

CAPACITY ANALYSIS WORKSHEET

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	ADJ. FLOW RATE (v)	ADJ. SAT. FLOW RATE (s)	FLOW RATIO (v/s)	GREEN RATIO (g/C)	LANE GROUP CAPACITY (c)	v/c RATIO
EB						
L	21	151	0.137	0.509	77	0.270
T	890	3208	0.277	0.509	1634	0.545
WB						
T	1098	3208	0.342	0.667	2138	0.513 *
R	268	1340	0.200	0.667	894	0.300
NB						
LTR	13	1110	0.012	0.278	308	0.043
SB						
L	201	1435	0.140	0.278	399	0.505
TR	175	1173	0.150	0.278	326	0.538 *

Cycle Length, C = 108.0 sec.

Lost Time Per Cycle, L = 6.0 sec.

Sum (v/s) critical = 0.492

X critical = 0.521

LEVEL-OF-SERVICE WORKSHEET

	v/c	g/C	CYCLE	DELAY	LANE	DELAY	PROG.	LANE	LANE	DELAY	LOS
	RATIO	RATIO	LEN.	d	GROUP	d	FACT.	GRP.	GRP.	BY	BY
	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
EB											
L	0.270	1.019	108.0	11.5	77	0.5	1.00	11.9	B	13.9	B
T	0.545	0.509	108.0	13.7	1634	0.3	1.00	14.0	B		
WB											
T	0.513	0.667	108.0	6.9	2138	0.2	1.00	7.1	B	6.8	B
R	0.300	0.667	108.0	5.7	894	0.1	1.00	5.8	B		
NB											
LTR	0.043	0.278	108.0	21.7	308	0.0	1.00	21.7	C	21.7	C
SB											
L	0.505	0.556	108.0	24.9	399	0.9	1.00	25.8	D	26.1	D
TR	0.538	0.278	108.0	25.2	326	1.4	1.00	26.6	D		

Intersection Delay = 12.1 (sec/veh) Intersection LOS = B

IDENTIFYING INFORMATION

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NAME OF THE EAST/WEST STREET.....FLORIDA AVE

NAME OF THE NORTH/SOUTH STREET.....ECKINGTON PLACE

AREA TYPE.....CBD

PEDESTRIAN WALKING SPEED..... 4 (feet/sec)

NAME OF THE ANALYST.....CWB

DATE OF THE ANALYSIS.....4/6/87

TIME PERIOD ANALYZED.....4:30-5:30PM

OTHER INFORMATION:

PEAK HOUR ANALYSIS COMPUTED ON 4/9/87 *EXISTING*

TRAFFIC VOLUMES

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	EB	WB	NB	SB
LEFT	43	0	3	356
THRU	1104	975	2	0
RIGHT	0	349	7	88
RTOR	0	100	0	10

(RTOR volume must be less than or equal to RIGHT turn volumes.)

INTERSECTION GEOMETRY

NUMBER OF LANES PER DIRECTION INCLUDING TURN BAYS:

EASTBOUND = 3 WESTBOUND = 3 NORTHBOUND = 1 SOUTHBOUND = 2

LANE	EB		WB		NB		SB	
	TYPE	WIDTH	TYPE	WIDTH	TYPE	WIDTH	TYPE	WIDTH
1	L	12.0	T	12.0	LTR	12.0	L	12.0
2	T	12.0	T	12.0		12.0	LTR	12.0
3	T	12.0	R	12.0		12.0		12.0
4		12.0		12.0		12.0		12.0
5		12.0		12.0		12.0		12.0
6		12.0		12.0		12.0		12.0

L - EXCLUSIVE LEFT LANE
 LT - LEFT/THROUGH LANE
 LR - LEFT/RIGHT ONLY LANE
 LTR - LEFT/THROUGH/RIGHT LANE

T - EXCLUSIVE THROUGH LANE
 TR - THROUGH/RIGHT LANE
 R - EXCLUSIVE RIGHT LANE

	GRADE (%)	HEAVY VEH. (%)	ADJACENT PKG Y/N	BUSES (Nm)	BUSES (Nb)	PHF
EASTBOUND	0.00	2.00	N	0	0	0.82
WESTBOUND	0.00	2.00	N	0	0	0.97
NORTHBOUND	0.00	2.00	N	0	0	0.90
SOUTHBOUND	0.00	2.00	Y	5	0	0.88

Nm = number of parking maneuvers/hr; Nb = number of buses stopping/hr

	CONFLICTING PEDS (peds/hour)	PEDESTRIAN BUTTON (Y/N)	PEDESTRIAN BUTTON (min T)	ARRIVAL TYPE
EASTBOUND	30	N	18.5	3
NORTHBOUND	0	N	8.0	3
SOUTHBOUND	0	Y	11.5	3

Minimum green time for pedestrians

SIGNAL SETTINGS - OPERATIONAL ANALYSIS

PRETIMED LOST TIME/PHASE = 3.0 CYCLE LENGTH = 108.0

EAST/WEST PHASING

	PHASE-1	PHASE-2	PHASE-3	PHASE-4
EASTBOUND				
LEFT	X			
THRU	X			
RIGHT	X			
WESTBOUND				
LEFT				
THRU	X	X		
RIGHT	X	X		
PEDS	X	X		
NORTHBOUND RT				
SOUTHBOUND RT				
GREEN	55.0	10.0	0.0	0.0
YELLOW + ALL RED	3.0	7.0	0.0	0.0

NORTH/SOUTH PHASING

PHASE-1 PHASE-2 PHASE-3 PHASE-4

THRU X
 RIGHT X
 PEDS

SOUTHBOUND
 LEFT X
 THRU X
 RIGHT X
 PEDS X

EASTBOUND RT
 WESTBOUND RT

GREEN 30.0 0.0 0.0 0.0
 YELLOW + ALL RED 3.0 0.0 0.0 0.0

VOLUME ADJUSTMENT WORKSHEET

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	MVT. VOL.	PHF	ADJ. VOL.	LANE GRP.	LANE GRP. NO. VOL. LN	LANE UTIL. FACT.	GROWTH FACT.	ADJ. GRP. VOL.	PROP LT	PROP RT
	----	----	----	----	----	----	----	----	----	----
EB										
LT	43	0.82	52	L	52 1	1.000	1.000	52	1.00	0.00
TH	1104	0.82	1346	T	1346 2	1.050	1.000	1414	0.00	0.00
RT	0	0.82					1.000			
WB										
LT	0	0.97					1.000			
TH	975	0.97	1005	T	1005 2	1.050	1.000	1055	0.00	0.00
RT	349	0.97	257	R	257 1	1.000	1.000	257	0.00	1.00
NB										
LT	3	0.90					1.000			
TH	2	0.90	2	LTR	13 1	1.000	1.000	13	0.25	0.58
RT	7	0.90					1.000			
SB										
LT	356	0.88	405	L	283 1	1.000	1.000	283	1.00	0.00
TH	0	0.88	0	LTR	210 1	1.000	1.000	210	0.58	0.42
RT	88	0.88					1.000			

* Denotes a Defacto Left Turn Lane Group

SATURATION FLOW ADJUSTMENT WORKSHEET

	IDEAL SAT. FLOW	NO. LNS	f W	f HV	f G	f p	f BB	f A	f RT	f LT	ADJ. SAT. FLOW
EB											
L	1800	1	1.000	0.990	1.000	1.000	1.000	0.900	1.000	0.110	176
T	1800	2	1.000	0.990	1.000	1.000	1.000	0.900	1.000	1.000	3208
WB											
T	1800	2	1.000	0.990	1.000	1.000	1.000	0.900	1.000	1.000	3208
R	1800	1	1.000	0.990	1.000	1.000	1.000	0.900	0.836	1.000	1340
NB											
LTR	1800	1	1.000	0.990	1.000	1.000	1.000	0.900	0.821	0.819	1079
SB											
L	1800	1	1.000	0.990	1.000	1.000	1.000	0.900	1.000	0.893	1432
LTR	1800	1	1.000	0.990	1.000	0.875	1.000	0.900	0.930	0.955	1247

CAPACITY ANALYSIS WORKSHEET

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	ADJ. FLOW RATE (v)	ADJ. SAT. FLOW RATE (s)	FLOW RATIO (v/s)	GREEN RATIO (g/C)	LANE GROUP CAPACITY (c)	v/c RATIO
EB						
L	52	176	0.299	0.509	89	0.586
T	1414	3208	0.441	0.509	1634	0.865
WB						
T	1055	3208	0.329	0.667	2138	0.494 *
R	257	1340	0.192	0.667	894	0.287
NB						
LTR	13	1079	0.012	0.278	300	0.044
SB						
L	283	1432	0.198	0.278	398	0.712 *
LTR	210	1247	0.169	0.278	346	0.607

Cycle Length, C = 108.0 sec.

Sum (v/s) critical = 0.527

Lost Time Per Cycle, L = 6.0 sec.

X critical = 0.558

LEVEL-OF-SERVICE WORKSHEET

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	v/c	g/C	CYCLE	DELAY	LANE	DELAY	PROG.	LANE	LANE	DELAY	LOS
	RATIO	RATIO	LEN.	d	GROUP	d	FACT.	GRP.	GRP.	BY	BY
	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
EB											
L	0.586	1.019	108.0	14.1	89	6.6	1.00	20.7	C	21.3	C
T	0.865	0.509	108.0	17.7	1634	3.7	1.00	21.4	C		
WB											
T	0.494	0.667	108.0	6.8	2138	0.2	1.00	6.9	B	6.7	B
R	0.287	0.667	108.0	5.6	894	0.1	1.00	5.7	B		
NB											
LTR	0.044	0.278	108.0	21.7	300	0.0	1.00	21.7	C	21.7	C
SB											
L	0.712	0.556	108.0	26.7	398	4.0	1.00	30.7	D	29.5	D
LTR	0.607	0.278	108.0	25.8	346	2.2	1.00	27.9	D		

Intersection Delay = 16.7 (sec/veh) Intersection LOS = C

IDENTIFYING INFORMATION

NAME OF THE EAST/WEST STREET.....FLORIDA AVE

NAME OF THE NORTH/SOUTH STREET.....ECKINGTON PLACE

AREA TYPE.....CBD

PEDESTRIAN WALKING SPEED..... 4 (feet/sec)

NAME OF THE ANALYST.....CWB

DATE OF THE ANALYSIS.....

TIME PERIOD ANALYZED.....4:30-5:30PM

OTHER INFORMATION:

PEAK HOUR ANALYSIS FOR PROPOSED CONDITIONS

TRAFFIC VOLUMES

	EB	WB	NB	SB
LEFT	49	0	3	359
THRU	1104	975	2	0
RIGHT	0	353	7	93
RTOR	0	100	0	10

(RTOR volume must be less than or equal to RIGHT turn volumes.)

INTERSECTION GEOMETRY

NUMBER OF LANES PER DIRECTION INCLUDING TURN BAYS:

EASTBOUND = 3 WESTBOUND = 3 NORTHBOUND = 1 SOUTHBOUND = 2

LANE	EB		WB		NB		SB	
	TYPE	WIDTH	TYPE	WIDTH	TYPE	WIDTH	TYPE	WIDTH
1	L	12.0	T	12.0	LTR	12.0	L	12.0
2	T	12.0	T	12.0		12.0	LTR	12.0
3	T	12.0	R	12.0		12.0		12.0
4		12.0		12.0		12.0		12.0
5		12.0		12.0		12.0		12.0
6		12.0		12.0		12.0		12.0

L - EXCLUSIVE LEFT LANE T - EXCLUSIVE THROUGH LANE
 LT - LEFT/THROUGH LANE TR - THROUGH/RIGHT LANE
 LR - LEFT/RIGHT ONLY LANE R - EXCLUSIVE RIGHT LANE
 LTR - LEFT/THROUGH/RIGHT LANE

ADJUSTMENT FACTORS

	GRADE (%)	HEAVY VEH. (%)	ADJACENT PKG Y/N	BUSES (Nm)	BUSES (Nb)	PHF
EASTBOUND	0.00	2.00	N	0	0	0.82
WESTBOUND	0.00	2.00	N	0	0	0.97
NORTHBOUND	0.00	2.00	N	0	0	0.90
SOUTHBOUND	0.00	2.00	Y	5	0	0.88

Nm = number of parking maneuvers/hr; Nb = number of buses stopping/hr

	CONFLICTING PEDS (peds/hour)	PEDESTRIAN BUTTON (Y/N)	PEDESTRIAN BUTTON (min T)	ARRIVAL TYPE
EASTBOUND	30	N	18.5	3
WESTBOUND	30	N	18.5	3
NORTHBOUND	0	N	0.0	3
SOUTHBOUND	30	N	11.5	3

min T = minimum green time for pedestrians

SIGNAL SETTINGS - OPERATIONAL ANALYSIS

PRETIMED LOST TIME/PHASE = 3.0 CYCLE LENGTH = 108.0

EAST/WEST PHASING

	PHASE-1	PHASE-2	PHASE-3	PHASE-4
EASTBOUND				
LEFT	X			
THRU	X			
RIGHT	X			
PEDS				
WESTBOUND				
LEFT				
THRU	X	X		
RIGHT	X	X		
PEDS	X	X		

NORTHBOUND RT
SOUTHBOUND RT

GREEN	55.0	10.0	0.0	0.0
YELLOW + ALL RED	3.0	7.0	0.0	0.0

NORTH/SOUTH PHASING

	PHASE-1	PHASE-2	PHASE-3	PHASE-4
NORTHBOUND				
LEFT	X			
THRU	X			
RIGHT	X			
PEDS				
SOUTHBOUND				
LEFT	X			
THRU	X			
RIGHT	X			
PEDS	X			

EASTBOUND RT
WESTBOUND RT

GREEN	30.0	0.0	0.0	0.0
YELLOW + ALL RED	3.0	0.0	0.0	0.0

VOLUME ADJUSTMENT WORKSHEET

	MVT. VOL.	PHF	ADJ. VOL.	LANE GRP.	LANE GRP. NO. VOL. LN	LANE UTIL. FACT.	GROWTH FACT.	ADJ. GRP. VOL.	PROP LT	PROP RT
EB										
LT	49	0.82	60	L	60 1	1.000	1.000	60	1.00	0.00
TH	1104	0.82	1346	T	1346 2	1.050	1.000	1414	0.00	0.00
RT	0	0.82					1.000			
WB										
LT	0	0.97					1.000			
TH	975	0.97	1005	T	1005 2	1.050	1.000	1055	0.00	0.00
RT	353	0.97	261	R	261 1	1.000	1.000	261	0.00	1.00
NB										
LT	3	0.90					1.000			
TH	2	0.90	2	LTR	13 1	1.000	1.000	13	0.25	0.58
RT	7	0.90					1.000			
SB										
LT	359	0.88	408	L	286 1	1.000	1.000	286	1.00	0.00
TH	0	0.88	0	LTR	217 1	1.000	1.000	217	0.56	0.44
RT	93	0.88					1.000			

* Denotes a Defacto Left Turn Lane Group

SATURATION FLOW ADJUSTMENT WORKSHEET

	IDEAL		f	f	f	f	f	f	f	f		ADJ.
	SAT.	NO.	f	f	f	f	f	f	f	f	f	SAT.
	FLOW	LNS	W	HV	G	p	BB	A	RT	LT		FLOW
	----	----	----	----	----	----	----	----	----	----	----	----
EB												
L	1800	1	1.000	0.990	1.000	1.000	1.000	0.900	1.000	0.108		174
T	1800	2	1.000	0.990	1.000	1.000	1.000	0.900	1.000	1.000		3208
WB												
T	1800	2	1.000	0.990	1.000	1.000	1.000	0.900	1.000	1.000		3208
R	1800	1	1.000	0.990	1.000	1.000	1.000	0.900	0.836	1.000		1340
NB												
LTR	1800	1	1.000	0.990	1.000	1.000	1.000	0.900	0.821	0.810		1066
SB												
L	1800	1	1.000	0.990	1.000	1.000	1.000	0.900	1.000	0.893		1432
LTR	1800	1	1.000	0.990	1.000	0.875	1.000	0.900	0.928	0.957		1247

CAPACITY ANALYSIS WORKSHEET

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	ADJ. FLOW RATE (v)	ADJ. SAT. FLOW RATE (s)	FLOW RATIO (v/s)	GREEN RATIO (g/C)	LANE GROUP CAPACITY (c)	v/c RATIO
EB						
L	60	174	0.344	0.509	88	0.676
T	1414	3208	0.441	0.509	1634	0.865
WB						
T	1055	3208	0.329	0.667	2138	0.494
R	261	1340	0.195	0.667	894	0.292
NB						
LTR	13	1066	0.013	0.278	296	0.045
SB						
L	286	1432	0.199	0.278	398	0.718 *
LTR	217	1247	0.174	0.278	346	0.627

Cycle Length, C = 108.0 sec.

Lost Time Per Cycle, L = 9.0 sec.

Sum (v/s) critical = 0.199

X critical = 0.218

LEVEL-OF-SERVICE WORKSHEET

	v/c	g/C	CYCLE	DELAY	LANE	DELAY	PROG.	LANE	LANE	DELAY	LOS
	RATIO	RATIO	LEN.	d	GROUP	d	FACT.	GRP.	GRP.	BY	BY
				1	CAP.	2		DELAY	LOS	APP.	APP.
EB											
L	0.676	1.019	108.0	15.1	88	12.1	1.00	27.1	D	21.6	C
T	0.865	0.509	108.0	17.7	1634	3.7	1.00	21.4	C		
WB											
T	0.494	0.667	108.0	6.8	2138	0.2	1.00	6.9	B	6.7	B
R	0.292	0.667	108.0	5.7	894	0.1	1.00	5.7	B		
NB											
LTR	0.045	0.278	108.0	21.7	296	0.0	1.00	21.7	C	21.7	C
SB											
L	0.718	0.556	108.0	26.7	398	4.2	1.00	31.0	D	29.9	D
LTR	0.627	0.278	108.0	25.9	346	2.5	1.00	28.4	D		

Intersection Delay = 16.9 (sec/veh) Intersection LOS = C