

50-322-0L3

LDLCO EX 34

7/23/87

A-34

DOCKETED
USNRC

1995 HCM: SIGNALIZED INTERSECTIONS

Page-1

87 SEP 17 12:10

IDENTIFYING INFORMATION

NAME OF THE EAST/WEST STREET.....EB LIE SERVICE ROAD

NAME OF THE NORTH/SOUTH STREET.....WILLIS AVE

AREA TYPE.....OTHER

PEDESTRIAN WALKING SPEED.....0 (feet/sec)

NAME OF THE ANALYST.....BG

DATE OF THE ANALYSIS.....4/23/87

TIME PERIOD ANALYZED.....1300-1600

OTHER INFORMATION:

File 5023 30% Evacuation

TRAFFIC VOLUMES

	EB	WB	NE	SE
LEFT	281	0	0	586
THRU	430	0	728	800
RIGHT	172	0	217	0
RTOR	40	0	40	0

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

8709280183 870723
PDR ADOCK 05000322
PDR

NUCLEAR REGULATORY COMMISSION

34

Project No. 50-322-013 Official Exh. No. 1
Re: the matter of LILCO

Staff	IDENTIFIED
Applicant	RECEIVED
Interviewer	REGISTERED
Lead/Off'r	DATE <u>7-23-87</u>
Contractor	Witness
Signer	

Reporter Jeffrey Walsh M. J. J. J.

INTERSECTION GEOMETRY

Page-2

NUMBER OF LANES PER DIRECTION INCLUDING TURN BAYS:

EASTBOUND = 3 WESTBOUND = 0 NORTHBOUND = 2 SOUTHBOUND = 3

LANE	EB		WB		NB		SB	
	TYPE	WIDTH	TYPE	WIDTH	TYPE	WIDTH	TYPE	WIDTH
1	LT	10.0		12.0	T	11.0	L	11.0
2	T	10.0		12.0	TR	12.0	T	11.0
3	TR	11.0		12.0		12.0	T	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

ADJUSTMENT FACTORS

	GRADE (%)	HEAVY VEH. (%)	ADJACENT PKG Y/N	BUSES (Nm)	BUSES (Nb)	PWF
EASTBOUND	0.00	2.00	N	0	0	0.75
WESTBOUND	0.00	0.00	N	0	0	0.90
NORTHBOUND	0.00	2.00	N	0	0	0.90
SOUTHBOUND	0.00	2.00	N	0	0	0.99

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	50	N	22.0	3
WESTBOUND	50	N	22.0	3
NORTHBOUND	50	N	13.0	3
SOUTHBOUND	50	N	13.0	3

min T = minimum green time for pedestrians

SIGNAL SETTINGS - DESIGN ANALYSIS

Page-C

=====

ACTUATED

LOST TIME/CYCLE = 8.0

CYCLE LENGTH = 83.0

EAST/WEST PHASING

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

NORTHBOUND RT

SOUTHBOUND RT

NORTH/SOUTH PHASING

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

EASTBOUND RT

WESTBOUND RT

EFFECTIVE GREENS - DESIGN ANALYSIS

Page-4

=====

EFFECTIVE GREEN, s

EASTBOUND

LEFT

Permitted 26.00

Protected 0.00

THRU 26.00

RIGHT

Permitted 26.00

Protected 0.00

WESTBOUND

LEFT

Permitted 5.00

Protected 5.00

THRU 5.00

RIGHT

Permitted 5.00

Protected 5.00

NORTHBOUND

LEFT

Permitted 5.00

Protected 0.00

THRU 25.00

RIGHT

Permitted 25.00

Protected 0.00

SOUTHBOUND

LEFT

Permitted 25.00

Protected 23.00

THRU 49.00

RIGHT

Permitted 5.00

Protected 0.00

VOLUME ADJUSTMENT WORKSHEET

Page-5

	MVT.		ADJ.	LANE	LANE		LANE		ADJ.		
	VOL.	PHF	VOL.	GRP.	GRP.	NO.	UTIL.	GROWTH	GRP.	PROP	PROP
	----	----	----	----	VOL.	LN	FACT.	FACT.	VOL.	LT	RT
EB											
LT	281	0.75	375	*L	375	1	1.000	1.000	375	1.00	0.00
TH	453	0.75	604	TR	780	2	1.050	1.000	819	0.00	0.21
RT	172	0.75						1.000			
WB											
LT	0	0.90						1.000			
TH	0	0.90						1.000			
RT	0	0.90						1.000			
NE											
LT	0	0.90						1.000			
TH	728	0.90	909	TR	1006	2	1.050	1.000	1056	0.00	0.20
RT	217	0.90						1.000			
SB											
LT	586	0.99	592	L	592	1	1.000	1.000	592	1.00	0.00
TH	800	0.99	808	T	808	2	1.050	1.000	848	0.00	0.00
RT	0	0.99						1.000			

* Denotes a Defacto Left Turn Lane Group

Page - 5

000	010	020	030	040	050	060	070	080	090	100	110	120	130	140	150	160	170	180	190	200	210	220	230	240	250	260	270	280	290	300	310	320	330	340	350	360	370	380	390	400	410	420	430	440	450	460	470	480	490	500	510	520	530	540	550	560	570	580	590	600	610	620	630	640	650	660	670	680	690	700	710	720	730	740	750	760	770	780	790	800	810	820	830	840	850	860	870	880	890	900	910	920	930	940	950	960	970	980	990
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

[illegible]

CAPACITY ANALYSIS WORKSHEET

Page-7

=====

	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	375	1657	0.226	0.313	519	0.722
TR	819	3253	0.252	0.313	1019	0.804 *
WB						
NB						
TR	1056	3391	0.312	0.301	1021	1.034 *
SB						
Lperm.	122					
Lprot.	469	1642	0.286	0.277	455	1.032 *
T	848	3511	0.242	0.590	2072	0.409

Cycle Length, C = 93.0 sec.

Sum (v/s) critical = 0.849

Lost Time Per Cycle, L = 8.0 sec.

X critical = 0.940

LEVEL-OF-SERVICE WORKSHEET

Page-8

	v/c	g/c	CYCLE	DELAY	LANE	DELAY		LANE	LANE	DELAY	LOS
	RATIO	RATIO	LEN.	d	GROUP	d	PROG.	GRP.	GRP.	BY	BY
				1	CAP.	2	FACT.	DELAY	LOS	APP.	APP.
ED											
L	0.722	0.627	83.0	19.2	519	3.4	1.00	22.6	C	20.6	C
TR	0.804	0.313	83.0	19.9	1019	3.3	0.95	19.7	C		
WB											
NB											
TR	1.034	0.301	83.0	22.4	1021	30.7	0.95	45.1	E	45.1	E
SB											
L	1.032	0.573	83.0	13.9	455	41.4	1.00	55.3	E	26.3	D
T	0.409	0.590	83.0	7.0	2072	0.1	0.95	6.0	B		

Intersection Delay = 29.8 (sec/veh) Intersection LOS = D