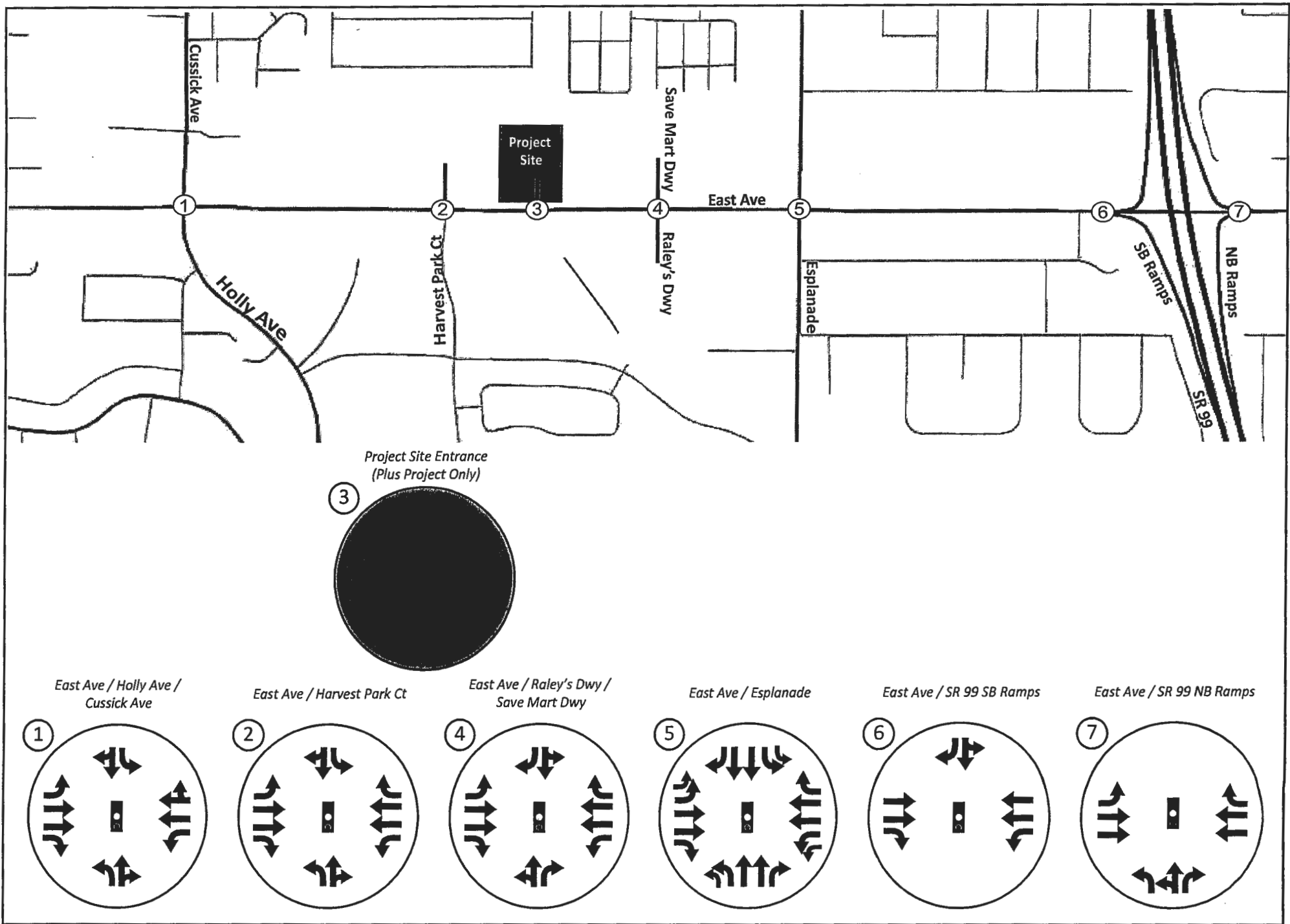
Source: Traffic Works, 2018

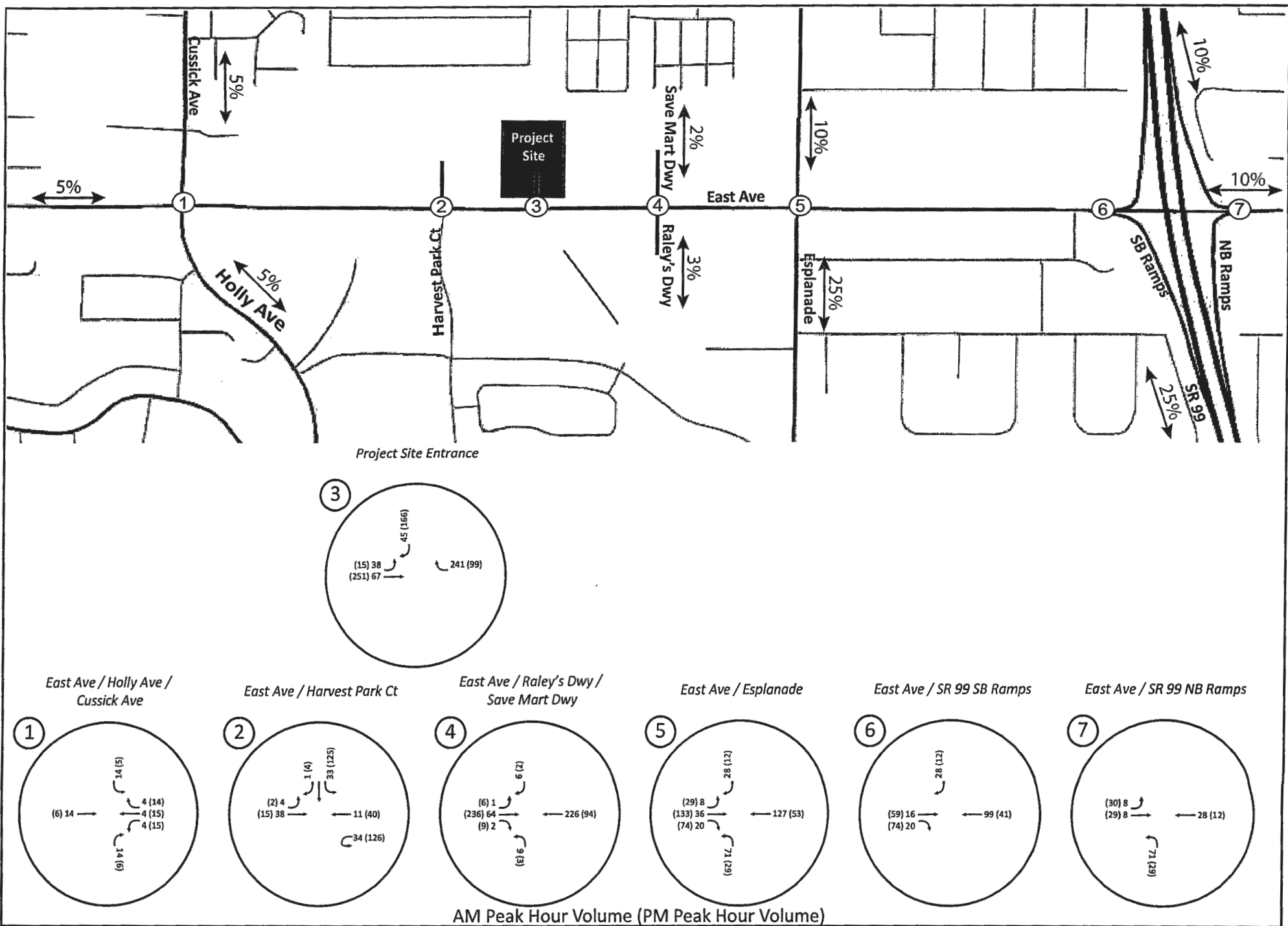
As shown in the table, all the study intersections are expected to operate at acceptable levels of service during the AM and PM peak hours under Cumulative Plus Project conditions.

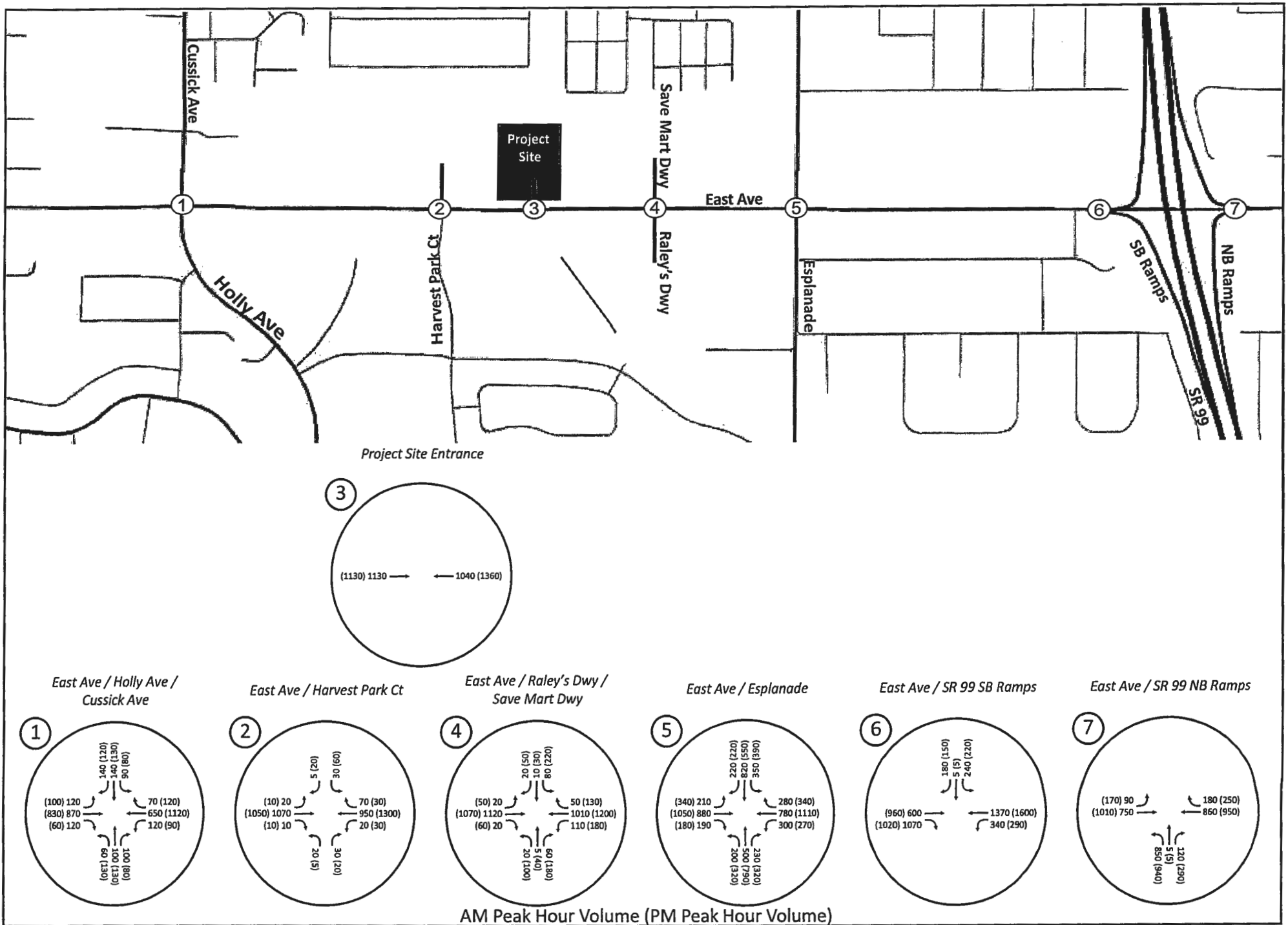
## Study Locations

- 1 East Ave / Cusstock Ave / Holly Ave
- 2 East Ave / Harvest Park Ct / Enloe Rehab
- 3 East Ave / Project Driveway
- 4 East Ave / Raley's / Save Mart Driveway
- 5 East Ave / Esplanade
- 6 East Ave / SR 99 SB Ramps
- 7 East Ave / SR 99 NB Ramps









# **Appendix A**

## **Existing LOS Calculations**

















# HCM 2010 Signalized Intersection Summary

## 2: Harvest Park Ct & East Ave

























Existing Conditions  
AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	1	2	1	1	2	1	1	2	1	1	2	1
Traffic Volume (veh/h)	16	849	2	14	727	62	14	0	27	24	0	3
Future Volume (veh/h)	16	849	2	14	727	62	14	0	27	24	0	3
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	18	954	1	16	817	44	16	0	0	27	0	0
Adj No. of Lanes	1	2	1	1	2	1	1	1	0	1	1	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	56	2172	972	50	2122	949	250	120	0	250	120	0
Arrive On Green	0.03	0.61	0.61	0.03	0.60	0.60	0.06	0.00	0.00	0.06	0.00	0.00
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1412	1863	0	1412	1863	0
Grp Volume(v), veh/h	18	954	1	16	817	44	16	0	0	27	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1412	1863	0	1412	1863	0
Q Serve(g_s), s	0.4	6.5	0.0	0.4	5.4	0.5	0.5	0.0	0.0	0.8	0.0	0.0
Cycle Q Clear(g_c), s	0.4	6.5	0.0	0.4	5.4	0.5	0.5	0.0	0.0	0.8	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	56	2172	972	50	2122	949	250	120	0	250	120	0
V/G Ratio(X)	0.32	0.44	0.00	0.32	0.39	0.05	0.06	0.00	0.00	0.11	0.00	0.00
Avail Cap(c_a), veh/h	783	2735	1223	783	2735	1223	1125	1275	0	1125	1275	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	21.5	4.6	3.4	21.6	4.7	3.7	20.0	0.0	0.0	20.2	0.0	0.0
Incr Delay (d2), s/veh	1.2	0.2	0.0	1.3	0.2	0.0	0.1	0.0	0.0	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	3.1	0.0	0.2	2.7	0.2	0.2	0.0	0.0	0.3	0.0	0.0
LnGrp Delay(d),s/veh	22.7	4.8	3.4	22.9	4.9	3.8	20.1	0.0	0.0	20.3	0.0	0.0
LnGrp LOS	C	A	A	C	A	A	C			C		
Approach Vol, veh/h	973		877		16		27					
Approach Delay, s/veh	5.2		5.2		20.1		20.3					
Approach LOS	A		A		C		C					
Time												
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.3	33.1		6.9	5.9	32.5		6.9				
Change Period (Y+Rc), s	4.0	5.3		4.0	4.5	5.3		4.0				
Max Green Setting (Gmax), s	20.0	35.0		31.0	20.0	35.0		31.0				
Max Q Clear Time (g_c+I1), s	2.4	8.5		2.8	2.4	7.4		2.5				
Green Ext Time (p_c), s	0.0	19.2		0.1	0.0	19.7		0.1				
Intersection Summary												
HCM 2010 Ctrl Delay	5.5											
HCM2010 LOS	A											
Notes												
User approved pedestrian interval to be less than phase max green.												

Enloe Medical Center

# HCM 2010 Signalized Intersection Summary 5: Esplanade & East Ave

Existing Conditions  
AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	167	656	148	221	579	198	159	393	166	262	649	171
Future Volume (veh/h)	167	656	148	221	579	198	159	393	166	262	649	171
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	201	790	117	266	698	137	192	473	155	316	782	134
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	291	1189	659	393	1294	766	277	917	591	407	1051	604
Arrive On Green	0.08	0.34	0.34	0.11	0.37	0.37	0.08	0.26	0.26	0.12	0.30	0.30
Sat Flow, veh/h	3442	3539	1583	3442	3539	1583	3442	3539	1583	3442	3539	1583
Grp Volume(v), veh/h	201	790	117	266	698	137	192	473	155	316	782	134
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1770	1583	1721	1770	1583	1721	1770	1583
Q Serve(g_s), s	5.3	17.8	4.3	6.9	14.5	4.6	5.1	10.7	6.3	8.3	18.6	5.3
Cycle Q Clear(g_c), s	5.3	17.8	4.3	6.9	14.5	4.6	5.1	10.7	6.3	8.3	18.6	5.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	291	1189	659	393	1294	766	277	917	591	407	1051	604
V/C Ratio(X)	0.69	0.66	0.18	0.68	0.54	0.18	0.69	0.52	0.26	0.78	0.74	0.22
Avail Cap(c_a), veh/h	922	1328	721	922	1328	781	922	1100	673	922	1138	643
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.5	26.5	17.2	39.7	23.4	13.6	41.8	29.6	20.3	39.9	29.6	19.5
Incr Delay (d2), s/veh	2.9	1.3	0.2	4.3	0.6	0.2	2.3	0.6	0.3	2.4	2.8	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	8.9	1.9	3.5	7.2	2.0	2.5	5.3	2.8	4.1	9.4	2.4
LnGrp Delay(d),s/veh	44.4	27.8	17.3	44.0	24.0	13.8	44.1	30.2	20.6	42.3	32.4	19.8
LnGrp LOS	D	C	B	D	C	B	D	C	C	D	C	B
Approach Vol, veh/h	1108				1101				820			
Approach Delay, s/veh	29.7				27.5				31.7			
Approach LOS	C				C				C			
Time	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.3	36.1	11.1	31.8	11.5	38.9	14.6	28.3				
Change Period (Y+Rc), s	3.6	4.8	3.6	4.1	3.6	4.8	3.6	4.1				
Max Green Setting (Gmax), s	25.0	35.0	25.0	30.0	25.0	35.0	25.0	29.0				
Max Q Clear Time (g_c+I1), s	8.9	19.8	7.1	20.6	7.3	16.5	10.3	12.7				
Green Ext Time (p_c), s	1.7	11.5	0.4	7.1	0.6	13.5	0.7	11.1				
Intersection Summary												
HCM 2010 Ctrl Delay	30.6											
HCM 2010 LOS	C											



# HCM 2010 Signalized Intersection Summary 7: SR 99 NB Ramps & East Ave

























Existing Conditions  
AM Peak

	WBT	WB	WB	WB	WB	WB	WB	WB	WB	WB	WB	WB
Lane Configurations	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖
Traffic Volume (veh/h)	59	581	0	0	682	125	589	3	86	0	0	0
Future Volume (veh/h)	59	581	0	0	682	125	589	3	86	0	0	0
Number	5	2	12	1	6	16	3	8	18			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1863	1863	1863	1863			
Adj Flow Rate, veh/h	69	676	0	0	793	72	687	0	15			
Adj No. of Lanes	1	2	0	0	2	1	2	0	1			
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	492	2200	0	0	947	424	796	0	355			
Arrive On Green	0.55	1.00	0.00	0.00	0.27	0.27	0.22	0.00	0.22			
Sat Flow, veh/h	1774	3632	0	0	3632	1583	3548	0	1583			
Grp Volume(v), veh/h	69	676	0	0	793	72	687	0	15			
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1770	1583	1774	0	1583			
Q Serve(g_s), s	1.2	0.0	0.0	0.0	13.7	2.3	12.1	0.0	0.5			
Cycle Q Clear(g_c), s	1.2	0.0	0.0	0.0	13.7	2.3	12.1	0.0	0.5			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	492	2200	0	0	947	424	796	0	355			
V/C Ratio(X)	0.14	0.31	0.00	0.00	0.84	0.17	0.86	0.00	0.04			
Avail Cap(c_a), veh/h	492	2200	0	0	1089	487	1365	0	609			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.94	0.94	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	10.7	0.0	0.0	0.0	22.5	18.3	24.2	0.0	19.7			
Incr Delay (d2), s/veh	0.0	0.3	0.0	0.0	8.7	0.9	1.2	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.6	0.1	0.0	0.0	7.9	1.1	6.0	0.0	0.2			
LnGrp Delay(d),s/veh	10.8	0.3	0.0	0.0	31.2	19.1	25.4	0.0	19.8			
LnGrp LOS	B	A			C	B	C		B			
Approach Vol, veh/h		745			865			702				
Approach Delay, s/veh		1.3			30.2			25.3				
Approach LOS		A			C			C				
Time	1	2	3	4	5	6	7	8	9	10	11	12
Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		45.4			23.0	22.4		19.6				
Change Period (Y+Rc), s		* 5			* 5	* 5		5.0				
Max Green Setting (Gmax), s		* 30			* 5	* 20		25.0				
Max Q Clear Time (g_c+I1), s		2.0			3.2	15.7		14.1				
Green Ext Time (p_c), s		3.2			0.7	1.7		0.5				
Intersection Summary												
HCM 2010 Ctrl Delay					19.4							
HCM 2010 LOS					B							
Notes												
User approved volume balancing among the lanes for turning movement.												

Enloe Medical Center

# HCM 2010 Signalized Intersection Summary 2: Harvest Park Ct & East Ave













Existing Conditions  
PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	842	1	21	1026	23	3	0	17	57	0	16
Future Volume (veh/h)	8	842	1	21	1026	23	3	0	17	57	0	16
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	8	859	1	21	1047	14	3	0	2	58	0	2
Adj No. of Lanes	1	2	1	1	2	1	1	1	0	1	1	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	26	2127	952	63	2164	968	240	0	134	240	0	134
Arrive On Green	0.01	0.60	0.60	0.04	0.61	0.61	0.08	0.00	0.08	0.08	0.00	0.08
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1071	0	1583	1071	0	1583
Grp Volume(v), veh/h	8	859	1	21	1047	14	3	0	2	58	0	2
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1071	0	1583	1071	0	1583
Q Serve(g_s), s	0.2	6.1	0.0	0.6	7.8	0.2	0.1	0.0	0.1	2.5	0.0	0.1
Cycle Q Clear(g_c), s	0.2	6.1	0.0	0.6	7.8	0.2	0.2	0.0	0.1	2.6	0.0	0.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	26	2127	952	63	2164	968	240	0	134	240	0	134
V/C Ratio(X)	0.31	0.40	0.00	0.33	0.48	0.01	0.01	0.00	0.01	0.24	0.00	0.01
Avail Cap(c_a), veh/h	743	2595	1161	743	2595	1161	845	0	1028	845	0	1028
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	23.3	5.0	3.8	22.5	5.1	3.6	20.1	0.0	20.0	21.2	0.0	20.0
Incr Delay (d2), s/veh	2.4	0.2	0.0	1.1	0.2	0.0	0.0	0.0	0.0	0.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	2.9	0.0	0.3	3.7	0.1	0.0	0.0	0.0	0.8	0.0	0.0
LnGrp Delay(d),s/veh	25.7	5.2	3.8	23.6	5.4	3.6	20.1	0.0	20.1	21.6	0.0	20.1
LnGrp LOS	C	A	A	C	A	A	C		C	C		C
Approach Vol, veh/h	868				1082		5		60			
Approach Delay, s/veh	5.4				5.7		20.1		21.5			
Approach LOS	A				A		C		C			
Time	1	2	3	4	5	6	7	8	9	10	11	12
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.7	34.0		8.0	5.2	34.5		8.0				
Change Period (Y+Rc), s	4.0	5.3		4.0	4.5	5.3		4.0				
Max Green Setting (Gmax), s	20.0	35.0		31.0	20.0	35.0		31.0				
Max Q Clear Time (g_c+I1), s	2.6	8.1		4.6	2.2	9.8		2.2				
Green Ext Time (p_c), s	0.0	20.4		0.2	0.0	19.4		0.2				
Intersection Summary												
HCM 2010 Ctrl Delay	6.1											
HCM 2010 LOS	A											
Notes												
User approved pedestrian interval to be less than phase max green.												

Enloe Medical Center

# HCM 2010 Signalized Intersection Summary 5: Esplanade & East Ave













Existing Conditions  
PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SEB	SET	SEB
Lane Configurations	↰↰	↰↰	↰	↰↰	↰↰	↰	↰↰	↰↰	↰	↰↰	↰↰	↰
Traffic Volume (veh/h)	270	749	142	212	878	266	253	627	239	289	434	175
Future Volume (veh/h)	270	749	142	212	878	266	253	627	239	289	434	175
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	278	772	64	219	905	227	261	646	202	298	447	128
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	371	1266	726	334	1228	727	347	939	573	386	978	608
Arrive On Green	0.11	0.36	0.36	0.10	0.35	0.35	0.10	0.27	0.27	0.11	0.28	0.28
Sat Flow, veh/h	3442	3539	1583	3442	3539	1583	3442	3539	1583	3442	3539	1583
Grp Volume(v), veh/h	278	772	64	219	905	227	261	646	202	298	447	128
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1770	1583	1721	1770	1583	1721	1770	1583
Q Serve(g_s), s	7.5	17.2	2.2	5.9	21.5	8.7	7.1	15.7	8.9	8.1	10.0	5.2
Cycle Q Clear(g_c), s	7.5	17.2	2.2	5.9	21.5	8.7	7.1	15.7	8.9	8.1	10.0	5.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	371	1266	726	334	1228	727	347	939	573	386	978	608
V/C Ratio(X)	0.75	0.61	0.09	0.66	0.74	0.31	0.75	0.69	0.35	0.77	0.46	0.21
Avail Cap(c_a), veh/h	898	1293	738	898	1293	756	898	1071	633	898	1108	666
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.5	25.3	14.6	41.7	27.5	16.4	41.9	31.6	22.3	41.4	28.7	19.8
Incr Delay (d2), s/veh	3.0	1.0	0.1	4.6	2.4	0.3	2.5	1.9	0.5	2.5	0.5	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	8.5	1.0	3.0	10.8	3.8	3.5	8.0	4.0	4.0	5.0	2.3
LnGrp Delay(d),s/veh	44.5	26.2	14.7	46.4	29.8	16.7	44.4	33.5	22.9	43.8	29.2	20.0
LnGrp LOS	D	C	B	D	C	B	D	C	C	D	C	C
Approach Vol, veh/h	1114				1351				1109			
Approach Delay, s/veh	30.1				30.3				34.1			
Approach LOS	C				C				C			
Time												
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.9	39.1	13.3	30.6	13.9	38.0	14.3	29.5				
Change Period (Y+Rc), s	3.6	4.8	3.6	4.1	3.6	4.8	3.6	4.1				
Max Green Setting (Gmax), s	25.0	35.0	25.0	30.0	25.0	35.0	25.0	29.0				
Max Q Clear Time (g_c+I1), s	7.9	19.2	9.1	12.0	9.5	23.5	10.1	17.7				
Green Ext Time (p_c), s	1.4	12.9	0.6	10.8	0.8	9.7	0.7	7.7				
Intersection Summary												
HCM 2010 Ctrl Delay	31.7											
HCM 2010 LOS	C											



# HCM 2010 Signalized Intersection Summary 7: SR 99 NB Ramps & East Ave












Existing Conditions  
PM Peak

												
Movement	EBL	EBT	EBL	WBL	WBT	WBL	NBL	NBT	NBL	SBL	SBT	SBL
Lane Configurations	↰	↷			↷	↰	↰	↰	↰			
Traffic Volume (veh/h)	128	804	0	0	805	173	668	2	204	0	0	0
Future Volume (veh/h)	128	804	0	0	805	173	668	2	204	0	0	0
Number	5	2	12	1	6	16	3	8	18			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1863	1863	1863	1863			
Adj Flow Rate, veh/h	131	820	0	0	821	108	683	0	121			
Adj No. of Lanes	1	2	0	0	2	1	2	0	1			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	481	2202	0	0	971	434	794	0	355			
Arrive On Green	0.54	1.00	0.00	0.00	0.27	0.27	0.22	0.00	0.22			
Sat Flow, veh/h	1774	3632	0	0	3632	1583	3548	0	1583			
Grp Volume(v), veh/h	131	820	0	0	821	108	683	0	121			
Grp Sat Flow(s), veh/h/ln	1774	1770	0	0	1770	1583	1774	0	1583			
Q Serve(g_s), s	2.6	0.0	0.0	0.0	14.2	3.5	12.0	0.0	4.2			
Cycle Q Clear(g_c), s	2.6	0.0	0.0	0.0	14.2	3.5	12.0	0.0	4.2			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	481	2202	0	0	971	434	794	0	355			
V/C Ratio(X)	0.27	0.37	0.00	0.00	0.85	0.25	0.86	0.00	0.34			
Avail Cap(c_a), veh/h	481	2202	0	0	1089	487	1365	0	609			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.90	0.90	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	11.4	0.0	0.0	0.0	22.3	18.4	24.2	0.0	21.2			
Incr Delay (d2), s/veh	0.1	0.4	0.0	0.0	9.0	1.4	1.1	0.0	0.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	1.2	0.1	0.0	0.0	8.2	1.7	6.0	0.0	1.8			
LnGrp Delay(d),s/veh	11.5	0.4	0.0	0.0	31.3	19.7	25.3	0.0	21.4			
LnGrp LOS	B	A			C	B	C		C			
Approach Vol, veh/h	951				929				804			
Approach Delay, s/veh	2.0				30.0				24.8			
Approach LOS	A				C				C			
Timer	1				2				3			
Assigned Phs	2				5				8			
Phs Duration (G+Y+Rc), s	45.4				22.6				19.6			
Change Period (Y+Rc), s	* 5				5				5.0			
Max Green Setting (Gmax), s	* 30				* 5				* 20			
Max Q Clear Time (g_c+I1), s	2.0				4.6				16.2			
Green Ext Time (p_c), s	4.0				0.2				1.6			
Intersection Summary												
HCM 2010 Ctrl Delay	18.5											
HCM 2010 LOS	B											
Notes												
User approved volume balancing among the lanes for turning movement.												

Enloe Medical Center

HCM 2010 Signalized Intersection Summary  
1: Holly Ave/Cussick Ave & East Ave

Existing Plus Project Conditions  
AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NET	NBR	SBL	SBT	SBR
Lane Configurations	↰	↷↷	↱	↰	↷↷		↰	↱		↰	↱	
Traffic Volume (veh/h)	92	705	92	101	490	60	44	78	90	88	111	109
Future Volume (veh/h)	92	705	92	101	490	60	44	78	90	88	111	109
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	100	766	54	110	533	55	48	85	56	96	121	84
Adj No. of Lanes	1	2	1	1	2	0	1	1	0	1	1	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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	187	1271	569	195	1062	109	121	148	98	183	181	125
Arrive On Green	0.11	0.36	0.36	0.11	0.33	0.33	0.07	0.14	0.14	0.10	0.18	0.18
Sat Flow, veh/h	1774	3539	1583	1774	3240	333	1774	1049	691	1774	1025	712
Grp Volume(v), veh/h	100	766	54	110	290	298	48	0	141	96	0	205
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1804	1774	0	1741	1774	0	1737
Q Serve(g_s), s	2.7	8.8	1.1	2.9	6.6	6.6	1.3	0.0	3.8	2.6	0.0	5.5
Cycle Q Clear(g_c), s	2.7	8.8	1.1	2.9	6.6	6.6	1.3	0.0	3.8	2.6	0.0	5.5
Prop In Lane	1.00		1.00	1.00		0.18	1.00		0.40	1.00		0.41
Lane Grp Cap(c), veh/h	187	1271	569	195	580	591	121	0	246	183	0	306
V/C Ratio(X)	0.54	0.60	0.09	0.56	0.50	0.50	0.40	0.00	0.57	0.52	0.00	0.67
Avail Cap(c_a), veh/h	534	2839	1270	534	710	723	605	0	873	534	0	871
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.2	13.1	10.6	21.1	13.5	13.5	22.3	0.0	20.0	21.2	0.0	19.2
Incr Delay (d2), s/veh	0.9	0.2	0.0	1.0	0.2	0.2	0.8	0.0	0.8	0.9	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	4.3	0.5	1.5	3.3	3.3	0.7	0.0	1.9	1.3	0.0	2.7
LnGrp Delay(d),s/veh	22.0	13.2	10.6	22.0	13.7	13.7	23.0	0.0	20.8	22.1	0.0	20.1
LnGrp LOS	C	B	B	C	B	B	C		C	C		C
Approach Vol, veh/h	920				698		189				301	
Approach Delay, s/veh	14.0				15.0		21.4				20.8	
Approach LOS	B				B		C				C	
Time	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.5	22.7	6.4	12.3	10.0	21.1	8.1	10.5				
Change Period (Y+Rc), s	3.0	4.8	3.0	3.5	4.8	* 4.8	3.0	3.5				
Max Green Setting (Gmax), s	15.0	40.0	17.0	25.0	15.0	* 20	15.0	25.0				
Max Q Clear Time (g_c+I1), s	4.9	10.8	3.3	7.5	4.7	8.6	4.6	5.8				
Green Ext Time (p_c), s	0.1	7.1	0.0	1.3	0.1	4.9	0.1	1.3				
Intersection Summary												
HCM 2010 Ctrl Delay	16.0											
HCM 2010 LOS	B											
Notes												
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.												

# HCM Signalized Intersection Capacity Analysis 2: Harvest Park Ct & East Ave

























Existing Plus Project Conditions  
AM Peak

Movement	SBP
Lane Configurations	
Traffic Volume (vph)	4
Future Volume (vph)	4
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.89
Adj. Flow (vph)	4
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	



# HCM 2010 Signalized Intersection Summary 4: Raley's Dwy & East Ave

Existing Plus Project Conditions  
AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	890	22	74	989	42	26	4	60	71	6	19
Future Volume (veh/h)	18	890	22	74	989	42	26	4	60	71	6	19
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	21	1047	13	87	1164	29	31	5	0	84	7	0
Adj No. of Lanes	1	2	1	1	2	1	0	1	1	0	1	1
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	62	2168	970	162	2369	1060	256	33	167	264	13	167
Arrive On Green	0.03	0.61	0.61	0.09	0.67	0.67	0.11	0.11	0.00	0.11	0.11	0.00
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	1322	312	1583	1366	127	1583
Grp Volume(V), veh/h	21	1047	13	87	1164	29	36	0	0	91	0	0
Grp Sat Flow(s), veh/h/ln	1774	1770	1583	1774	1770	1583	1633	0	1583	1493	0	1583
Q Serve(g_s), s	0.7	9.4	0.2	2.7	9.4	0.4	0.0	0.0	0.0	2.2	0.0	0.0
Cycle Q Clear(g_c), s	0.7	9.4	0.2	2.7	9.4	0.4	1.0	0.0	0.0	3.2	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.86		1.00	0.92		1.00
Lane Grp Cap(c), veh/h	62	2168	970	162	2369	1060	288	0	167	277	0	167
V/C Ratio(X)	0.34	0.48	0.01	0.54	0.49	0.03	0.12	0.00	0.00	0.33	0.00	0.00
Avail Cap(c_a), veh/h	461	2453	1098	461	2453	1098	815	0	741	797	0	741
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	27.2	6.1	4.4	25.1	4.7	3.2	23.6	0.0	0.0	24.5	0.0	0.0
Incr Delay (d2), s/veh	1.2	0.2	0.0	1.0	0.2	0.0	0.1	0.0	0.0	0.3	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.3	4.6	0.1	1.4	4.4	0.2	0.5	0.0	0.0	1.4	0.0	0.0
LnGrp Delay(d), s/veh	28.4	6.4	4.4	26.1	4.9	3.2	23.6	0.0	0.0	24.7	0.0	0.0
LnGrp LOS	C	A	A	C	A	A	C			C		
Approach Vol, veh/h	1081				1280		36				91	
Approach Delay, s/veh	6.8				6.3		23.6				24.7	
Approach LOS	A				A		C				C	
Time	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.3	39.9		9.6	5.0	43.1		9.6				
Change Period (Y+Rc), s	3.0	4.5		3.5	3.0	4.5		3.5				
Max Green Setting (Gmax), s	15.0	40.0		27.0	15.0	40.0		27.0				
Max Q Clear Time (g_c+l1), s	4.7	11.4		5.2	2.7	11.4		3.0				
Green Ext Time (p_c), s	0.1	24.0		0.4	0.0	24.0		0.4				
Intersection Summary												
HCM 2010 Ctrl Delay	7.5											
HCM2010 LOS	A											

# HCM 2010 Signalized Intersection Summary 6: SR 99 SB Ramps & East Ave

Existing Plus Project Conditions  
AM Peak

	↖	→	↗	↖	←	↖	↗	↑	↖	↗	↓	↖
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑	↑	↑↑						↓	↓
Traffic Volume (veh/h)	0	487	762	214	1156	0	0	0	0	169	2	156
Future Volume (veh/h)	0	487	762	214	1156	0	0	0	0	169	2	156
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1900	1863	1863
Adj Flow Rate, veh/h	0	573	0	252	1360	0				199	2	70
Adj No. of Lanes	0	2	1	1	2	0				0	1	1
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85				0.85	0.85	0.85
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	749	335	733	2483	0				254	3	229
Arrive On Green	0.00	0.21	0.00	0.41	0.70	0.00				0.14	0.14	0.14
Sat Flow, veh/h	0	3632	1583	1774	3632	0				1757	18	1583
Grp Volume(v), veh/h	0	573	0	252	1360	0				201	0	70
Grp Sat Flow(s), veh/h/ln	0	1770	1583	1774	1770	0				1775	0	1583
Q Serve(g_s), s	0.0	9.9	0.0	6.3	12.1	0.0				7.1	0.0	2.6
Cycle Q Clear(g_c), s	0.0	9.9	0.0	6.3	12.1	0.0				7.1	0.0	2.6
Prop In Lane	0.00		1.00	1.00		0.00				0.99		1.00
Lane Grp Cap(c), veh/h	0	749	335	733	2483	0				257	0	229
V/C Ratio(X)	0.00	0.77	0.00	0.34	0.55	0.00				0.78	0.00	0.31
Avail Cap(c_a), veh/h	0	1143	512	733	2483	0				601	0	536
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.67	0.00	0.75	0.75	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	24.1	0.0	13.1	4.7	0.0				26.8	0.0	24.9
Incr Delay (d2), s/veh	0.0	5.0	0.0	0.1	0.7	0.0				2.0	0.0	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	0.0	5.4	0.0	3.1	6.1	0.0				3.6	0.0	1.1
LnGrp Delay(d), s/veh	0.0	29.1	0.0	13.1	5.4	0.0				28.8	0.0	25.2
LnGrp LOS		C		B	A					C		C
Approach Vol, veh/h		573			1612						271	
Approach Delay, s/veh		29.1			6.6						27.9	
Approach LOS		C			A						C	
Time	1	2	3	4	5	6						
Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	31.8	18.8		14.4		50.6						
Change Period (Y+Rc), s	* 5	* 5		* 5		* 5						
Max Green Setting (Gmax), s	* 8	* 21		* 22		* 33						
Max Q Clear Time (g_c+I1), s	8.3	11.9		9.1		14.1						
Green Ext Time (p_c), s	0.0	1.9		0.4		7.1						
Intersection Summary												
HCM 2010 Ctrl Delay				14.2								
HCM 2010 LOS				B								
Notes												
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.												

























Enloe Medical Center



# HCM 2010 Signalized Intersection Summary

## 1: Holly Ave/Cussick Ave & East Ave

Existing Plus Project Conditions  
PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SEB	SEB	SBR
Lane Configurations												
Traffic Volume (veh/h)	77	665	50	87	899	112	104	102	68	70	102	97
Future Volume (veh/h)	77	665	50	87	899	112	104	102	68	70	102	97
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	83	715	17	94	967	111	112	110	49	75	110	71
Adj No. of Lanes	1	2	1	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	163	1346	602	173	1130	130	186	212	95	154	165	107
Arrive On Green	0.09	0.38	0.38	0.10	0.35	0.35	0.10	0.17	0.17	0.09	0.16	0.16
Sat Flow, veh/h	1774	3539	1583	1774	3200	367	1774	1222	544	1774	1059	683
Grp Volume(v), veh/h	83	715	17	94	535	543	112	0	159	75	0	181
Grp Sat Flow(s), veh/h/ln	1774	1770	1583	1774	1770	1798	1774	0	1767	1774	0	1742
Q Serve(g_s), s	2.4	8.6	0.4	2.8	15.3	15.3	3.3	0.0	4.5	2.2	0.0	5.4
Cycle Q Clear(g_c), s	2.4	8.6	0.4	2.8	15.3	15.3	3.3	0.0	4.5	2.2	0.0	5.4
Prop In Lane	1.00		1.00	1.00		0.20	1.00		0.31	1.00		0.39
Lane Grp Cap(c), veh/h	163	1346	602	173	625	635	186	0	307	154	0	272
V/C Ratio(X)	0.51	0.53	0.03	0.54	0.86	0.86	0.60	0.00	0.52	0.49	0.00	0.67
Avail Cap(c_a), veh/h	487	2589	1158	487	647	658	552	0	808	487	0	796
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	23.7	13.2	10.6	23.5	16.4	16.4	23.4	0.0	20.5	23.8	0.0	21.7
Incr Delay (d2), s/veh	0.9	0.1	0.0	1.0	10.1	9.9	1.2	0.0	0.5	0.9	0.0	1.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	4.2	0.2	1.4	9.2	9.3	1.7	0.0	2.2	1.1	0.0	2.6
LnGrp Delay(d), s/veh	24.6	13.3	10.6	24.5	26.5	26.3	24.6	0.0	21.0	24.7	0.0	22.8
LnGrp LOS	C	B	B	C	C	C	C		C	C		C
Approach Vol, veh/h	815				1172				271			
Approach Delay, s/veh	14.4				26.2				22.5			
Approach LOS	B				C				G			
Time	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	8.3	25.6	8.7	12.0	9.8	24.1	7.8	13.0				
Change Period (Y+Rc), s	3.0	4.8	3.0	3.5	4.8	*4.8	3.0	3.5				
Max Green Setting (Gmax), s	15.0	40.0	17.0	25.0	15.0	*20	15.0	25.0				
Max Q Clear Time (g_c+l), s	4.8	10.6	5.3	7.4	4.4	17.3	4.2	6.5				
Green Ext Time (p_c), s	0.1	10.2	0.1	1.2	0.1	2.0	0.1	1.2				

### Intersection Summary

HCM 2010 Ctrl Delay 21.7

HCM 2010 LOS C

### Notes

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

Enloe Medical Center

# HCM Signalized Intersection Capacity Analysis 2: Harvest Park Ct & East Ave
























Existing Plus Project Conditions  
PM Peak

Movement	SBP
Lane Configurations	
Traffic Volume (vph)	20
Future Volume (vph)	20
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.98
Adj. Flow (vph)	20
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

# HCM Signalized Intersection Capacity Analysis 4: Raley's Dwy & East Ave

Existing Plus Project Conditions

PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SEL	SBT	SEB
Lane Configurations												
Traffic Volume (vph)	48	973	66	172	984	110	95	33	149	201	21	50
Future Volume (vph)	48	973	66	172	984	110	95	33	149	201	21	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.5	4.5	3.0	4.5	4.5		3.5	3.5		3.5	3.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.96	1.00		0.96	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583		1796	1583		1782	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.58	1.00		0.63	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583		1073	1583		1169	1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	49	1003	68	177	1014	113	98	34	154	207	22	52
RTOR Reduction (vph)	0	0	25	0	0	53	0	0	114	0	0	38
Lane Group Flow (vph)	49	1003	43	177	1014	60	0	132	40	0	229	14
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8		8	4		4
Actuated Green, G (s)	4.2	31.8	31.8	11.6	39.2	39.2		19.2	19.2		19.2	19.2
Effective Green, g (s)	4.2	31.8	31.8	11.6	39.2	39.2		19.2	19.2		19.2	19.2
Actuated g/C Ratio	0.06	0.43	0.43	0.16	0.53	0.53		0.26	0.26		0.26	0.26
Clearance Time (s)	3.0	4.5	4.5	3.0	4.5	4.5		3.5	3.5		3.5	3.5
Vehicle Extension (s)	2.0	4.0	4.0	2.0	4.0	4.0		2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	101	1529	683	278	1884	843		279	412		304	412
v/s Ratio Prot	0.03	c0.28		c0.10	0.29							
v/s Ratio Perm			0.03			0.04		0.12	0.03		c0.20	0.01
v/c Ratio	0.49	0.66	0.06	0.64	0.54	0.07		0.47	0.10		0.75	0.03
Uniform Delay, d1	33.7	16.6	12.2	29.0	11.3	8.4		22.9	20.6		25.0	20.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	1.3	1.1	0.1	3.5	0.4	0.0		0.5	0.0		9.0	0.0
Delay (s)	35.0	17.7	12.3	32.5	11.6	8.4		23.4	20.7		34.0	20.3
Level of Service	C	B	B	C	B	A		C	C		C	C
Approach Delay (s)		18.1			14.2			21.9			31.5	
Approach LOS		B			B			C			C	

## Intersection Summary

HCM 2000 Control Delay	18.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	73.6	Sum of lost time (s)	11.0
Intersection Capacity Utilization	65.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



# HCM 2010 Signalized Intersection Summary 6: SR 99 SB Ramps & East Ave

Existing Plus Project Conditions  
PM Peak

	↖	→	↗	↖	←	↗	↖	↑	↗	↘	↓	↖
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑	↑	↑↑						↓	↑
Traffic Volume (veh/h)	0	836	794	204	1310	0	0	0	0	155	3	115
Future Volume (veh/h)	0	836	794	204	1310	0	0	0	0	155	3	115
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1900	1863	1863
Adj Flow Rate, veh/h	0	853	0	208	1337	0				158	3	16
Adj No. of Lanes	0	2	1	1	2	0				0	1	1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98				0.98	0.98	0.98
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1006	450	651	2578	0				205	4	186
Arrive On Green	0.00	0.28	0.00	0.37	0.73	0.00				0.12	0.12	0.12
Sat Flow, veh/h	0	3632	1583	1774	3632	0				1743	33	1583
Grp Volume(v), veh/h	0	853	0	208	1337	0				161	0	16
Grp Sat Flow(s),veh/h/ln	0	1770	1583	1774	1770	0				1776	0	1583
Q Serve(g_s), s	0.0	14.8	0.0	5.5	10.7	0.0				5.7	0.0	0.6
Cycle Q Clear(g_c), s	0.0	14.8	0.0	5.5	10.7	0.0				5.7	0.0	0.6
Prop In Lane	0.00		1.00	1.00		0.00				0.98		1.00
Lane Grp Cap(c), veh/h	0	1006	450	651	2578	0				209	0	186
V/C Ratio(X)	0.00	0.85	0.00	0.32	0.52	0.00				0.77	0.00	0.09
Avail Cap(c_a), veh/h	0	1143	512	651	2578	0				601	0	536
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(l)	0.00	0.70	0.00	0.71	0.71	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	21.9	0.0	14.7	3.9	0.0				27.8	0.0	25.6
Incr Delay (d2), s/veh	0.0	6.4	0.0	0.1	0.5	0.0				2.3	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	8.1	0.0	2.7	5.2	0.0				2.9	0.0	0.3
LnGrp Delay(d),s/veh	0.0	28.3	0.0	14.8	4.4	0.0				30.1	0.0	25.6
LnGrp LOS		C		B	A					C		C
Approach Vol, veh/h		853			1545						177	
Approach Delay, s/veh		28.3			5.8						29.7	
Approach LOS		C			A						C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	28.9	23.5		12.7		52.3						
Change Period (Y+Rc), s	*5	*5		*5		*5						
Max Green Setting (Gmax), s	*8	*21		*22		*33						
Max Q Clear Time (g_c+1), s	7.5	16.8		7.7		12.7						
Green Ext Time (p_c), s	0.4	1.7		0.3		7.2						
Intersection Summary												
HCM 2010 Ctrl Delay				14.9								
HCM 2010 LOS				B								
Notes												
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.												

Enloe Medical Center

























# **Appendix C**

## **Cumulative No Project LOS Calculations**



# HCM Signalized Intersection Capacity Analysis 2: Harvest Park Ct & East Ave

Cumulative Conditions  
AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	1070	10	20	950	70	20	0	30	30	0	5
Future Volume (vph)	20	1070	10	20	950	70	20	0	30	30	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	5.3	5.3	4.0	5.3	5.3	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.85		1.00	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1583		1770	1583	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00		1.00	1.00	
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1863	1583		1863	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)	22	1163	11	22	1033	76	22	0	33	33	0	5
RTOR Reduction (vph)	0	0	4	0	0	20	0	30	0	0	5	0
Lane Group Flow (vph)	22	1163	7	22	1033	56	22	3	0	33	0	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8				4
Permitted Phases			2			6	8				4	
Actuated Green, G (s)	1.0	32.3	32.3	1.0	31.8	31.8	4.0	4.0		4.0	4.0	
Effective Green, g (s)	1.0	32.3	32.3	1.0	31.8	31.8	4.0	4.0		4.0	4.0	
Actuated g/C Ratio	0.02	0.64	0.64	0.02	0.63	0.63	0.08	0.08		0.08	0.08	
Clearance Time (s)	4.5	5.3	5.3	4.0	5.3	5.3	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	1.0	4.0	4.0	1.0	4.0	4.0	2.5	2.5		2.5	2.5	
Lane Grp Cap (vph)	34	2259	1010	34	2224	994	147	125		147	125	
v/s Ratio Prot	c0.01	c0.33		0.01	0.29			0.00			0.00	
v/s Ratio Perm			0.00			0.04	0.01			c0.02		
v/c Ratio	0.65	0.51	0.01	0.65	0.46	0.06	0.15	0.02		0.22	0.00	
Uniform Delay, d1	24.6	4.9	3.3	24.6	4.9	3.6	21.7	21.5		21.8	21.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	27.5	0.3	0.0	27.5	0.2	0.0	0.3	0.0		0.6	0.0	
Delay (s)	52.1	5.2	3.3	52.1	5.1	3.7	22.1	21.5		22.4	21.5	
Level of Service	D	A	A	D	A	A	C	C		C	C	
Approach Delay (s)		6.0			6.0			21.7			22.3	
Approach LOS		A			A			C			C	

## Intersection Summary

HCM 2000 Control Delay	6.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	50.6	Sum of lost time (s)	13.8
Intersection Capacity Utilization	45.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

# HCM 2010 Signalized Intersection Summary 5: Esplanade & East Ave




















Cumulative Conditions  
AM Peak

	↖	→	↗	↖	←	↖	↗	↑	↖	↗	↓	↖
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↖	↖↖	↖	↖↖	↖↖	↖	↖↖	↖↖	↖	↖↖	↖↖	↖
Traffic Volume (veh/h)	210	880	190	300	780	280	200	500	230	350	820	220
Future Volume (veh/h)	210	880	190	300	780	280	200	500	230	350	820	220
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	228	957	173	326	848	236	217	543	221	380	891	172
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	2	1
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	313	1143	648	450	1284	789	296	891	606	466	1066	621
Arrive On Green	0.09	0.32	0.32	0.13	0.36	0.36	0.09	0.25	0.25	0.14	0.30	0.30
Sat Flow, veh/h	3442	3539	1583	3442	3539	1583	3442	3539	1583	3442	3539	1583
Grp Volume(v), veh/h	228	957	173	326	848	236	217	543	221	380	891	172
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1770	1583	1721	1770	1583	1721	1770	1583
Q Serve(g_s), s	6.5	25.4	7.3	9.2	20.3	8.9	6.2	13.7	10.1	10.9	23.8	7.5
Cycle Q Clear(g_c), s	6.5	25.4	7.3	9.2	20.3	8.9	6.2	13.7	10.1	10.9	23.8	7.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	313	1143	648	450	1284	789	296	891	606	466	1066	621
V/C Ratio(X)	0.73	0.84	0.27	0.72	0.66	0.30	0.73	0.61	0.36	0.82	0.84	0.28
Avail Cap(c_a), veh/h	850	1224	684	850	1284	789	850	1014	661	850	1066	621
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.8	31.8	19.8	42.2	27.0	15.0	45.1	33.5	22.4	42.5	33.0	21.0
Incr Delay (d2), s/veh	3.3	5.3	0.3	4.7	1.4	0.3	2.6	1.1	0.5	2.7	6.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	13.2	3.3	4.7	10.1	3.9	3.1	6.9	4.5	5.3	12.5	3.3
LnGrp Delay(d),s/veh	48.1	37.1	20.2	46.9	28.5	15.3	47.7	34.6	22.9	45.2	39.2	21.3
LnGrp LOS	D	D	C	D	C	B	D	C	C	D	D	C
Approach Vol, veh/h	1358				1410				981			
Approach Delay, s/veh	36.8				30.5				34.9			
Approach LOS	D				C				C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.8	37.5	12.3	34.6	12.8	41.5	17.3	29.6				
Change Period (Y+Rc), s	3.6	4.8	3.6	4.1	3.6	4.8	3.6	4.1				
Max Green Setting (Gmax), s	25.0	35.0	25.0	30.0	25.0	35.0	25.0	29.0				
Max Q Clear Time (g_c+I1), s	11.2	27.4	8.2	25.8	8.5	22.3	12.9	15.7				
Green Ext Time (p_c), s	2.0	5.3	0.5	3.7	0.7	11.1	0.8	9.8				
Intersection Summary												
HCM 2010 Ctrl Delay	35.2											
HCM 2010 LOS	D											



# HCM 2010 Signalized Intersection Summary 7: SR 99 NB Ramps & East Ave

Cumulative Conditions  
AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	750	0	0	860	180	850	5	120	0	0	0
Future Volume (veh/h)	90	750	0	0	860	180	850	5	120	0	0	0
Number	5	2	12	1	6	16	3	8	18			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1863	1863	1863	1863			
Adj Flow Rate, veh/h	98	815	0	0	935	118	928	0	44			
Adj No. of Lanes	1	2	0	0	2	1	2	0	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	322	1963	0	0	1049	469	1034	0	461			
Arrive On Green	0.36	1.00	0.00	0.00	0.30	0.30	0.29	0.00	0.29			
Sat Flow, veh/h	1774	3632	0	0	3632	1583	3548	0	1583			
Grp Volume(v), veh/h	98	815	0	0	935	118	928	0	44			
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1770	1583	1774	0	1583			
Q Serve(g_s), s	2.6	0.0	0.0	0.0	16.4	3.7	16.3	0.0	1.3			
Cycle Q Clear(g_c), s	2.6	0.0	0.0	0.0	16.4	3.7	16.3	0.0	1.3			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	322	1963	0	0	1049	469	1034	0	461			
V/C Ratio(X)	0.30	0.42	0.00	0.00	0.89	0.25	0.90	0.00	0.10			
Avail Cap(c_a), veh/h	322	1963	0	0	1089	487	1365	0	609			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.92	0.92	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	17.8	0.0	0.0	0.0	21.9	17.4	22.1	0.0	16.8			
Incr Delay (d2), s/veh	0.2	0.6	0.0	0.0	11.4	1.3	5.6	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	1.2	0.2	0.0	0.0	9.6	1.8	8.8	0.0	0.6			
LnGrp Delay(d),s/veh	17.9	0.6	0.0	0.0	33.3	18.7	27.7	0.0	16.8			
LnGrp LOS	B	A			C	B	C		B			
Approach Vol, veh/h	913		1053				972					
Approach Delay, s/veh	2.5		31.7				27.2					
Approach LOS	A		C				C					
Time	1	2	3	4	5	6	7	8				
Assigned Phs	2		5				8					
Phs Duration (G+Y+Rc), s	41.1		16.8				23.9					
Change Period (Y+Rc), s	* 5		* 5				5.0					
Max Green Setting (Gmax), s	* 30		* 5				25.0					
Max Q Clear Time (g_c+I1), s	2.0		4.6				18.3					
Green Ext Time (p_c), s	4.1		0.2				0.6					
Intersection Summary												
HCM 2010 Ctrl Delay	21.1											
HCM 2010 LOS	C											
Notes												
User approved volume balancing among the lanes for turning movement.												

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# HCM Signalized Intersection Capacity Analysis 2: Harvest Park Ct & East Ave

Cumulative Conditions  
PM Peak

	EB	EB	EB	WB	WB	WB	WB	WB	WB	WB	WB	WB
	↖	→	↗	↖	→	↗	↖	→	↗	↖	→	↗
Lane Configurations	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖
Traffic Volume (vph)	10	1050	10	30	1300	30	5	0	20	60	0	20
Future Volume (vph)	10	1050	10	30	1300	30	5	0	20	60	0	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	5.3	5.3	4.0	5.3	5.3	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.85		1.00	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1583		1770	1583	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.74	1.00		0.74	1.00	
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1386	1583		1386	1583	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	10	1071	10	31	1327	31	5	0	20	61	0	20
RTOR Reduction (vph)	0	0	4	0	0	12	0	16	0	0	16	0
Lane Group Flow (vph)	10	1071	6	31	1327	19	5	4	0	61	4	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8			4		
Actuated Green, G (s)	1.1	45.1	45.1	2.3	45.8	45.8	13.4	13.4		13.4	13.4	
Effective Green, g (s)	1.1	45.1	45.1	2.3	45.8	45.8	13.4	13.4		13.4	13.4	
Actuated g/C Ratio	0.01	0.61	0.61	0.03	0.62	0.62	0.18	0.18		0.18	0.18	
Clearance Time (s)	4.5	5.3	5.3	4.0	5.3	5.3	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	1.0	4.0	4.0	1.0	4.0	4.0	2.5	2.5		2.5	2.5	
Lane Grp Cap (vph)	26	2153	963	54	2187	978	250	286		250	286	
v/s Ratio Prot	0.01	0.30		c0.02	c0.37			0.00			0.00	
v/s Ratio Perm			0.00			0.01	0.00			c0.04		
v/c Ratio	0.38	0.50	0.01	0.57	0.61	0.02	0.02	0.01		0.24	0.01	
Uniform Delay, d1	36.2	8.1	5.7	35.4	8.6	5.5	25.0	24.9		26.0	24.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.4	0.2	0.0	8.8	0.6	0.0	0.0	0.0		0.4	0.0	
Delay (s)	39.6	8.4	5.7	44.3	9.2	5.5	25.0	24.9		26.4	24.9	
Level of Service	D	A	A	D	A	A	C	C		C	C	
Approach Delay (s)		8.6			9.9		24.9			26.0		
Approach LOS		A			A		C			C		

## Intersection Summary

























HCM 2000 Control Delay	10.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	74.1	Sum of lost time (s)	13.8
Intersection Capacity Utilization	53.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

# HCM 2010 Signalized Intersection Summary

## 5: Esplanade & East Ave

Cumulative Conditions  
PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	340	1050	180	270	1110	340	320	790	320	390	550	220
Future Volume (veh/h)	340	1050	180	270	1110	340	320	790	320	390	550	220
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	351	1082	132	278	1144	325	330	814	302	402	567	198
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	436	1195	722	387	1144	734	408	924	591	482	1000	648
Arrive On Green	0.13	0.34	0.34	0.11	0.32	0.32	0.12	0.26	0.26	0.14	0.28	0.28
Sat Flow, veh/h	3442	3539	1583	3442	3539	1583	3442	3539	1583	3442	3539	1583
Grp Volume(V), veh/h	351	1082	132	278	1144	325	330	814	302	402	567	198
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1770	1583	1721	1770	1583	1721	1770	1583
Q Serve(g_s), s	10.7	31.6	5.4	8.4	35.0	15.0	10.1	23.9	16.0	12.3	14.8	9.1
Cycle Q Clear(g_c), s	10.7	31.6	5.4	8.4	35.0	15.0	10.1	23.9	16.0	12.3	14.8	9.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	436	1195	722	387	1144	734	408	924	591	482	1000	648
V/C Ratio(X)	0.80	0.91	0.18	0.72	1.00	0.44	0.81	0.88	0.51	0.83	0.57	0.31
Avail Cap(c_a), veh/h	795	1195	722	795	1144	734	795	948	602	795	1000	648
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.0	34.2	17.5	46.4	36.6	19.6	46.5	38.4	26.2	45.3	33.2	21.6
Incr Delay (d2), s/veh	3.5	10.1	0.2	5.3	26.5	0.6	2.9	9.8	1.0	3.1	0.9	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	17.0	2.4	4.3	21.2	6.6	5.0	12.9	7.1	6.1	7.4	4.0
LnGrp Delay(d),s/veh	49.5	44.3	17.6	51.7	63.2	20.2	49.4	48.1	27.2	48.4	34.1	22.0
LnGrp LOS	D	D	B	D	E	C	D	D	C	D	C	C
Approach Vol, veh/h	1565				1747				1446			
Approach Delay, s/veh	43.2				53.3				44.1			
Approach LOS	D				D				D			
Time	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.8	41.4	16.4	34.7	17.3	39.8	18.8	32.4				
Change Period (Y+Rc), s	3.6	4.8	3.6	4.1	3.6	4.8	3.6	4.1				
Max Green Setting (Gmax), s	25.0	35.0	25.0	30.0	25.0	35.0	25.0	29.0				
Max Q Clear Time (g_c+I1), s	10.4	33.6	12.1	16.8	12.7	37.0	14.3	25.9				
Green Ext Time (p_c), s	1.7	1.4	0.7	10.4	1.0	0.0	0.8	2.4				
Intersection Summary												
HCM 2010 Ctrl Delay	45.2											
HCM 2010 LOS	D											

# HCM 2010 Signalized Intersection Summary 7: SR 99 NB Ramps & East Ave

Cumulative Conditions  
PM Peak

	↖	→	↗	↖	←	↖	↖	↑	↖	↗	↓	↖
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SH	SEB	SEB
Lane Configurations	↖	↖↖			↖↖	↖	↖	↖	↖			
Traffic Volume (veh/h)	170	1010	0	0	950	250	940	5	290	0	0	0
Future Volume (veh/h)	170	1010	0	0	950	250	940	5	290	0	0	0
Number	5	2	12	1	6	16	3	8	18			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1863	1863	1863	1863			
Adj Flow Rate, veh/h	173	1031	0	0	969	174	963	0	216			
Adj No. of Lanes	1	2	0	0	2	1	2	0	1			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	294	1927	0	0	1069	478	1071	0	478			
Arrive On Green	0.33	1.00	0.00	0.00	0.30	0.30	0.30	0.00	0.30			
Sat Flow, veh/h	1774	3632	0	0	3632	1583	3548	0	1583			
Grp Volume(v), veh/h	173	1031	0	0	969	174	963	0	216			
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1770	1583	1774	0	1583			
Q Serve(g_s), s	5.3	0.0	0.0	0.0	17.1	5.6	16.9	0.0	7.2			
Cycle Q Clear(g_c), s	5.3	0.0	0.0	0.0	17.1	5.6	16.9	0.0	7.2			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	294	1927	0	0	1069	478	1071	0	478			
V/C Ratio(X)	0.59	0.54	0.00	0.00	0.91	0.36	0.90	0.00	0.45			
Avail Cap(c_a), veh/h	294	1927	0	0	1089	487	1365	0	609			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.79	0.79	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	19.9	0.0	0.0	0.0	21.8	17.8	21.7	0.0	18.3			
Incr Delay (d2), s/veh	1.7	0.8	0.0	0.0	12.6	2.1	6.1	0.0	0.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	2.7	0.2	0.0	0.0	10.2	2.7	9.1	0.0	3.2			
LnGrp Delay(d),s/veh	21.6	0.8	0.0	0.0	34.4	19.9	27.8	0.0	18.6			
LnGrp LOS	C	A			C	B	C		B			
Approach Vol, veh/h	1204				1143				1179			
Approach Delay, s/veh	3.8				32.2				26.1			
Approach LOS	A				C				C			
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2				5		6		8			
Phs Duration (G+Y+Rc), s	40.4				15.8		24.6		24.6			
Change Period (Y+Rc), s	* 5				* 5		* 5		5.0			
Max Green Setting (Gmax), s	* 30				* 5		* 20		25.0			
Max Q Clear Time (g_c+I1), s	2.0				7.3		19.1		18.9			
Green Ext Time (p_c), s	5.4				0.0		0.5		0.7			
Intersection Summary												
HCM 2010 Ctrl Delay	20.5											
HCM 2010 LOS	C											
Notes												
User approved volume balancing among the lanes for turning movement.												

Enloe Medical Center



# HCM 2010 Signalized Intersection Summary

## 1: Holly Ave/Cussick Ave & East Ave

Cumulative Plus Project Conditions  
AM Peak

	↖	→	↗	↖	←	↖	↖	↑	↗	↘	↓	↙
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NET	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑↑	↗	↖	↑↑		↖	↑		↖	↑	
Traffic Volume (veh/h)	120	884	120	124	654	74	60	100	114	104	140	140
Future Volume (veh/h)	120	884	120	124	654	74	60	100	114	104	140	140
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	130	961	85	135	711	71	65	109	82	113	152	116
Adj No. of Lanes	1	2	1	1	2	0	1	1	0	1	1	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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	179	1368	612	181	1165	116	135	181	136	172	200	153
Arrive On Green	0.10	0.39	0.39	0.10	0.36	0.36	0.08	0.18	0.18	0.10	0.20	0.20
Sat Flow, veh/h	1774	3539	1583	1774	3251	324	1774	988	743	1774	982	749
Grp Volume(v), veh/h	130	961	85	135	387	395	65	0	191	113	0	268
Grp Sat Flow(s), veh/h/ln	1774	1770	1583	1774	1770	1805	1774	0	1732	1774	0	1731
Q Serve(g_s), s	4.4	14.2	2.2	4.6	11.1	11.1	2.2	0.0	6.3	3.8	0.0	9.0
Cycle Q Clear(g_c), s	4.4	14.2	2.2	4.6	11.1	11.1	2.2	0.0	6.3	3.8	0.0	9.0
Prop In Lane	1.00		1.00	1.00		0.18	1.00		0.43	1.00		0.43
Lane Grp Cap(c), veh/h	179	1368	612	181	634	647	135	0	318	172	0	353
V/C Ratio(X)	0.73	0.70	0.14	0.75	0.61	0.61	0.48	0.00	0.60	0.66	0.00	0.76
Avail Cap(c_a), veh/h	430	2287	1023	430	634	647	487	0	699	430	0	699
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.0	16.0	12.3	27.0	16.3	16.3	27.4	0.0	23.2	27.0	0.0	23.2
Incr Delay (d2), s/veh	2.1	0.2	0.0	2.3	1.2	1.2	1.0	0.0	0.7	1.6	0.0	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	6.9	1.0	2.4	5.6	5.7	1.1	0.0	3.0	1.9	0.0	4.4
LnGrp Delay(d),s/veh	29.1	16.2	12.3	29.3	17.5	17.5	28.4	0.0	23.9	28.6	0.0	24.5
LnGrp LOS	C	B	B	C	B	B	C		C	C		C
Approach Vol, veh/h	1176				917				256		381	
Approach Delay, s/veh	17.4				19.3				25.0		25.7	
Approach LOS	B				B				C		C	

Time	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.3	28.7	7.7	16.1	11.1	27.0	9.0	14.9
Change Period (Y+Rc), s	3.0	4.8	3.0	3.5	4.8	*4.8	3.0	3.5
Max Green Setting (Gmax), s	15.0	40.0	17.0	25.0	15.0	*20	15.0	25.0
Max Q Clear Time (g_c+I1), s	6.6	16.2	4.2	11.0	6.4	13.1	5.8	8.3
Green Ext Time (p_c), s	0.1	7.8	0.0	1.6	0.1	4.4	0.1	1.7

Intersection Summary												
HCM 2010 Ctrl Delay	19.9											
HCM 2010 LOS	B											

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























# HCM Signalized Intersection Capacity Analysis 2: Harvest Park Ct & East Ave

Cumulative Plus Project Conditions  
AM Peak

Movement	SBF
Lane Configurations	
Traffic Volume (vph)	6
Future Volume (vph)	6
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	7
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

# HCM 2010 Signalized Intersection Summary 4: Raley's Dwy & East Ave

Cumulative Plus Project Conditions  
AM Peak

														
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations														
Traffic Volume (veh/h)	21	1184	22	110	1236	50	29	5	60	80	10	26		
Future Volume (veh/h)	21	1184	22	110	1236	50	29	5	60	80	10	26		
Number	5	2	12	1	6	16	3	8	18	7	4	14		
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863		
Adj Flow Rate, veh/h	23	1287	13	120	1343	34	32	5	3	87	11	1		
Adj No. of Lanes	1	2	1	1	2	1	0	1	1	0	1	1		
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		
Percent Heavy Veh. %	2	2	2	2	2	2	2	2	2	2	2	2		
Cap, veh/h	62	1716	768	151	1894	847	94	9	456	95	7	456		
Arrive On Green	0.03	0.48	0.48	0.09	0.54	0.54	0.29	0.29	0.29	0.29	0.29	0.29		
Sat Flow, veh/h	1774	3539	1583	1774	3539	1583	25	30	1583	26	24	1583		
Grp Volume(V), veh/h	23	1287	13	120	1343	34	37	0	3	98	0	1		
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	55	0	1583	50	0	1583		
Q Serve(g_s), s	1.0	22.8	0.3	5.1	22.0	0.8	0.5	0.0	0.1	0.5	0.0	0.0		
Cycle Q Clear(g_c), s	1.0	22.8	0.3	5.1	22.0	0.8	22.3	0.0	0.1	22.3	0.0	0.0		
Prop In Lane	1.00		1.00	1.00		1.00	0.86		1.00	0.89		1.00		
Lane Grp Cap(c), veh/h	62	1716	768	151	1894	847	102	0	456	102	0	456		
V/C Ratio(X)	0.37	0.75	0.02	0.79	0.71	0.04	0.36	0.00	0.01	0.96	0.00	0.00		
Avail Cap(c_a), veh/h	343	1826	817	343	1894	847	189	0	551	189	0	551		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00		
Uniform Delay (d), s/veh	36.6	16.2	10.4	34.8	13.5	8.6	34.2	0.0	19.7	37.4	0.0	19.7		
Incr Delay (d2), s/veh	1.4	1.8	0.0	3.5	1.4	0.0	0.8	0.0	0.0	22.0	0.0	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.5	11.5	0.1	2.7	11.0	0.3	0.8	0.0	0.0	2.7	0.0	0.0		
LnGrp Delay(d),s/veh	38.0	18.0	10.4	38.3	14.9	8.6	35.0	0.0	19.7	59.4	0.0	19.7		
LnGrp LOS	D	B	B	D	B	A	D		B	E		B		
Approach Vol, veh/h	1323				1497				40		99			
Approach Delay, s/veh	18.3				16.6				33.9		59.0			
Approach LOS	B				B				C		E			
Timer	1	2	3	4	5	6	7	8						
Assigned Phs	1	2		4	5	6		8						
Phs Duration (G+Y+Rc), s	9.6	42.1		26.3	5.7	46.0		26.3						
Change Period (Y+Rc), s	3.0	4.5		3.5	3.0	4.5		3.5						
Max Green Setting (Gmax), s	15.0	40.0		27.0	15.0	40.0		27.0						
Max Q Clear Time (g_c+I), s	7.1	24.8		24.3	3.0	24.0		24.3						
Green Ext Time (p_c), s	0.1	12.8		0.1	0.0	15.1		0.1						
Intersection Summary														
HCM 2010 Ctrl Delay	19.0													
HCM 2010 LOS	B													



# HCM 2010 Signalized Intersection Summary 6: SR 99 SB Ramps & East Ave

Cumulative Plus Project Conditions  
AM Peak

	↖	→	↗	↖	←	↖	↖	↑	↗	↘	↓	↙
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SEB	SEB	SBR
Lane Configurations		↑↑	↑	↑	↑↑						↑	↑
Traffic Volume (veh/h)	0	616	1090	340	1469	0	0	0	0	240	5	208
Future Volume (veh/h)	0	616	1090	340	1469	0	0	0	0	240	5	208
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1900	1863	1863
Adj Flow Rate, veh/h	0	670	0	370	1597	0				261	5	125
Adj No. of Lanes	0	2	1	1	2	0				0	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	845	378	617	2349	0				318	6	289
Arrive On Green	0.00	0.24	0.00	0.35	0.66	0.00				0.18	0.18	0.18
Sat Flow, veh/h	0	3632	1583	1774	3632	0				1742	33	1583
Grp Volume(v), veh/h	0	670	0	370	1597	0				266	0	125
Grp Sat Flow(s), veh/h/ln	0	1770	1583	1774	1770	0				1776	0	1583
Q Serve(g_s), s	0.0	11.6	0.0	11.2	18.0	0.0				9.4	0.0	4.6
Cycle Q Clear(g_c), s	0.0	11.6	0.0	11.2	18.0	0.0				9.4	0.0	4.6
Prop In Lane	0.00		1.00	1.00		0.00				0.98		1.00
Lane Grp Cap(c), veh/h	0	845	378	617	2349	0				324	0	289
V/C Ratio(X)	0.00	0.79	0.00	0.60	0.68	0.00				0.82	0.00	0.43
Avail Cap(c_a), veh/h	0	1143	512	617	2349	0				601	0	536
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.52	0.00	0.55	0.55	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	23.2	0.0	17.5	6.7	0.0				25.5	0.0	23.6
Incr Delay (d2), s/veh	0.0	4.1	0.0	0.6	0.9	0.0				2.0	0.0	0.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	6.1	0.0	5.6	8.9	0.0				4.8	0.0	2.0
LnGrp Delay(d),s/veh	0.0	27.3	0.0	18.1	7.6	0.0				27.5	0.0	24.0
LnGrp LOS		C		B	A					C		C
Approach Vol, veh/h		670			1967						391	
Approach Delay, s/veh		27.3			9.6						26.4	
Approach LOS		C			A						C	
Time	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	27.6	20.5		16.9		48.1						
Change Period (Y+Rc), s	*5	*5		*5		*5						
Max Green Setting (Gmax), s	*8	*21		*22		*33						
Max Q Clear Time (g_c+I1), s	13.2	13.6		11.4		20.0						
Green Ext Time (p_c), s	0.0	2.0		0.5		7.2						
Intersection Summary												
HCM 2010 Ctrl Delay				15.7								
HCM 2010 LOS				B								
Notes												
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.												

Enloe Medical Center

# HCM 2010 Signalized Intersection Summary

## 1: Holly Ave/Cussick Ave & East Ave

Cumulative Plus Project Conditions  
PM Peak

	↖	→	↘	↙	←	↖	↙	↑	↘	↘	↓	↙
Movement	EBL	EBT	EBP	WBL	WBT	WBP	NBL	NBT	NBP	SBL	SBT	SBR
Lane Configurations	↙	↕	↘	↙	↕	↘	↙	↕	↘	↙	↕	↘
Traffic Volume (veh/h)	100	836	60	105	1135	134	130	130	86	85	130	120
Future Volume (veh/h)	100	836	60	105	1135	134	130	130	86	85	130	120
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	108	899	21	113	1220	135	140	140	69	91	140	97
Adj No. of Lanes	1	2	1	1	2	0	1	1	0	1	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	168	1370	613	171	1157	128	181	234	116	158	191	132
Arrive On Green	0.09	0.39	0.39	0.10	0.36	0.36	0.10	0.20	0.20	0.09	0.19	0.19
Sat Flow, veh/h	1774	3539	1583	1774	3215	355	1774	1179	581	1774	1026	711
Grp Volume(v), veh/h	108	899	21	113	670	685	140	0	209	91	0	237
Grp Sat Flow(s), veh/h/ln	1774	1770	1583	1774	1770	1800	1774	0	1760	1774	0	1737
Q Serve(g_s), s	3.7	13.0	0.5	3.8	22.5	22.5	4.8	0.0	6.7	3.1	0.0	8.0
Cycle Q Clear(g_c), s	3.7	13.0	0.5	3.8	22.5	22.5	4.8	0.0	6.7	3.1	0.0	8.0
Prop In Lane	1.00		1.00	1.00		0.20	1.00		0.33	1.00		0.41
Lane Grp Cap(c), veh/h	168	1370	613	171	637	648	181	0	350	158	0	323
V/C Ratio(X)	0.64	0.66	0.03	0.66	1.05	1.06	0.77	0.00	0.60	0.58	0.00	0.73
Avail Cap(c_a), veh/h	426	2265	1013	426	637	648	482	0	704	426	0	695
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.3	15.7	11.9	27.3	20.0	20.0	27.4	0.0	22.8	27.3	0.0	24.0
Incr Delay (d2), s/veh	1.5	0.2	0.0	1.6	50.1	51.6	2.6	0.0	0.6	1.2	0.0	1.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	6.4	0.2	2.0	19.7	20.3	2.5	0.0	3.3	1.6	0.0	3.9
LnGrp Delay(d),s/veh	28.8	15.9	11.9	28.9	70.1	71.6	30.0	0.0	23.4	28.6	0.0	25.2
LnGrp LOS	C	B	B	C	F	F	C		C	C		C
Approach Vol, veh/h	1028				1468				349		328	
Approach Delay, s/veh	17.2				67.6				26.0		26.2	
Approach LOS	B				E				C		C	

Time	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.0	29.0	9.4	15.1	10.7	27.3	8.6	15.9
Change Period (Y+Rc), s	3.0	4.8	3.0	3.5	4.8	*4.8	3.0	3.5
Max Green Setting (Gmax), s	15.0	40.0	17.0	25.0	15.0	*20	15.0	25.0
Max Q Clear Time (g_c+I), s	5.8	15.0	6.8	10.0	5.7	24.5	5.1	8.7
Green Ext Time (p_c), s	0.1	9.2	0.1	1.6	0.1	0.0	0.1	1.6

### Intersection Summary

HCM 2010 Ctrl Delay 42.4

HCM 2010 LOS D

### Notes

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

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# HCM Signalized Intersection Capacity Analysis 2: Harvest Park Ct & East Ave

Cumulative Plus Project Conditions  
PM Peak

Movement	SBP
Lane Configurations	
Traffic Volume (vph)	24
Future Volume (vph)	24
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.98
Adj. Flow (vph)	24
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

# HCM Signalized Intersection Capacity Analysis 4: Raley's Dwy & East Ave

Cumulative Plus Project Conditions  
PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NET	NBR	SBL	SBT	SBR
												
Lane Configurations												
Traffic Volume (vph)	56	1306	69	180	1294	130	103	40	180	220	30	52
Future Volume (vph)	56	1306	69	180	1294	130	103	40	180	220	30	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.5	4.5	3.0	4.5	4.5		3.5	3.5		3.5	3.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.97	1.00		0.96	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583		1798	1583		1784	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.51	1.00		0.59	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583		944	1583		1107	1583
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	58	1346	71	186	1334	134	106	41	186	227	31	54
RTOR Reduction (vph)	0	0	22	0	0	63	0	0	136	0	0	39
Lane Group Flow (vph)	58	1346	49	186	1334	71	0	147	50	0	258	15
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8		8	4		4
Actuated Green, G (s)	6.3	38.7	38.7	12.3	44.7	44.7		22.9	22.9		22.9	22.9
Effective Green, g (s)	6.3	38.7	38.7	12.3	44.7	44.7		22.9	22.9		22.9	22.9
Actuated g/C Ratio	0.07	0.46	0.46	0.14	0.53	0.53		0.27	0.27		0.27	0.27
Clearance Time (s)	3.0	4.5	4.5	3.0	4.5	4.5		3.5	3.5		3.5	3.5
Vehicle Extension (s)	2.0	4.0	4.0	2.0	4.0	4.0		2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	131	1613	721	256	1863	833		254	426		298	426
v/s Ratio Prot	0.03	c0.38		c0.11	0.38							
v/s Ratio Perm			0.03			0.04		0.16	0.03		c0.23	0.01
v/c Ratio	0.44	0.83	0.07	0.73	0.72	0.08		0.58	0.12		0.87	0.04
Uniform Delay, d1	37.6	20.3	13.0	34.7	15.3	10.0		26.8	23.4		29.5	22.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	0.9	4.1	0.1	8.4	1.4	0.1		2.0	0.0		21.5	0.0
Delay (s)	38.5	24.4	13.0	43.1	16.7	10.0		28.8	23.4		51.0	22.9
Level of Service	D	C	B	D	B	B		C	C		D	C
Approach Delay (s)		24.4			19.1			25.8			46.2	
Approach LOS		C			B			C			D	

## Intersection Summary

HCM 2000 Control Delay	24.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	84.9	Sum of lost time (s)	11.0
Intersection Capacity Utilization	76.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM 2010 Signalized Intersection Summary  
6: SR 99 SB Ramps & East Ave

Cumulative Plus Project Conditions  
PM Peak

	↖	→	↘	↙	←	↖	↙	↑	↗	↘	↓	↙
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SEB	SEB	SEB
Lane Configurations		↑↑	↑	↑	↑↑						↓	↑
Traffic Volume (veh/h)	0	1019	1094	290	1641	0	0	0	0	220	5	162
Future Volume (veh/h)	0	1019	1094	290	1641	0	0	0	0	220	5	162
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1900	1863	1863
Adj Flow Rate, veh/h	0	1040	0	296	1674	0				224	5	68
Adj No. of Lanes	0	2	1	1	2	0				0	1	1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98				0.98	0.98	0.98
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1130	506	513	2426	0				279	6	254
Arrive On Green	0.00	0.32	0.00	0.29	0.69	0.00				0.16	0.16	0.16
Sat Flow, veh/h	0	3632	1583	1774	3632	0				1737	39	1583
Grp Volume(v), veh/h	0	1040	0	296	1674	0				229	0	68
Grp Sat Flow(s), veh/h/ln	0	1770	1583	1774	1770	0				1776	0	1583
Q Serve(g_s), s	0.0	18.4	0.0	9.3	18.3	0.0				8.1	0.0	2.4
Cycle Q Clear(g_c), s	0.0	18.4	0.0	9.3	18.3	0.0				8.1	0.0	2.4
Prop In Lane	0.00		1.00	1.00		0.00				0.98		1.00
Lane Grp Cap(c), veh/h	0	1130	506	513	2426	0				285	0	254
V/O Ratio(X)	0.00	0.92	0.00	0.58	0.69	0.00				0.80	0.00	0.27
Avail Cap(c_a), veh/h	0	1143	512	513	2426	0				601	0	536
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.27	0.00	0.44	0.44	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	21.3	0.0	19.7	6.1	0.0				26.3	0.0	23.9
Incr Delay (d2), s/veh	0.0	4.4	0.0	0.5	0.7	0.0				2.0	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	9.6	0.0	4.6	9.1	0.0				4.1	0.0	1.1
LnGrp Delay(d),s/veh	0.0	25.7	0.0	20.2	6.8	0.0				28.3	0.0	24.1
LnGrp LOS		C		C	A					C		C
Approach Vol, veh/h		1040			1970						297	
Approach Delay, s/veh		25.7			8.8						27.4	
Approach LOS		C			A						C	

Time	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	23.8	25.8		15.4		49.6		
Change Period (Y+Rc), s	* 5	* 5		* 5		* 5		
Max Green Setting (Gmax), s	* 8	* 21		* 22		* 33		
Max Q Clear Time (g_c+I1), s	11.3	20.4		10.1		20.3		
Green Ext Time (p_c), s	0.0	0.3		0.4		7.4		

Intersection Summary	
HCM 2010 Ctrl Delay	15.8
HCM 2010 LOS	B

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

# KAP

KAP Architecture & Planning  
10000 Wilshire Blvd., Suite 1000  
Beverly Hills, CA 90210  
Tel: 310.277.1100 | Fax: 310.277.1101  
www.kaparch.com



Enloe Medical Center  
Medical Offices Building  
250 W. East Avenue  
Chico, CA 95926

Project Name  
New OSHPD 3  
Medical Office Building  
Architectural  
DESIGN REVIEW  
Architect of Record



Drawn By: J. J. [Signature]  
Checked By: [Signature]

Revisions  
1. [Signature]  
2. [Signature]  
3. [Signature]  
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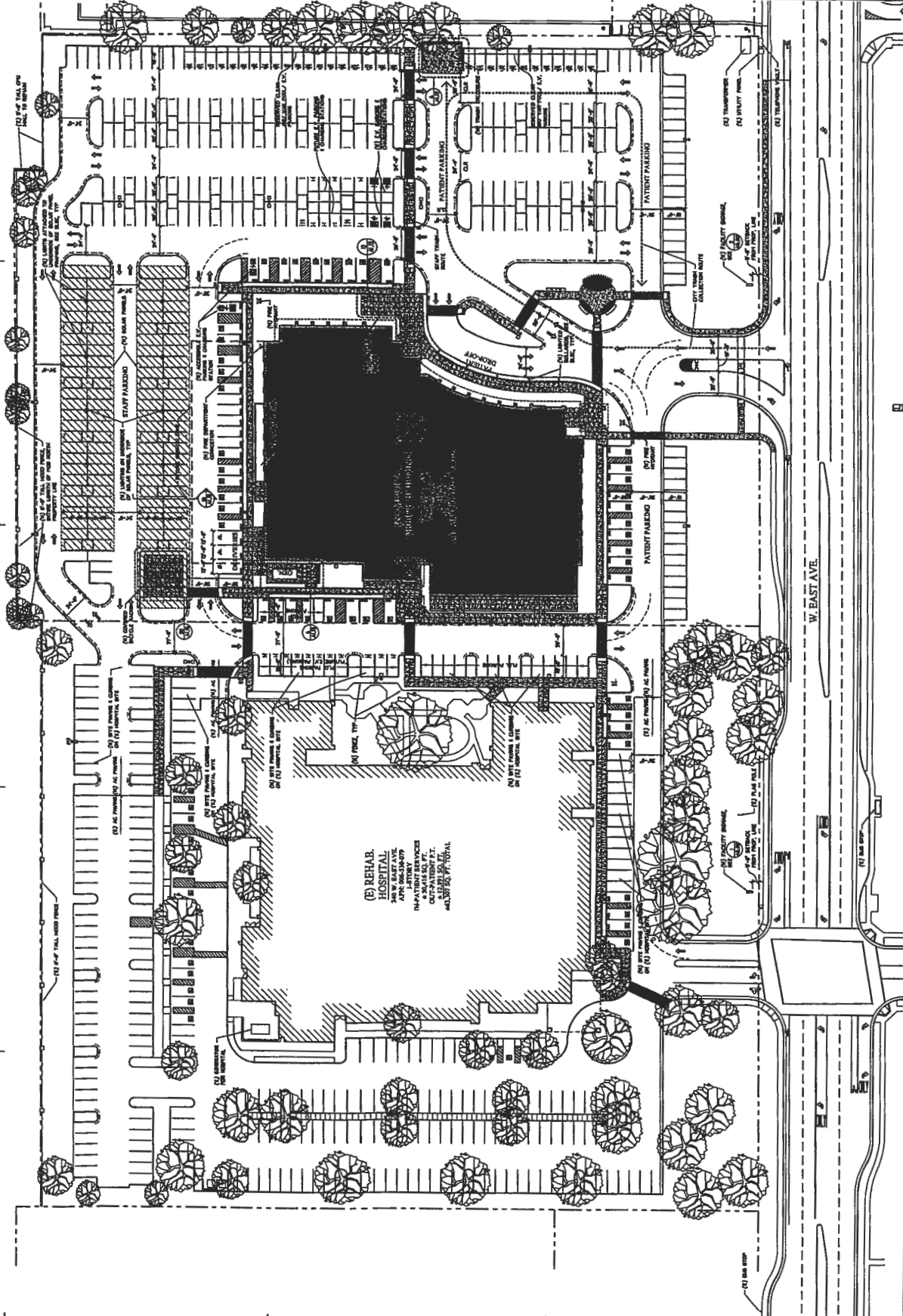
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Key Plan

KAP Job No. 24018  
Basic A111  
Date: 04/04/11  
Drawn By: J. J. [Signature]  
Checked By: J. J. [Signature]

OVERALL  
NEW SITE PLAN

A1.11



### GENERAL NOTES

- SEE CIVIL PLAN FOR ACCESSION, INSPECTION, UTILITIES
- SEE ELECTRICAL PLAN FOR SITE LIGHTING & LUMINANCE
- SEE LANDSCAPE PLAN FOR SITE PLANTING AND IRRIGATION
- ACCESS TO SITE, ADJACENT BUILDINGS AND THE ACCESS CENTER IS TO BE MAINTAINED AND CLEAR AT ALL TIMES. CENTER IS TO BE MAINTAINED FOR THE PROPERTY OWNER.

### SITE LEGEND

(1) BUILDING / STRUCTURE TO REMAIN	(2) LIGHT POLE	(3) LIGHT POLE ON (2) REMAIN	(4) LIGHT POLE ON (2) REMAIN	(5) LIGHT POLE ON (2) REMAIN	(6) LIGHT POLE ON (2) REMAIN	(7) LIGHT POLE ON (2) REMAIN	(8) LIGHT POLE ON (2) REMAIN	(9) LIGHT POLE ON (2) REMAIN	(10) LIGHT POLE ON (2) REMAIN	(11) LIGHT POLE ON (2) REMAIN	(12) LIGHT POLE ON (2) REMAIN	(13) LIGHT POLE ON (2) REMAIN	(14) LIGHT POLE ON (2) REMAIN	(15) LIGHT POLE ON (2) REMAIN	(16) LIGHT POLE ON (2) REMAIN	(17) LIGHT POLE ON (2) REMAIN	(18) LIGHT POLE ON (2) REMAIN	(19) LIGHT POLE ON (2) REMAIN	(20) LIGHT POLE ON (2) REMAIN	(21) LIGHT POLE ON (2) REMAIN	(22) LIGHT POLE ON (2) REMAIN	(23) LIGHT POLE ON (2) REMAIN	(24) LIGHT POLE ON (2) REMAIN	(25) LIGHT POLE ON (2) REMAIN	(26) LIGHT POLE ON (2) REMAIN	(27) LIGHT POLE ON (2) REMAIN	(28) LIGHT POLE ON (2) REMAIN	(29) LIGHT POLE ON (2) REMAIN	(30) LIGHT POLE ON (2) REMAIN	(31) LIGHT POLE ON (2) REMAIN	(32) LIGHT POLE ON (2) REMAIN	(33) LIGHT POLE ON (2) REMAIN	(34) LIGHT POLE ON (2) REMAIN	(35) LIGHT POLE ON (2) REMAIN	(36) LIGHT POLE ON (2) REMAIN	(37) LIGHT POLE ON (2) REMAIN	(38) LIGHT POLE ON (2) REMAIN	(39) LIGHT POLE ON (2) REMAIN	(40) LIGHT POLE ON (2) REMAIN	(41) LIGHT POLE ON (2) REMAIN	(42) LIGHT POLE ON (2) REMAIN	(43) LIGHT POLE ON (2) REMAIN	(44) LIGHT POLE ON (2) REMAIN	(45) LIGHT POLE ON (2) REMAIN	(46) LIGHT POLE ON (2) REMAIN	(47) LIGHT POLE ON (2) REMAIN	(48) LIGHT POLE ON (2) REMAIN	(49) LIGHT POLE ON (2) REMAIN	(50) LIGHT POLE ON (2) REMAIN	(51) LIGHT POLE ON (2) REMAIN	(52) LIGHT POLE ON (2) REMAIN	(53) LIGHT POLE ON (2) REMAIN	(54) LIGHT POLE ON (2) REMAIN	(55) LIGHT POLE ON (2) REMAIN	(56) LIGHT POLE ON (2) REMAIN	(57) LIGHT POLE ON (2) REMAIN	(58) LIGHT POLE ON (2) REMAIN	(59) LIGHT POLE ON (2) REMAIN	(60) LIGHT POLE ON (2) REMAIN	(61) LIGHT POLE ON (2) REMAIN	(62) LIGHT POLE ON (2) REMAIN	(63) LIGHT POLE ON (2) REMAIN	(64) LIGHT POLE ON (2) REMAIN	(65) LIGHT POLE ON (2) REMAIN	(66) LIGHT POLE ON (2) REMAIN	(67) LIGHT POLE ON (2) REMAIN	(68) LIGHT POLE ON (2) REMAIN	(69) LIGHT POLE ON (2) REMAIN	(70) LIGHT POLE ON (2) REMAIN	(71) LIGHT POLE ON (2) REMAIN	(72) LIGHT POLE ON (2) REMAIN	(73) LIGHT POLE ON (2) REMAIN	(74) LIGHT POLE ON (2) REMAIN	(75) LIGHT POLE ON (2) REMAIN	(76) LIGHT POLE ON (2) REMAIN	(77) LIGHT POLE ON (2) REMAIN	(78) LIGHT POLE ON (2) REMAIN	(79) LIGHT POLE ON (2) REMAIN	(80) LIGHT POLE ON (2) REMAIN	(81) LIGHT POLE ON (2) REMAIN	(82) LIGHT POLE ON (2) REMAIN	(83) LIGHT POLE ON (2) REMAIN	(84) LIGHT POLE ON (2) REMAIN	(85) LIGHT POLE ON (2) REMAIN	(86) LIGHT POLE ON (2) REMAIN	(87) LIGHT POLE ON (2) REMAIN	(88) LIGHT POLE ON (2) REMAIN	(89) LIGHT POLE ON (2) REMAIN	(90) LIGHT POLE ON (2) REMAIN	(91) LIGHT POLE ON (2) REMAIN	(92) LIGHT POLE ON (2) REMAIN	(93) LIGHT POLE ON (2) REMAIN	(94) LIGHT POLE ON (2) REMAIN	(95) LIGHT POLE ON (2) REMAIN	(96) LIGHT POLE ON (2) REMAIN	(97) LIGHT POLE ON (2) REMAIN	(98) LIGHT POLE ON (2) REMAIN	(99) LIGHT POLE ON (2) REMAIN	(100) LIGHT POLE ON (2) REMAIN
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