

Appendix 1: Trip Generation



TABLE: A1

Shell Gas Station at 337 71st Street

Trip Generation Analysis - AM & PM Peak Hour (Using ITE Rates)

LAND USE (LU)	UNITS	AM / PM PEAK HOUR									
		ITE LU CODE	PEAK HOUR	ITE TRIP GENERATION RATE	TRIPS						
					%	IN	%	OUT	TOTAL		
Existing											
Gasoline/Service Station	8 V.F.P.	944	AM	12.16	51%	50	49%	48	98		
			PM	13.87	50%	56	50%	55	111		
Proposed											
Gasoline/Service Station with Convenience Market and Car Wash	8 V.F.P.	946	AM	11.84	51%	48	49%	47	95		
			PM	13.86	51%	57	49%	54	111		
External Net New Vehicle Trips (Proposed - Existing Trips)					0%	-2	0%	-1	-3	0	
					0%		1		-1		

NOTES:

Sources: ITE Trip Generation, 9th Edition & ITE Trip Generation Handbook, 2nd Edition.
Highest Peak Hour

TABLE: A1-1

Shell Gas Station at 337 71st Street

Trip Generation Analysis - AM & PM Peak Hour (Using Local Data)

LAND USE (LU)	UNITS	ITE LU CODE	PEAK HOUR	LOCAL TRIP GENERATION RATE	AM / PM PEAK HOUR				
					TRIPS				
					%	IN	%	OUT	TOTAL
Existing									
Gasoline/Service Station *	8 V.F.P.	944	AM	14.00	52%	58	48%	54	112
			PM	17.00	49%	66	51%	70	136
Proposed									
Gasoline/Service Station with **	8 V.F.P.	946	AM	13.63	51%	56	49%	53	109
Convenience Market and Car Wash			PM	16.99	51%	69	49%	67	136
External Net New Vehicle Trips (Proposed - Existing Trips)					0%	-2	0%	-1	-3
					0%	3	0%	-3	0

NOTES:

Sources: ITE Trip Generation, 9th Edition & ITE Trip Generation Handbook, 2nd Edition.

* Trip Generation characteristics obtained from actual traffic data at the existing site (i.e. Shell Gas Station at 337 71 St)

** ITE rates were adjusted using a Local to ITE ratio (i.e. AM, 14.00/12.16 = 1.15) from the existing use data.
Highest Peak Hour

Shell Gas Station at 337 71st Street

Local Trip Generation Data

Date: Tuesday, October 15, 2013

Location: Gas Station at 337 71 St

Actual traffic data collected at the existing site.

8 Vehicle Fueling Position (VFP)

Peak Hour

Time	AM Peak Period - Vehicle Trips		
	In	Out	Total
7:00 AM - 7:15 AM	6	6	12
7:15 AM - 7:30 AM	9	7	16
7:30 AM - 7:45 AM	7	6	13
7:45 AM - 8:00 AM	10	10	20
8:00 AM - 8:15 AM	15	14	29
8:15 AM - 8:30 AM	13	12	25
8:30 AM - 8:45 AM	16	15	31
8:45 AM - 9:00 AM	14	13	27
Total	90	83	173

Time	PM Peak Period - Vehicle Trips		
	In	Out	Total
4:00 PM - 4:15 PM	11	12	23
4:15 PM - 4:30 PM	14	14	28
4:30 PM - 4:45 PM	7	7	14
4:45 PM - 5:00 PM	12	10	22
5:00 PM - 5:15 PM	16	17	33
5:15 PM - 5:30 PM	14	19	33
5:30 PM - 5:45 PM	15	12	27
5:45 PM - 6:00 PM	21	22	43
Total	110	113	223

AM Peak Hour (8:00 - 9:00 AM)			
Peak Hour Trips	In	Out	Total
	58	54	112
Rate	7.250	6.750	14.00

PM Peak Hour (5:00 PM - 6:00 PM)			
Peak Hour Trips	In	Out	Total
	66	70	136
Rate	8.250	8.750	17.00

Gasoline/Service Station (944)

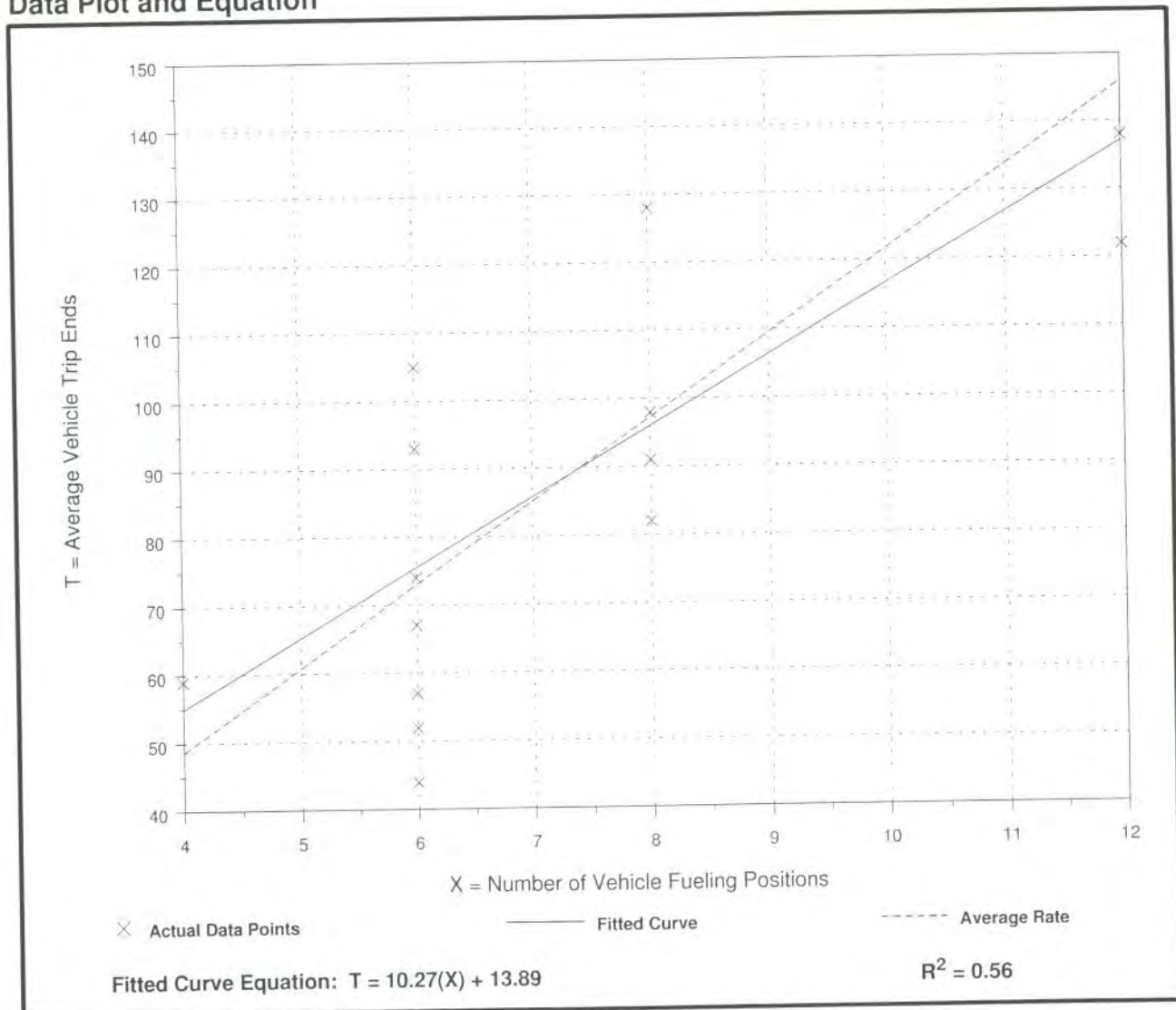
Average Vehicle Trip Ends vs: Vehicle Fueling Positions
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.

Number of Studies: 15
 Average Vehicle Fueling Positions: 7
 Directional Distribution: 51% entering, 49% exiting

Trip Generation per Vehicle Fueling Position

Average Rate	Range of Rates	Standard Deviation
12.16	7.33 - 17.50	4.29

Data Plot and Equation



Gasoline/Service Station (944)

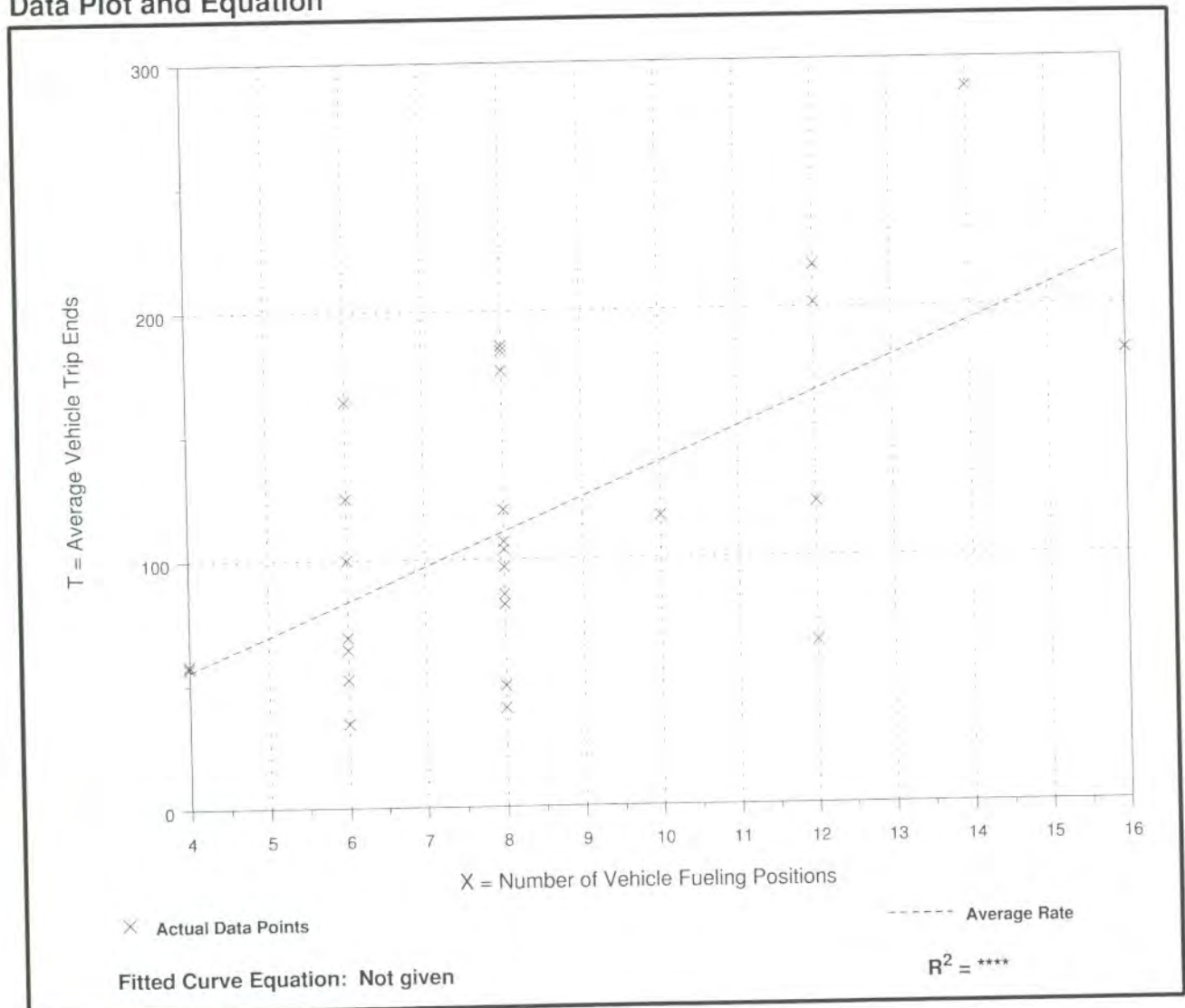
Average Vehicle Trip Ends vs: Vehicle Fueling Positions
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.

Number of Studies: 28
 Average Vehicle Fueling Positions: 8
 Directional Distribution: 50% entering, 50% exiting

Trip Generation per Vehicle Fueling Position

Average Rate	Range of Rates	Standard Deviation
13.87	5.00 - 27.33	6.65

Data Plot and Equation



Gasoline/Service Station with Convenience Market and Car Wash (946)

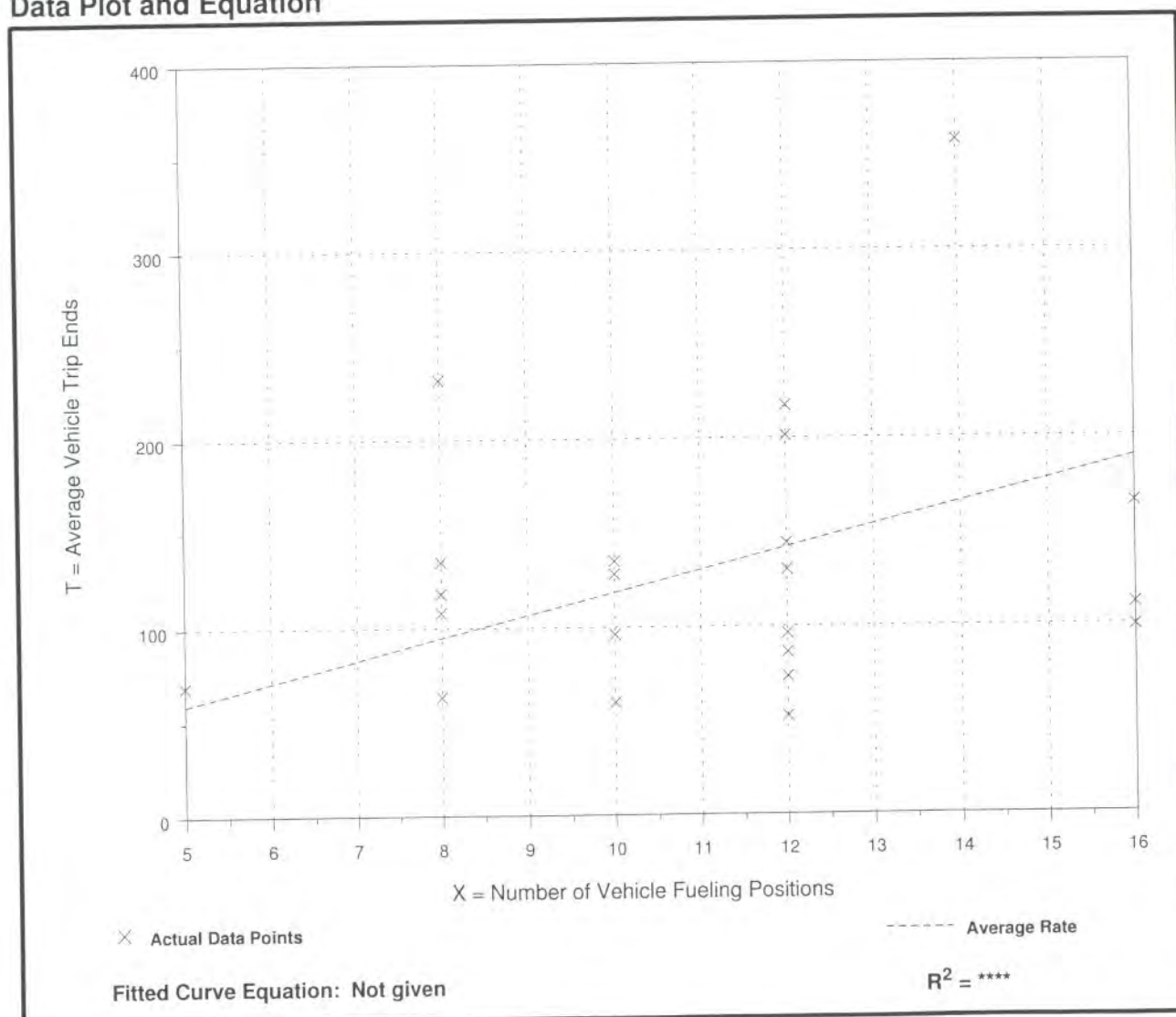
Average Vehicle Trip Ends vs: Vehicle Fueling Positions
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.

Number of Studies: 22
Average Vehicle Fueling Positions: 11
Directional Distribution: 51% entering, 49% exiting

Trip Generation per Vehicle Fueling Position

Average Rate	Range of Rates	Standard Deviation
11.84	4.33 - 29.00	6.95

Data Plot and Equation



Gasoline/Service Station with Convenience Market and Car Wash (946)

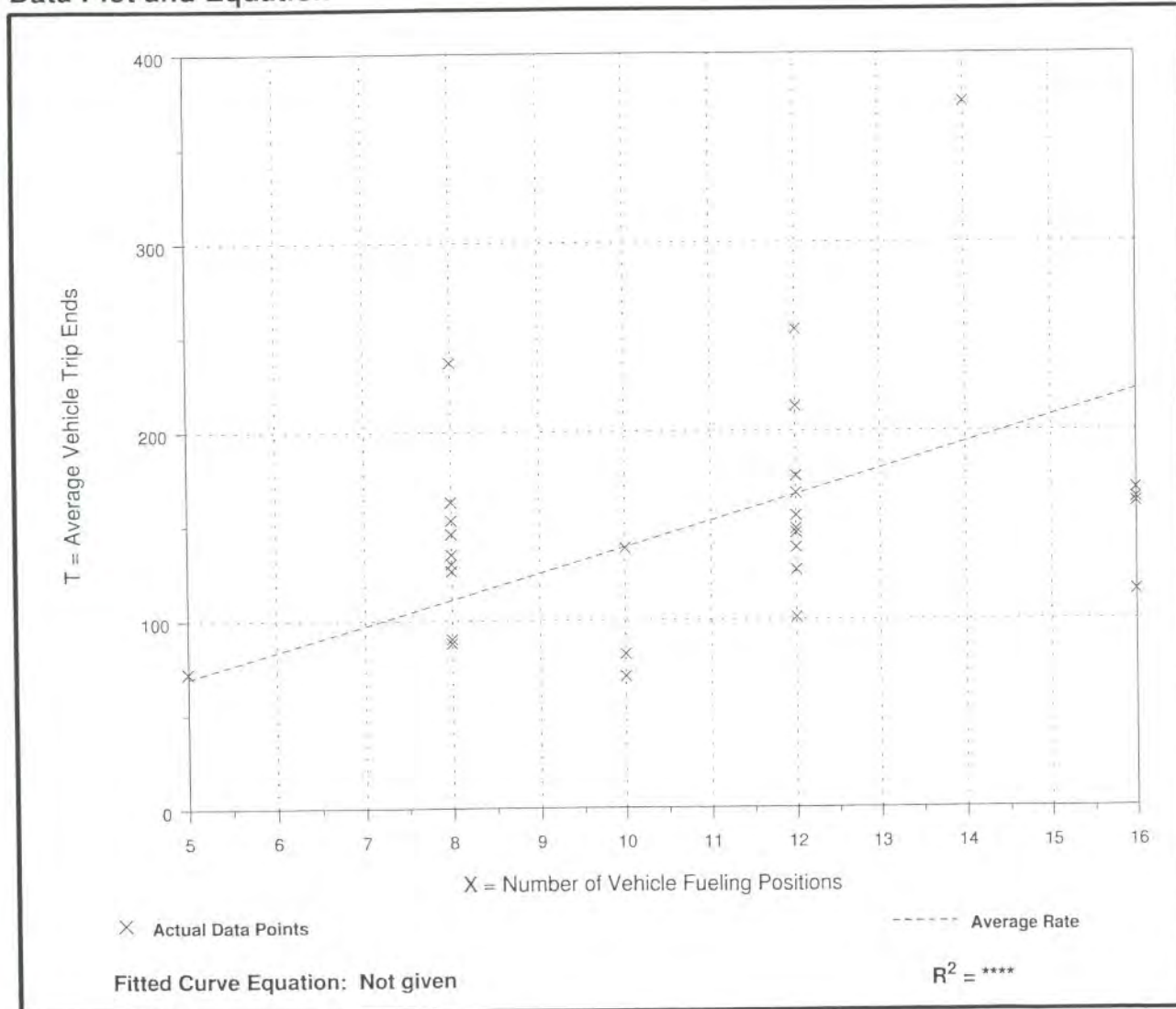
Average Vehicle Trip Ends vs: Vehicle Fueling Positions
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.

Number of Studies: 30
Average Vehicle Fueling Positions: 11
Directional Distribution: 51% entering, 49% exiting

Trip Generation per Vehicle Fueling Position

Average Rate	Range of Rates	Standard Deviation
13.86	7.00 - 29.63	6.31

Data Plot and Equation



Appendix 2: Trip Distribution / Assignment



Traffic Analysis Zone (TAZ)

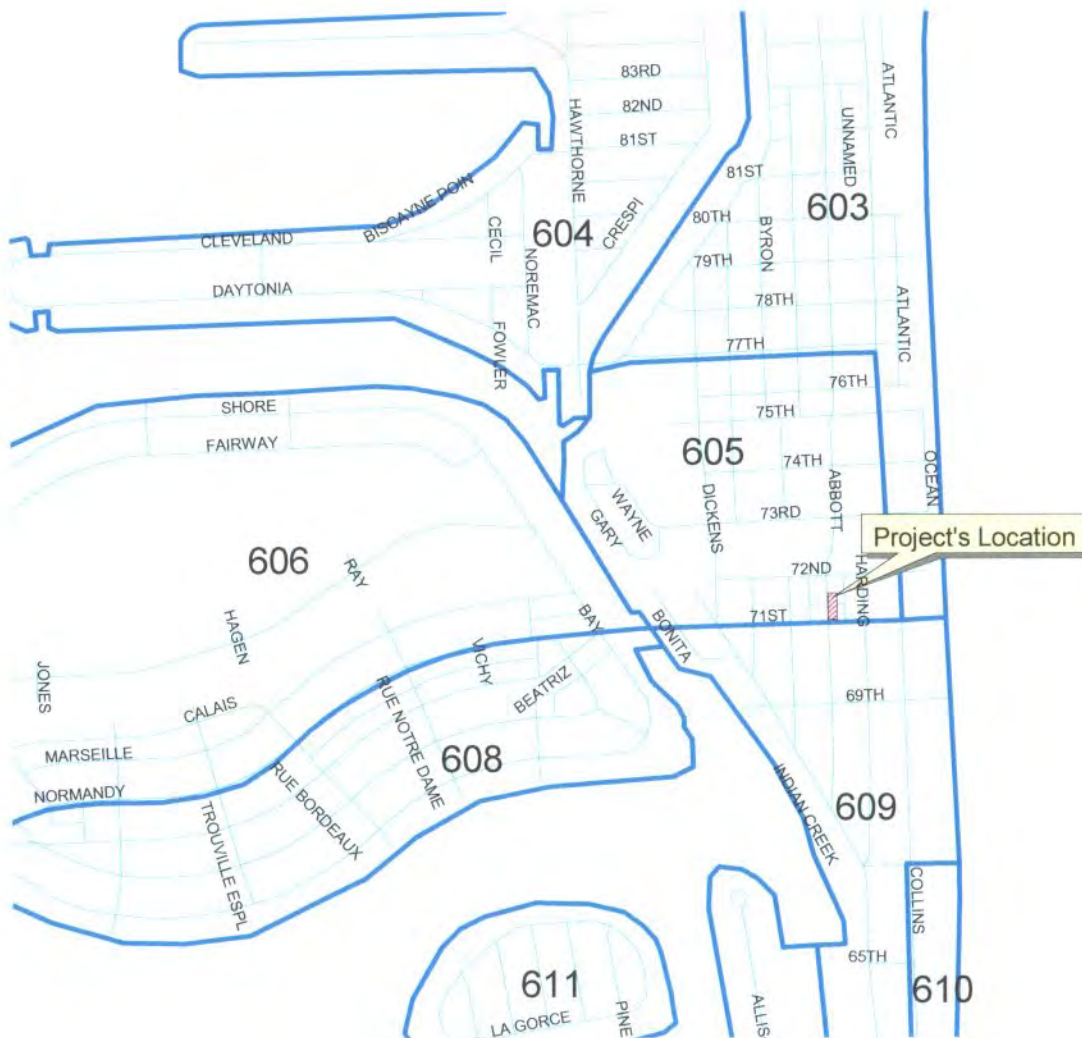


TABLE: A2

Shell Gas Station at 337 71st Street
 Project Quadrant Distribution (AM Peak Hour)
 (TAZ 605)

DIRECTION	DISTRIBUTION (%) DESIGN YEAR	DIRECTION	DISTRIBUTION	AM PEAK HOUR		
				IN	OUT	TOTAL
NNE	13.64	NORTH	32.27%	-1	0	-1
ENE	2.06					
ESE	0.70	EAST	2.76%	0	0	0
SSE	16.48					
SSW	20.55	SOUTH	37.03%	-1	-1	-2
WSW	18.57					
WNW	9.38	WEST	27.95%	0	0	0
NNW	18.63					
TOTAL	100.00		100.00%	-2	-1	-3

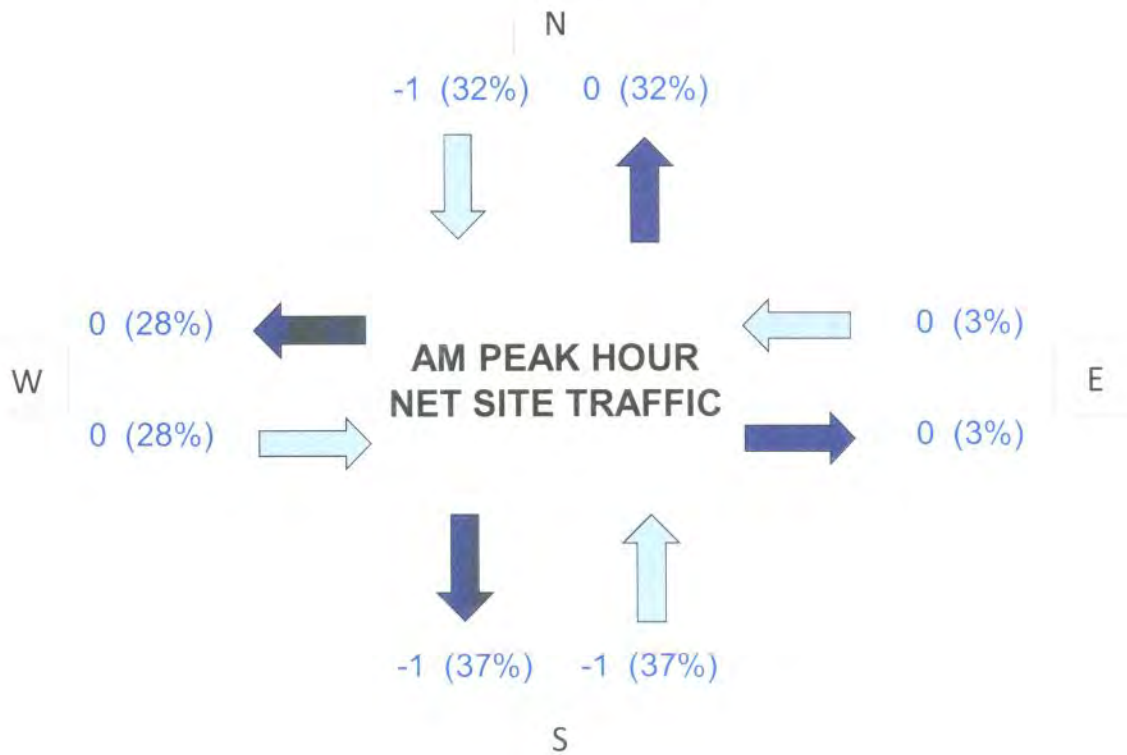


TABLE: A2-1

Shell Gas Station at 337 71st Street
Project Cardinal Distribution (AM Peak Hour)
(TAZ 605)

DIRECTION	DISTRIBUTION PERCENTAGES (%)			AM PEAK HOUR		
	MIAMI-DADE LRTP MODEL YEAR		DESIGN YEAR	IN	OUT	TOTAL
	2005	2035	2015			
NNE	12.02	16.87	13.64	0	0	0
ENE	0.00	6.18	2.06	0	0	0
ESE	0.00	2.10	0.70	0	0	0
SSE	10.28	28.89	16.48	0	0	0
SSW	25.80	10.04	20.55	-1	-1	-2
WSW	20.01	15.69	18.57	0	0	0
WNW	10.15	7.84	9.38	0	0	0
NNW	21.75	12.39	18.63	-1	0	-1
TOTAL	100.00	100.00	100.00	-2	-1	-3

Note:

Based on Miami-Dade Transportation Plan (to the Year 2035) Directional Trip Distribution Report, October 2009. Since the current data is only available for the model years 2005 and 2035, the eight (8) cardinal directions were interpolated to the design year of 2015.

TABLE: A2-2

AM PEAK HOUR	IN	OUT	TOTAL
VOLUME:	-2	-1	-3
PERCENT:	66.00%	34.00%	(Calculated)

DIRECTION	DISTRIBUTION %	INGRESS		EGRESS		TOTAL
		CALCULATED	USED	CALCULATED	USED	
NNE	13.64	-0.270006	0	-0.139094	0	0
ENE	2.06	-0.040788	0	-0.021012	0	0
ESE	0.70	-0.01386	0	-0.00714	0	0
SSE	16.48	-0.32637	0	-0.16813	0	0
SSW	20.55	-0.406824	-1	-0.209576	-1	-2
WSW	18.57	-0.367686	0	-0.189414	0	0
WNW	9.38	-0.185724	0	-0.095676	0	0
NNW	18.63	-0.368874	-1	-0.190026	0	-1
TOTAL	100.00	-1.980132	-2	-1.020068	-1	-3

TABLE: A3

Shell Gas Station at 337 71st Street
 Project Quadrant Distribution (PM Peak Hour)
 (TAZ 605)

DIRECTION	DISTRIBUTION (%) DESIGN YEAR	DIRECTION	DISTRIBUTION	PM PEAK HOUR		
				IN	OUT	TOTAL
NNE	13.64	NORTH	32.27%	0	0	0
ENE	2.06					
ESE	0.70	EAST	2.76%	0	0	0
SSE	16.48					
SSW	20.55	SOUTH	37.03%	1	-1	0
WSW	18.57					
WNW	9.38	WEST	27.95%	0	0	0
NNW	18.63					
TOTAL	100.00		100.00%	1	-1	0

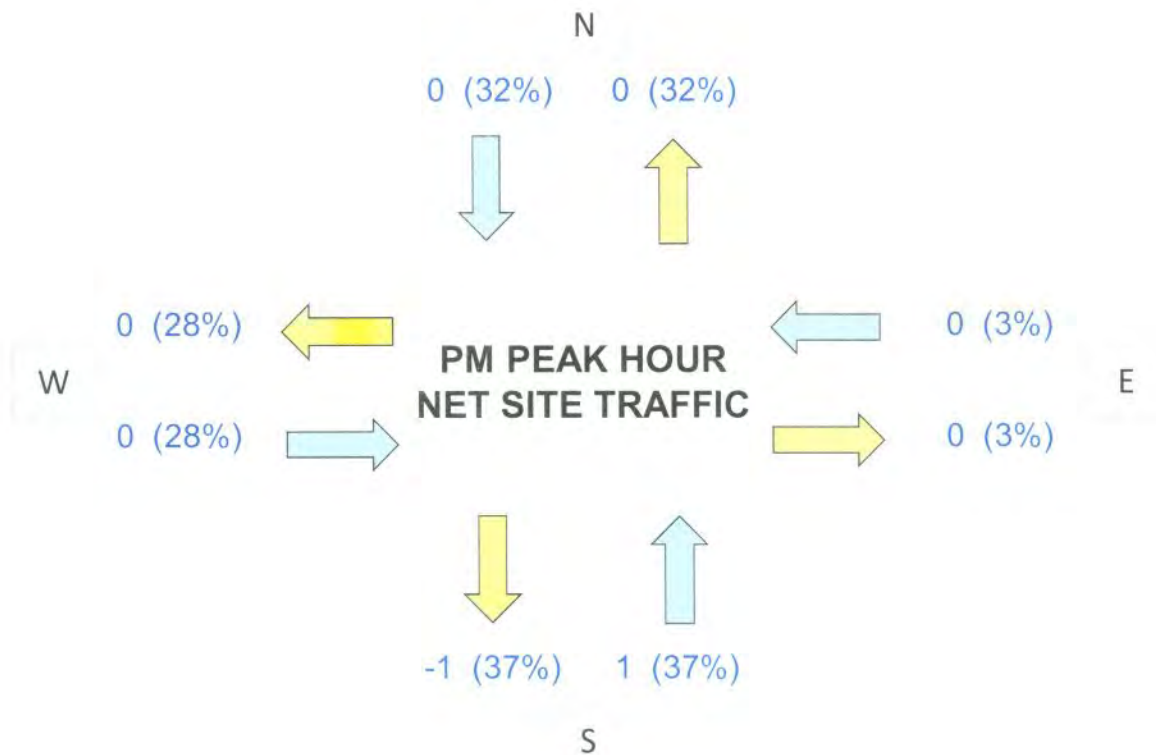


TABLE: A3-1

Shell Gas Station at 337 71st Street
Project Cardinal Distribution (PM Peak Hour)
(TAZ 605)

DIRECTION	DISTRIBUTION PERCENTAGES (%)			PM PEAK HOUR		
	MIAMI-DADE LRTP MODEL YEAR		DESIGN YEAR	IN	OUT	TOTAL
	2005	2035	2015			
NNE	12.02	16.87	13.64	0	0	0
ENE	0.00	6.18	2.06	0	0	0
ESE	0.00	2.10	0.70	0	0	0
SSE	10.28	28.89	16.48	0	0	0
SSW	25.80	10.04	20.55	1	-1	0
WSW	20.01	15.69	18.57	0	0	0
WNW	10.15	7.84	9.38	0	0	0
NNW	21.75	12.39	18.63	0	0	0
TOTAL	100.00	100.00	100.00	1	-1	0

Note:

Based on Miami-Dade Transportation Plan (to the Year 2035) Directional Trip Distribution Report, October 2009. Since the current data is only available for the model years 2005 and 2035, the eight (8) cardinal directions were interpolated to the design year of 2015.

TABLE: A3-2

PM PEAK HOUR	IN	OUT	TOTAL
VOLUME:	1	-1	0
PERCENT:	0.00%	0.00%	(Calculated)

DIRECTION	DISTRIBUTION %	INGRESS		EGRESS		TOTAL
		CALCULATED	USED	CALCULATED	USED	
NNE	13.64	0.136366667	0	-0.136366667	0	0
ENE	2.06	0.0206	0	-0.0206	0	0
ESE	0.70	0.007	0	-0.007	0	0
SSE	16.48	0.164833333	0	-0.164833333	0	0
SSW	20.55	0.205466667	1	-0.205466667	-1	0
WSW	18.57	0.1857	0	-0.1857	0	0
WNW	9.38	0.0938	0	-0.0938	0	0
NNW	18.63	0.1863	0	-0.1863	0	0
TOTAL	100.00	1.000066667	1	-1.000066667	-1	0



Miami-Dade 2035 Long Range Transportation Plan

Directional Trip Distribution Report

October 29, 2009

2035



Miami-Dade



Transportation Plan



Prepared by:



In association with:

Advanced Transportation Engineering Consultants

AECOM Consult

Charesse Chester and Associates

Citilabs

Metropolitan Center at Florida International University

Strategy Solutions



MIAMI-DADE 2005 DIRECTIONAL DISTRIBUTION SUMMARY

ORIGIN ZONE		CARDINAL DIRECTIONS										
County TAZ	Regional TAZ		NNE	ENE	ESE	SSE	SSW	WSW	WNW	NNW	TOTAL	
586	3286	TRIPS	18	0	0	6	152	109	122	117	524	
		PERCENT	3.44	0	0	1.15	29.01	20.8	23.28	22.33		
587	3287	TRIPS	84	0	0	22	540	348	383	445	1,822	
		PERCENT	4.61	0	0	1.21	29.64	19.1	21.02	24.42		
588	3288	TRIPS	158	12	0	121	485	329	380	416	1,901	
		PERCENT	8.31	0.63	0	6.37	25.51	17.31	19.99	21.88		
589	3289	TRIPS	667	0	0	850	1703	1707	1040	2013	7,980	
		PERCENT	8.36	0	0	10.65	21.34	21.39	13.03	25.23		
590	3290	TRIPS	126	15	0	80	460	464	453	539	2,137	
		PERCENT	5.9	0.7	0	3.74	21.53	21.71	21.2	25.22		
591	3291	TRIPS	82	0	0	25	541	343	324	412	1,727	
		PERCENT	4.75	0	0	1.45	31.33	19.86	18.76	23.86		
592	3292	TRIPS	114	0	0	45	609	620	358	688	2,434	
		PERCENT	4.68	0	0	1.85	25.02	25.47	14.71	28.27		
593	3293	TRIPS	546	53	0	410	1520	1748	1087	1883	7,247	
		PERCENT	7.53	0.73	0	5.66	20.97	24.12	15	25.98		
594	3294	TRIPS	399	21	0	289	867	744	714	994	4,028	
		PERCENT	9.91	0.52	0	7.17	21.52	18.47	17.73	24.68		
595	3295	TRIPS	96	0	0	40	455	341	289	460	1,681	
		PERCENT	5.71	0	0	2.38	27.07	20.29	17.19	27.36		
596	3296	TRIPS	556	0	0	503	374	257	340	633	2,663	
		PERCENT	20.88	0	0	18.89	14.04	9.65	12.77	23.77		
597	3297	TRIPS	331	0	0	703	1571	1594	1103	2346	7,648	
		PERCENT	4.33	0	0	9.19	20.54	20.84	14.42	30.67		
598	3298	TRIPS	653	232	0	908	1326	1161	927	1445	6,652	
		PERCENT	9.82	3.49	0	13.65	19.93	17.45	13.94	21.72		
599	3299	TRIPS	1293	721	0	2144	1590	1370	1238	1771	10,127	
		PERCENT	12.77	7.12	0	21.17	15.7	13.53	12.22	17.49		
600	3300	TRIPS	8	2	2	8	3	1	1	2	27	
		PERCENT	29.63	7.41	7.41	29.63	11.11	3.7	3.7	7.41		
601	3301	TRIPS	133	51	0	162	301	109	93	252	1,101	
		PERCENT	12.08	4.63	0	14.71	27.34	9.9	8.45	22.89		
602	3302	TRIPS	164	0	0	732	2089	1021	806	2452	7,264	
		PERCENT	2.26	0	0	10.08	28.76	14.06	11.1	33.76		
603	3303	TRIPS	87	0	0	233	3030	1677	943	2640	8,610	
		PERCENT	1.01	0	0	2.71	35.19	19.48	10.95	30.66		
604	3304	TRIPS	575	0	140	702	1185	531	298	775	4,206	
		PERCENT	13.67	0	3.33	16.69	28.17	12.62	7.09	18.43		
605	3305	TRIPS	718	0	0	614	1541	1195	606	1299	5,973	
		PERCENT	12.02	0	0	10.28	25.8	20.01	10.15	21.75		
606	3306	TRIPS	600	255	153	1420	763	1283	582	662	5,718	
		PERCENT	10.49	4.46	2.68	24.83	13.34	22.44	10.18	11.58		
607	3307	TRIPS	1119	1014	248	1222	1583	2338	2055	2064	11,643	
		PERCENT	9.61	8.71	2.13	10.5	13.6	20.08	17.65	17.73		
608	3308	TRIPS	847	151	0	1168	651	1355	680	798	5,650	
		PERCENT	14.99	2.67	0	20.67	11.52	23.98	12.04	14.12		
609	3309	TRIPS	47	0	0	0	2681	1530	1094	2305	7,657	
		PERCENT	0.61	0	0	0	35.01	19.98	14.29	30.1		
610	3310	TRIPS	658	0	0	0	5614	4005	1469	3095	14,841	
		PERCENT	4.43	0	0	0	37.83	26.99	9.9	20.85		
611	3311	TRIPS	348	0	0	355	1523	550	290	449	3,515	
		PERCENT	9.9	0	0	10.1	43.33	15.65	8.25	12.77		
612	3312	TRIPS	2984	1646	886	3098	3415	6258	3904	4282	26,473	
		PERCENT	11.27	6.22	3.35	11.7	12.9	23.64	14.75	16.17		
613	3313	TRIPS	1127	93	191	328	2025	2020	742	1010	7,536	
		PERCENT	14.95	1.23	2.53	4.35	26.87	26.8	9.85	13.4		
614	3314	TRIPS	472	0	0	0	1400	1260	470	929	4,531	
		PERCENT	10.42	0	0	0	30.9	27.81	10.37	20.5		
615	3315	TRIPS	827	0	0	0	2953	2328	1671	1616	9,395	
		PERCENT	8.8	0	0	0	31.43	24.78	17.79	17.2		
616	3316	TRIPS	690	0	0	0	1934	1696	989	1170	6,479	
		PERCENT	10.65	0	0	0	29.85	26.18	15.26	18.06		
617	3317	TRIPS	1927	151	221	1054	1611	2205	913	1788	9,870	
		PERCENT	19.52	1.53	2.24	10.68	16.32	22.34	9.25	18.12		
618	3318	TRIPS	1020	0	0	0	1909	2286	1028	1691	7,934	

MIAMI-DADE 2035 DIRECTIONAL DISTRIBUTION SUMMARY

ORIGIN ZONE			CARDINAL DIRECTIONS									TOTAL
			NNE	ENE	ESE	SSE	SSW	WSW	WNW	NNW		
579	3279	PERCENT	23.85	7.3	1.01	2.87	1.49	21.11	23	19.37	3,291	
		TRIPS	532	163	8	79	115	692	783	919		
580	3280	PERCENT	16.17	4.95	0.24	2.4	3.49	21.03	23.79	27.92	8,206	
		TRIPS	1565	353	7	140	241	1756	1724	2420		
581	3281	PERCENT	19.07	4.3	0.09	1.71	2.94	21.4	21.01	29.49	6,112	
		TRIPS	1582	369	6	155	122	1228	1101	1549		
582	3282	PERCENT	25.88	6.04	0.1	2.54	2	20.09	18.01	25.34	4,677	
		TRIPS	1489	313	5	86	43	815	795	1131		
583	3283	PERCENT	31.84	6.69	0.11	1.84	0.92	17.43	17	24.18	8,659	
		TRIPS	27	0	0	50	7618	714	116	134		
584	3284	PERCENT	0.31	0	0	0.58	87.98	8.25	1.34	1.55	2,046	
		TRIPS	102	25	0	168	465	513	341	432		
585	3285	PERCENT	4.99	1.22	0	8.21	22.73	25.07	16.67	21.11	6,672	
		TRIPS	128	0	0	40	2210	1956	960	1378		
586	3286	PERCENT	1.92	0	0	0.6	33.12	29.32	14.39	20.65	666	
		TRIPS	21	0	0	7	203	114	181	140		
587	3287	PERCENT	3.15	0	0	1.05	30.48	17.12	27.18	21.02	5,259	
		TRIPS	333	8	0	481	1246	730	1214	1247		
588	3288	PERCENT	6.33	0.15	0	9.15	23.69	13.88	23.08	23.71	3,818	
		TRIPS	484	0	0	330	563	687	820	934		
589	3289	PERCENT	12.68	0	0	8.64	14.75	17.99	21.48	24.46	12,579	
		TRIPS	663	130	0	634	3601	2876	2108	2567		
590	3290	PERCENT	5.27	1.03	0	5.04	28.63	22.86	16.76	20.41	3,189	
		TRIPS	128	0	0	36	744	735	615	931		
591	3291	PERCENT	4.01	0	0	1.13	23.33	23.05	19.29	29.19	3,049	
		TRIPS	169	0	0	39	666	620	629	926		
592	3292	PERCENT	5.54	0	0	1.28	21.84	20.33	20.63	30.37	3,443	
		TRIPS	373	28	0	225	722	768	594	733		
593	3293	PERCENT	10.83	0.81	0	6.53	20.97	22.31	17.25	21.29	10,138	
		TRIPS	1274	165	0	409	1725	1761	1910	2894		
594	3294	PERCENT	12.57	1.63	0	4.03	17.02	17.37	18.84	28.55	6,722	
		TRIPS	313	0	0	154	1651	1445	1140	2019		
595	3295	PERCENT	4.66	0	0	2.29	24.56	21.5	16.96	30.04	2,912	
		TRIPS	323	0	0	182	511	463	454	979		
596	3296	PERCENT	11.09	0	0	6.25	17.55	15.9	15.59	33.62	2,702	
		TRIPS	447	0	0	241	513	454	231	816		
597	3297	PERCENT	16.54	0	0	8.92	18.99	16.8	8.55	30.2	10,248	
		TRIPS	1052	288	0	937	2657	1612	1144	2558		
598	3298	PERCENT	10.27	2.81	0	9.14	25.93	15.73	11.16	24.96	8,362	
		TRIPS	944	427	0	1836	1706	843	790	1816		
599	3299	PERCENT	11.29	5.11	0	21.96	20.4	10.08	9.45	21.72	12,477	
		TRIPS	2261	155	686	2688	1346	1293	1573	2475		
600	3300	PERCENT	18.12	1.24	5.5	21.54	10.79	10.36	12.61	19.84	43	
		TRIPS	4	0	0	14	11	1	7	6		
601	3301	PERCENT	9.3	0	0	32.56	25.58	2.33	16.28	13.95	1,595	
		TRIPS	32	0	0	175	546	337	122	383		
602	3302	PERCENT	2.01	0	0	10.97	34.23	21.13	7.65	24.01	9,536	
		TRIPS	77	0	0	153	2603	1614	2059	3030		
603	3303	PERCENT	0.81	0	0	1.6	27.3	16.93	21.59	31.77	10,940	
		TRIPS	902	0	387	2011	2886	1605	846	2303		
604	3304	PERCENT	8.24	0	3.54	18.38	26.38	14.67	7.73	21.05	5,370	
		TRIPS	442	0	0	491	1442	1094	412	1489		
605	3305	PERCENT	8.23	0	0	9.14	26.85	20.37	7.67	27.73	7,860	
		TRIPS	1326	486	165	2271	789	1233	616	974		
606	3306	PERCENT	16.87	6.18	2.1	28.89	10.04	15.69	7.84	12.39	7,591	
		TRIPS	1041	921	494	1571	879	1122	754	809		
607	3307	PERCENT	13.71	12.13	6.51	20.7	11.58	14.78	9.93	10.66	14,893	
		TRIPS	1057	373	0	1686	1887	4368	2617	2905		
608	3308	PERCENT	7.1	2.5	0	11.32	12.67	29.33	17.57	19.51	7,710	
		TRIPS	34	0	0	0	2550	2183	1128	1815		
609	3309	PERCENT	0.44	0	0	0	33.07	28.31	14.63	23.54	10,327	
		TRIPS	537	0	0	0	2667	1814	1428	3881		
610	3310	PERCENT	5.2	0	0	0	25.83	17.57	13.83	37.58	19,403	
		TRIPS	1200	0	0	2501	7066	4049	1585	3002		
611	3311	PERCENT	6.18	0	0	12.89	36.42	20.87	8.17	15.47	4,545	
		TRIPS	528	756	156	728	482	873	399	623		
612	3312	PERCENT	11.62	16.63	3.43	16.02	10.61	19.21	8.78	13.71	32,925	
		TRIPS	3289	672	288	1205	6851	9632	4777	6211		

Appendix 3: Signal Timing, Background Growth & Adjustment Factors



MIAMI-DADE ATMS SIGNAL DATA SHEET

Signal Asset ID: 2637
 Signal Location: ABBOTT AVE Y 71 ST
 Analysis Period: AM / PM (Circle One)
 Local Time of Day Schedule: 14 Plan
 Local Time of Day Function: - Setting (Blank or Number#)

Signal Settings: -
 (i.e. Blank, Plan #1 – Phase Bank 1, Max 1)

Cycle Length: 90 seconds
 Offset: 53 seconds

PHASE:	Φ1	Φ2	Φ3	
				
WALK	4	0	4	
DON'TWALK	18	0	18	
MIN INITIAL	4	5	4	
VEH EXT	1	2	1	
GREEN	47	5	25	
YELLOW	4	3	4	
RED	1	0	1	
SPLIT	52	8	30	

TOD Schedule Report
for 2637: Abbott Av&71 St

Print Date:
4/29/2013

Print Time:
12:36 PM

Asset	Intersection	TOD Schedule	Op Mode	Plan #	Cycle	Offset	TOD Setting	Active PhaseBank	Active Maximum
2637	Abbott Av&71 St	DOW-2		N/A	0	0	N/A	0	Max 0

Splits

PH 1	PH 2	PH 3	PH 4	PH 5	PH 6	PH 7	PH 8
-	SBT	-	WBT	-	-	WBL	EBT
0	0	0	0	0	0	0	0



Active Phase Bank: Phase Bank 1

Phase	Walk	Don't Walk	Min Initial	Veh Ext	Max Limit	Max 2	Yellow	Red
Phase Bank								
	-1 2 3	-1 2 3	-1 2 3	-1 2 3	1 2 3	1 2 3		
1 -	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0	0
2 SBT	4 - 4 - 4	18 - 18 - 18	4 - 4 - 4	1 - 1 - 1	35 - 35 - 35	0 - 48 - 48	4	1
3 -	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0	0
4 WBT	4 - 4 - 4	18 - 18 - 18	4 - 4 - 4	1 - 1 - 1	17 - 17 - 17	33 - 48 - 48	4	1
5 -	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0	0
6 -	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0	0
7 WBL	0 - 0 - 0	0 - 0 - 0	5 - 5 - 0	2 - 2 - 0	5 - 7 - 0	12 - 12 - 0	3	0
8 EBT	4 - 4 - 4	18 - 18 - 18	4 - 4 - 4	1 - 1 - 1	17 - 17 - 17	33 - 48 - 48	4	1

Last In Service Date: unknown

Permitted Phases

12345678
Default -2-4-78
External Permit 0 -2-4-6-8
External Permit 1 -2-4-6-8
External Permit 2 -2-4-6-8

Current TOD Schedule		Green Time										Ring Offset	Offset
		Plan	Cycle	1	2	3	4	5	6	7	8		
				-	SBT	-	WBT	-	-	WBL	EBT		
	1		90	0	48	0	32	0	0	0	32	0	76
	2		80	0	38	0	32	0	0	5	24	0	45
	3		90	0	43	0	37	0	0	0	37	0	3
	4		80	0	38	0	32	0	0	0	32	0	65
	5		120	0	73	0	37	0	0	0	37	0	109
	6		70	0	31	0	29	0	0	0	29	0	20
	7		70	0	31	0	29	0	0	0	29	0	20
	8		70	0	35	0	25	0	0	0	25	0	20
	9		90	0	40	0	40	0	0	5	32	0	17
	10		70	0	35	0	25	0	0	0	25	0	21
	11		70	0	31	0	29	0	0	0	29	0	20
	12		100	0	42	0	48	0	0	0	48	0	29
	13		70	0	31	0	29	0	0	0	29	0	23
AM/PM	14		90	0	47	0	33	0	0	5	25	0	53
	20		70	0	31	0	29	0	0	0	29	0	20
	22		80	0	38	0	32	0	0	0	32	0	54
	23		80	0	38	0	32	0	0	0	32	0	54

Local TOD Schedule		
Time	Plan	DOW
0000	8	Su M T W Th F S
0600	10	Su M T W Th F
0700	1	M T W Th F
0800	10	Su
1000	14	Su
1630	12	Su
1830	10	Su
1930	10	M T W Th F
2100	13	Su M T W Th F S

Current Time of Day Function			
Time	Function	Settings *	Day of Week
0000	TOD OUTPUTS	---5---	Su M T W Th F S
0700	TOD OUTPUTS	-----	M T W Th F
1930	TOD OUTPUTS	---5---	M T W Th F

Local Time of Day Function			
Time	Function	Settings *	Day of Week
0000	TOD OUTPUTS	---5---	Su M T W Th F S
0700	TOD OUTPUTS	-----	M T W Th F
1000	TOD OUTPUTS	-----	Su
1830	TOD OUTPUTS	---5---	Su
1930	TOD OUTPUTS	---5---	M T W Th F

* Settings	
Blank	- FREE - Phase Bank 1, Max 1
Blank	- Plan - Phase Bank 1, Max 2
1	- Phase Bank 2, Max 1
2	- Phase Bank 2, Max 2
3	- Phase Bank 3, Max 1
4	- Phase Bank 3, Max 2
5	- EXTERNAL PERMIT 1
6	- EXTERNAL PERMIT 2
7	- X-PED OMIT
8	- TBA

No Calendar Defined/Enabled

MIAMI-DADE ATMS SIGNAL DATA SHEET

Signal Asset ID: 3544
 Signal Location: HARDING AVE & 71 ST
 Analysis Period: AM / PM (Circle One)
 Local Time of Day Schedule: 1 Plan
 Local Time of Day Function: - Setting (Blank or Number#)

Signal Settings: -
 (i.e. Blank, Plan #1 – Phase Bank 1, Max 1)

Cycle Length: 89.8 seconds
 Offset: 41 seconds

PHASE:	Φ1	Φ2	Φ3	
				
WALK	<u>0</u>	<u>7</u>	<u>7</u>	
DON'TWALK	<u>0</u>	<u>9</u>	<u>16</u>	
MIN INITIAL	<u>5</u>	<u>7</u>	<u>7</u>	
VEH EXT	<u>2</u>	<u>1</u>	<u>1</u>	
GREEN	<u>7</u>	<u>34</u>	<u>36</u>	
YELLOW	<u>3</u>	<u>4</u>	<u>4</u>	
RED	<u>0</u>	<u>0.8</u>	<u>1</u>	
SPLIT	<u>10</u>	<u>38.8</u>	<u>41</u>	

TOD Schedule Report
for 3544: Harding Av&71 St

Print Date:
4/29/2013

Print Time:
1:56 PM

<u>Asset</u>	<u>Intersection</u>	<u>TOD</u> <u>Schedule</u>	<u>Op Mode</u>	<u>Plan #</u>	<u>Cycle</u>	<u>Offset</u>	<u>TOD</u> <u>Setting</u>	<u>Active</u> <u>PhaseBank</u>	<u>Active</u> <u>Maximum</u>
3544	Harding Av&71 St	DOW-2		N/A	0	0	N/A	0	Max 0

Splits

<u>PH 1</u>	<u>PH 2</u>	<u>PH 3</u>	<u>PH 4</u>	<u>PH 5</u>	<u>PH 6</u>	<u>PH 7</u>	<u>PH 8</u>
EBL	WBT	-	NBT	WBL	EBT	-	SBT
0	0	0	0	0	0	0	0
							

Active Phase Bank: Phase Bank 1

<u>Phase</u>	<u>Walk</u>	<u>Don't Walk</u>	<u>Min Initial</u>	<u>Veh Ext</u>	<u>Max Limit</u>	<u>Max 2</u>	<u>Yellow</u>	<u>Red</u>
<u>Phase Bank</u>								
	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3		
1 EBL	0 - 0 - 0	0 - 0 - 0	5 - 5 - 5	2 - 2 - 2	5 - 12 - 5	12 - 0 - 12	3	0
2 WBT	7 - 7 - 7	9 - 6 - 9	7 - 7 - 7	1 - 2.5 - 1	40 - 50 - 50	0 - 0 - 0	4	0.8
3 -	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0	0
4 NBT	7 - 7 - 7	16 - 16 - 16	7 - 7 - 7	1 - 2.5 - 1	21 - 30 - 30	43 - 0 - 0	4	1
5 WBL	0 - 0 - 0	0 - 0 - 0	5 - 5 - 5	2 - 2 - 2	5 - 12 - 5	12 - 0 - 12	3	0
6 EBT	7 - 7 - 7	9 - 6 - 9	7 - 7 - 7	1 - 2.5 - 1	40 - 50 - 50	0 - 0 - 0	4	0.8
7 -	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0	0
8 SBT	7 - 7 - 7	16 - 16 - 16	7 - 7 - 7	1 - 2.5 - 1	21 - 30 - 30	43 - 0 - 0	4	1

Last In Service Date: 03/17/2010 16:48

Permitted Phases

12345678

Default 12-456-8
External Permit 0 -2-4-6-8
External Permit 1 -2-4-6-8
External Permit 2 -2-4-6-8

		Green Time										Ring Offset	Offset
Current TOD Schedule	Plan	Cycle	1 EBL	2 WBT	3 -	4 NBT	5 WBL	6 EBT	7 -	8 SBT			
AM/PM	1	90	7	34	0	36	7	34	0	36	0	41	
	2	80	5	39	0	23	5	39	0	23	0	47	
	3	90	5	31	0	41	5	31	0	41	0	26	
	4	80	**	47	0	23	**	47	0	23	0	47	
	5	120	5	79	0	23	5	79	0	23	0	6	
	6	70	5	29	0	23	5	29	0	23	0	5	
	7	70	5	29	0	23	5	29	0	23	0	5	
	8	70	5	29	0	23	5	29	0	23	0	61	
	9	90	5	49	0	23	5	49	0	23	0	12	
	10	70	5	29	0	23	5	29	0	23	0	60	
	11	70	5	29	0	23	5	29	0	23	0	5	
	12	100	5	39	0	43	5	39	0	43	0	48	
	13	70	5	29	0	23	5	29	0	23	0	5	
	14	90	5	31	0	41	5	31	0	41	0	81	
	20	70	5	29	0	23	5	29	0	23	0	5	
	22	80	5	30	0	32	5	30	0	32	0	19	
	23	80	5	30	0	32	5	30	0	32	0	19	

Local TOD Schedule		
Time	Plan	DOW
0000	13	Su M T W Th F S
0030	8	M T W Th F
0100	8	Su
0600	10	M T W Th F
0700	1	M T W Th F
1000	14	Su
1830	10	Su
1930	10	M T W Th F
2100	13	Su M T W Th F S

Current Time of Day Function			
Time	Function	Settings *	Day of Week
0000	TOD OUTPUTS	--5---	Su M T W Th F S
0600	TOD OUTPUTS	-----	M T W Th F
2100	TOD OUTPUTS	--5---	Su M T W Th F S

Local Time of Day Function			
Time	Function	Settings *	Day of Week
0000	TOD OUTPUTS	--5---	Su M T W Th F S
0600	TOD OUTPUTS	-----	M T W Th F
1000	TOD OUTPUTS	-----	Su
2100	TOD OUTPUTS	--5---	Su M T W Th F S

* Settings
Blank - FREE - Phase Bank 1, Max 1
Blank - Plan - Phase Bank 1, Max 2
1 - Phase Bank 2, Max 1
2 - Phase Bank 2, Max 2
3 - Phase Bank 3, Max 1
4 - Phase Bank 3, Max 2
5 - EXTERNAL PERMIT 1
6 - EXTERNAL PERMIT 2
7 - X-PED OMIT
8 - TBA

No Calendar Defined/Enabled

MIAMI-DADE ATMS SIGNAL DATA SHEET

Signal Asset ID: 2638
 Signal Location: ABBOTT AVE X 72 ST
 Analysis Period: AM / PM (Circle One)
 Local Time of Day Schedule: 1 Plan
 Local Time of Day Function: - Setting (Blank or Number#)

Signal Settings: -
 (i.e. Blank, Plan #1 – Phase Bank 1, Max 1)

Cycle Length: 90.1 seconds
 Offset: 82 seconds

PHASE:	$\Phi 1$	$\Phi 2$		
	↓	← →		
WALK	5	5		
DON'TWALK	15	20		
MIN INITIAL	5	7		
VEH EXT	1	2		
GREEN	54	26		
YELLOW	4	4		
RED	1.1	1		
SPLIT	59.1	31		

TOD Schedule Report
for 2638: Abbott Av&72 St

Print Date:
4/29/2013

Print Time:
12:36 PM

Asset	Intersection	TOD Schedule	Op Mode	Plan #	Cycle	Offset	TOD Setting	Active PhaseBank	Active Maximum
2638	Abbott Av&72 St	DOW-2		N/A	0	0	N/A	0	Max 0

Splits

PH 1	PH 2	PH 3	PH 4	PH 5	PH 6	PH 7	PH 8
-	SBT	-	WBT	-	-	-	EBT
0	0	0	0	0	0	0	0



Active Phase Bank: Phase Bank 1

Phase	Walk	Don't Walk	Min Initial	Veh Ext	Max Limit	Max 2	Yellow	Red
Phase Bank								
	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	
1 -	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0	0
2 SBT	5 - 5 - 5	15 - 15 - 15	5 - 5 - 5	1 - 1 - 1	38 - 38 - 38	0 - 0 - 0	4	1.1
3 -	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0	0
4 WBT	5 - 5 - 5	20 - 20 - 20	7 - 7 - 7	2 - 2 - 2	22 - 22 - 22	30 - 30 - 30	4	1
5 -	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0	0
6 -	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0	0
7 -	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0	0
8 EBT	5 - 5 - 5	20 - 20 - 20	7 - 7 - 7	2 - 2 - 2	22 - 22 - 22	30 - 30 - 30	4	1

Last In Service Date: unknown

Permitted Phases

12345678

Default -2-4-8
 External Permit 0 -----
 External Permit 1 -----
 External Permit 2 -----

		Green Time										
Current		1	2	3	4	5	6	7	8			
TOD Schedule	Plan	Cycle	-	SBT	-	WBT	-	-	-	EBT	Ring Offset	Offset
AM/PM	1	90	0	54	0	26	0	0	0	26	0	82
	2	80	0	44	0	26	0	0	0	26	0	51
	3	90	0	54	0	26	0	0	0	26	0	11
	4	80	0	44	0	26	0	0	0	26	0	68
	5	120	0	84	0	26	0	0	0	26	0	0
	6	70	0	34	0	26	0	0	0	26	0	22
	7	70	0	34	0	26	0	0	0	26	0	22
	8	70	0	34	0	26	0	0	0	26	0	16
	9	90	0	54	0	26	0	0	0	26	0	26
	10	70	0	34	0	26	0	0	0	26	0	20
	11	70	0	34	0	26	0	0	0	26	0	22
	12	100	0	64	0	26	0	0	0	26	0	46
	13	70	0	34	0	26	0	0	0	26	0	23
	14	90	0	54	0	26	0	0	0	26	0	40
	20	70	0	34	0	26	0	0	0	26	0	22
	22	80	0	44	0	26	0	0	0	26	0	60
	23	80	0	44	0	26	0	0	0	26	0	60

Local TOD Schedule		
Time	Plan	DOW
0000	8	Su M T W Th F S
0600	10	Su M T W Th F
0700	1	M T W Th F
0800	10	Su M T W Th F S
1000	14	Su M T W Th F S
1630	12	Su M T W Th F S
1830	10	Su M T W Th F S
1930	10	M T W Th F
2100	13	Su M T W Th F S

Current Time of Day Function			
Time	Function	Settings *	Day of Week
0000	TOD OUTPUTS	-----	Su M T W Th F S

Local Time of Day Function			
Time	Function	Settings *	Day of Week
0000	TOD OUTPUTS	-----	Su M T W Th F S

* Settings
Blank - FREE - Phase Bank 1, Max 1
Blank - Plan - Phase Bank 1, Max 2
1 - Phase Bank 2, Max 1
2 - Phase Bank 2, Max 2
3 - Phase Bank 3, Max 1
4 - Phase Bank 3, Max 2
5 - EXTERNAL PERMIT 1
6 - EXTERNAL PERMIT 2
7 - X-PED OMIT
8 - TBA

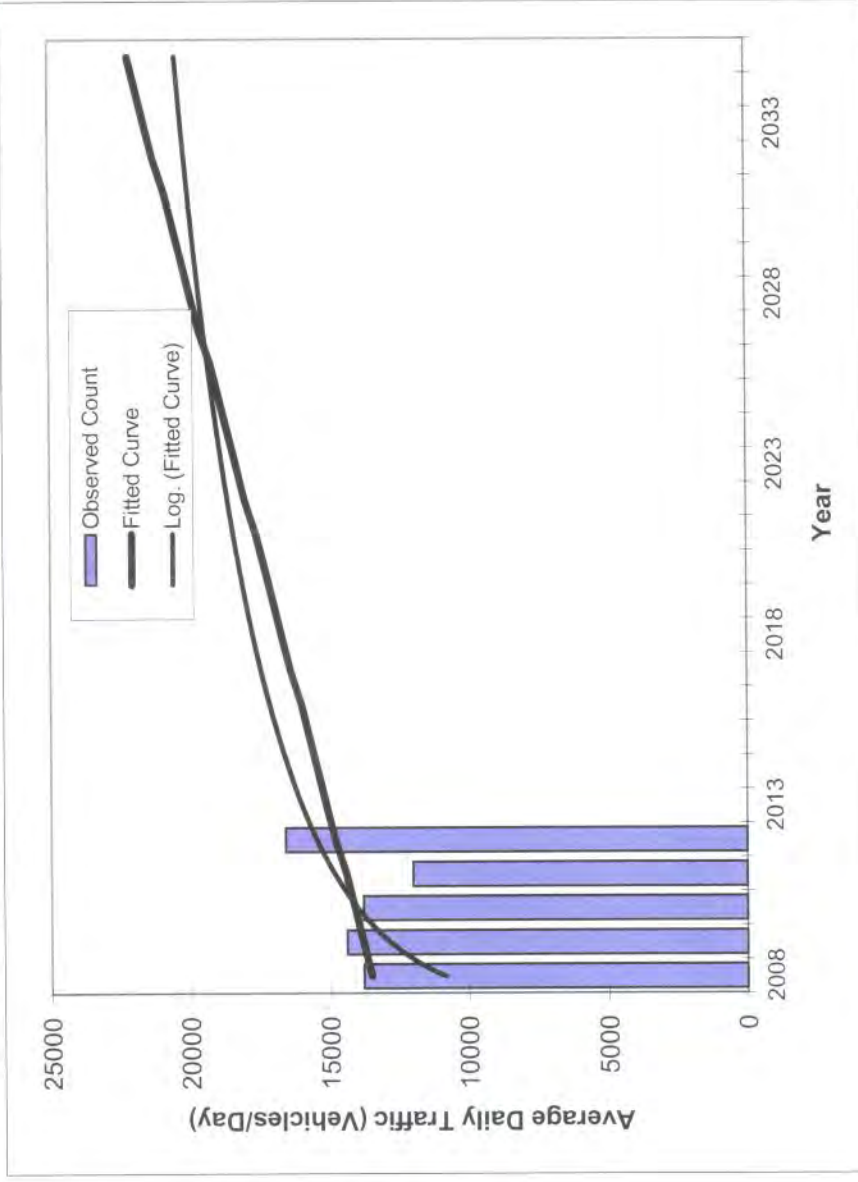
No Calendar Defined/Enabled

Traffic Trends - V2.0

SR 934/71 ST -- 200' W SR A1A/Harding Ave

PIN#	973215-1
Location	1

County:	Miami (87)
Station #:	5189
Highway:	SR 934/71 ST



**** Annual Trend Increase:** 320
Trend R-squared: 9.37%
Trend Annual Historic Growth Rate: 2.41%
Trend Growth Rate (2012 to Design Year): 2.03%
Printed: 14-Oct-13

Straight Line Growth Option

Year	Traffic (ADT/AADT)	
	Count*	Trend**
2008	13800	13500
2009	14400	13800
2010	13800	14100
2011	12000	14400
2012	16600	14800
2013 Opening Year Trend		
2013	N/A	15100
2014 Mid-Year Trend		
2014	N/A	15400
2015 Design Year Trend		
2015	N/A	15700
TRANPLAN Forecasts/Trends		

* Axle-Adjusted

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2012 HISTORICAL AADT REPORT

COUNTY: 87 - MIAMI-DADE

SITE: 5189 - SR 934/71 ST, 200' W SR A1A/HARDING AV

YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2012	16600 C	E 7100	W 9500	9.00	55.70	10.50
2011	12000 C	E 5900	W 6100	9.00	55.10	10.50
2010	13800 C	E 5900	W 7900	8.98	54.08	9.50
2009	14400 C	E 6500	W 7900	8.99	53.24	8.40
2008	13800 C	E 6200	W 7600	9.09	55.15	9.60
2007	13800 C	E 5900	W 7900	8.01	54.34	6.60
2006	12700 C	E 5800	W 6900	7.97	54.22	8.80
2005	15800 C	E 8100	W 7700	8.80	53.80	5.50
2004	21000 C	E 9500	W 11500	9.00	53.30	12.00
2003	17200 C	E 8000	W 9200	8.80	53.40	7.50
2002	18600 C	E 8100	W 10500	9.80	52.30	7.10
2001	17700 C	E 7800	W 9900	8.20	53.50	8.20
2000	11200 C	E 6200	W 5000	8.20	53.10	7.80
1999	12700 C	E 6300	W 6400	9.10	52.70	8.30
1998	18000 C	E 9300	W 8700	7.00	52.70	6.70
1997	13300 C	E 5700	W 7600	9.10	64.50	6.50

AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE

S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; X = UNKNOWN

*K FACTOR: STARTING WITH YEAR 2011 IS STANDARDK, PRIOR YEARS ARE K30 VALUES

2012 PEAK SEASON FACTOR CATEGORY REPORT - REPORT TYPE: ALL
 CATEGORY: 8701 MIAMI-DADE SOUTH

MOCF: 0.98
 PSCF

W	X	DATES	SF	PSCF
1		01/01/2012 - 01/07/2012	1.00	1.02
2		01/08/2012 - 01/14/2012	1.00	1.02
3		01/15/2012 - 01/21/2012	1.00	1.02
* 4		01/22/2012 - 01/28/2012	0.99	1.01
* 5		01/29/2012 - 02/04/2012	0.99	1.01
* 6		02/05/2012 - 02/11/2012	0.98	1.00
* 7		02/12/2012 - 02/18/2012	0.98	1.00
* 8		02/19/2012 - 02/25/2012	0.98	1.00
* 9		02/26/2012 - 03/03/2012	0.98	1.00
*10		03/04/2012 - 03/10/2012	0.97	0.99
*11		03/11/2012 - 03/17/2012	0.97	0.99
*12		03/18/2012 - 03/24/2012	0.98	1.00
*13		03/25/2012 - 03/31/2012	0.98	1.00
*14		04/01/2012 - 04/07/2012	0.98	1.00
*15		04/08/2012 - 04/14/2012	0.98	1.00
*16		04/15/2012 - 04/21/2012	0.99	1.01
17		04/22/2012 - 04/28/2012	0.99	1.01
18		04/29/2012 - 05/05/2012	0.99	1.01
19		05/06/2012 - 05/12/2012	1.00	1.02
20		05/13/2012 - 05/19/2012	1.00	1.02
21		05/20/2012 - 05/26/2012	1.00	1.02
22		05/27/2012 - 06/02/2012	1.00	1.02
23		06/03/2012 - 06/09/2012	1.00	1.02
24		06/10/2012 - 06/16/2012	1.00	1.02
25		06/17/2012 - 06/23/2012	1.00	1.02
26		06/24/2012 - 06/30/2012	1.01	1.03
27		07/01/2012 - 07/07/2012	1.01	1.03
28		07/08/2012 - 07/14/2012	1.02	1.04
29		07/15/2012 - 07/21/2012	1.02	1.04
30		07/22/2012 - 07/28/2012	1.02	1.04
31		07/29/2012 - 08/04/2012	1.02	1.04
32		08/05/2012 - 08/11/2012	1.03	1.05
33		08/12/2012 - 08/18/2012	1.03	1.05
34		08/19/2012 - 08/25/2012	1.02	1.04
35		08/26/2012 - 09/01/2012	1.02	1.04
36		09/02/2012 - 09/08/2012	1.01	1.03
37		09/09/2012 - 09/15/2012	1.01	1.03
38		09/16/2012 - 09/22/2012	1.00	1.02
39		09/23/2012 - 09/29/2012	1.00	1.02
40		09/30/2012 - 10/06/2012	1.00	1.02
41		10/07/2012 - 10/13/2012	1.00	1.02
42		10/14/2012 - 10/20/2012	1.00 SF	1.02
43		10/21/2012 - 10/27/2012	1.00	1.02
44		10/28/2012 - 11/03/2012	1.00	1.02
45		11/04/2012 - 11/10/2012	1.00	1.02
46		11/11/2012 - 11/17/2012	1.00	1.02
47		11/18/2012 - 11/24/2012	1.00	1.02
48		11/25/2012 - 12/01/2012	1.00	1.02
49		12/02/2012 - 12/08/2012	1.00	1.02
50		12/09/2012 - 12/15/2012	1.00	1.02
51		12/16/2012 - 12/22/2012	1.00	1.02
52		12/23/2012 - 12/29/2012	1.00	1.02
53		12/30/2012 - 12/31/2012	1.00	1.02

* PEAK SEASON

08-FEB-2013 12:30:11

830UPD [1,0,0,1] 6_8701_PKSEASON.TXT

Appendix 4: Traffic Counts (TMC's)



TABLE: A4

Shell Gas Station at 337 71st Street
AM PEAK HOUR INTERSECTION APPROACH VOLUMES

INTERSECTION NO.	1	2	3	4	5	6	7	8	9	10	11	12
	INTERSECTION NAME	APPROACH	MOVEMENT	AM PEAK HR COUNT	DATE OF COUNT	PHF	PSCF	AM PEAK SEASONALLY ADJUSTED (EXISTING)	BACKGROUND GROWTH @ 2.03% FOR PROJECT BUILD-OUT OF 2015 (2 YEAR GROWTH)	NET TRAFFIC W/O PROJECT	SITE TRAFFIC (VPH)	TOTAL TRAFFIC (VPH) (PROPOSED) (2015)
1	71 Street & Abbott Avenue	SOUTHBOUND	SBR	196	Tuesday, October 15, 2013	0.970	1.02	200	8	208	0	208
			SBT	2,240			1.02	2,285	94	2,379	0	2,379
			SBL	28			1.02	29	1	30	0	30
			TOTAL	2,464				2,513	103	2,616	0	2,616
		WESTBOUND	WBR	0			1.02	0	0	0	0	0
			WBT	163			1.02	166	7	173	0	173
			WBL	38			1.02	39	2	40	0	40
			TOTAL	201				205	8	213	0	213
		NORTHBOUND	NBR	0			1.02	0	0	0	0	0
			NBT	0			1.02	0	0	0	0	0
			NBL	0			1.02	0	0	0	0	0
			TOTAL	0				0	0	0	0	0
		EASTBOUND	EBR	107			1.02	109	4	114	0	114
			EBT	249			1.02	254	10	264	0	264
			EBL	0			1.02	0	0	0	0	0
			TOTAL	356				363	15	378	0	378
		TOTAL		3,021				3,081	126	3,208	0	3,208
2	71 Street & Harding Avenue	SOUTHBOUND	SBR	3	Tuesday, October 15, 2013	0.893	1.02	3	0	3	0	3
			SBT	45			1.02	46	2	48	0	48
			SBL	14			1.02	14	1	15	0	15
			TOTAL	62				63	3	66	0	66
		WESTBOUND	WBR	4			1.02	4	0	4	0	4
			WBT	175			1.02	179	7	186	0	186
			WBL	11			1.02	11	0	12	0	12
			TOTAL	190				194	8	202	0	202
		NORTHBOUND	NBR	24			1.02	24	1	25	0	25
			NBT	69			1.02	70	3	73	0	73
			NBL	31			1.02	32	1	33	0	33
			TOTAL	124				126	5	132	0	132
		EASTBOUND	EBR	17			1.02	17	1	18	0	18
			EBT	242			1.02	247	10	257	0	257
			EBL	22			1.02	22	1	23	0	23
			TOTAL	281				287	12	298	0	298
		TOTAL		657				670	27	698	0	698

TABLE: A4

Shell Gas Station at 337 71st Street
AM PEAK HOUR INTERSECTION APPROACH VOLUMES

INTERSECTION NO.	1	2	3	4	5	6	7	8	9	10	11	12	
	INTERSECTION NAME	APPROACH	MOVEMENT	AM PEAK HR COUNT	DATE OF COUNT	PHF	PSCF	AM PEAK SEASONALLY ADJUSTED (EXISTING)	BACKGROUND GROWTH @ 2.03% FOR PROJECT BUILD-OUT OF 2015 (2 YEAR GROWTH)	NET TRAFFIC W/O PROJECT	SITE TRAFFIC (VPH)	TOTAL TRAFFIC (VPH) (PROPOSED) (2015)	
3	72 Street & Abbott Avenue	SOUTHBOUND	SBR	68	Tuesday, October 15, 2013	0.951	1.02	69	3	72	0	72	
			SBT	2,414			1.02	2,462	101	2,563	0	2,563	
			SBL	39			1.02	40	2	41	0	41	
			TOTAL	2,521				2,571	105	2,677	0	2,677	
		WESTBOUND	WBR	0			1.02	0	0	0	0	0	0
			WBT	31			1.02	32	1	33	0	33	
			WBL	15			1.02	15	1	16	0	16	
			TOTAL	46				47	2	49	0	49	
		NORTHBOUND	NBR	0			1.02	0	0	0	0	0	0
			NBT	0			1.02	0	0	0	0	0	0
			NBL	0			1.02	0	0	0	0	0	0
			TOTAL	0				0	0	0	0	0	0
		EASTBOUND	EBR	50			1.02	51	2	53	0	53	
			EBT	116			1.02	118	5	123	0	123	
			EBL	0			1.02	0	0	0	0	0	
			TOTAL	166				169	7	176	0	176	
		TOTAL		2,733			2,788	114	2,902	0	2,902		
4	72 Street & Harding Avenue	SOUTHBOUND	SBR	5	Tuesday, October 15, 2013	0.848	1.02	5	0	5	0	5	
			SBT	7			1.02	7	0	7	0	7	
			SBL	2			1.02	2	0	2	0	2	
			TOTAL	14				14	1	15	0	15	
		WESTBOUND	WBR	12			1.02	12	1	13	0	13	
			WBT	33			1.02	34	1	35	0	35	
			WBL	3			1.02	3	0	3	0	3	
			TOTAL	48				49	2	51	0	51	
		NORTHBOUND	NBR	45			1.02	46	2	48	0	48	
			NBT	7			1.02	7	0	7	0	7	
			NBL	5			1.02	5	0	5	0	5	
			TOTAL	57				58	2	61	0	61	
		EASTBOUND	EBR	20			1.02	20	1	21	0	21	
			EBT	125			1.02	128	5	133	0	133	
			EBL	3			1.02	3	0	3	0	3	
			TOTAL	148				151	6	157	0	157	
		TOTAL		267			272	11	284	0	284		

Notes:

- 1 Intersection Name
- 2 Intersection Approach
- 3 Intersection Approach Movement
- 4 TMC data provided by RGA, Inc.
- 5 Date of Count
- 6 Peak Hour Factor
- 7 Peak Season Conversion Factor obtained from FDOT
- 8 Seasonally Adjusted TMC = Count * PSCF (These are the volumes utilized in the existing condition intersection LOS).
- 9 A 2.03 percent background growth was utilized with a project build-out of 2015.
- 10 Proposed Traffic w/o Project = Seasonally Adjusted TMC + Background
- 11 Site traffic assignment.
- 12 Total Traffic = Net Traffic + Site Traffic (These are the volumes utilized in the proposed intersection LOS analysis)

TABLE: A5

Shell Gas Station at 337 71st Street

PM PEAK HOUR INTERSECTION APPROACH VOLUMES

INTERSECTION NO.	1	2	3	4	5	6	7	8	9	10	11	12	
	INTERSECTION NAME	APPROACH	MOVEMENT	PM PEAK HR COUNT	DATE OF COUNT	PHF	PSCF	PM PEAK SEASONALLY ADJUSTED (EXISTING)	BACKGROUND GROWTH @ 2.03% FOR PROJECT BUILD-OUT OF 2015 (2 YEAR GROWTH)	NET TRAFFIC W/O PROJECT	SITE TRAFFIC (VPH)	TOTAL TRAFFIC (VPH) (PROPOSED) (2015)	
1	71 Street & Abbott Avenue	SOUTHBOUND	SBR	343	Tuesday, October 15, 2013	0.948	1.02	350	14	364	0	364	
			SBT	1,347			1.02	1,374	56	1,430	0	1,430	
			SBL	43			1.02	44	2	46	0	46	
			TOTAL	1,733				1,768	72	1,840	0	1,840	
		WESTBOUND	WBR	0			1.02	0	0	0	0	0	0
			WBT	314			1.02	320	13	333	0	333	
			WBL	44			1.02	45	2	47	0	47	
			TOTAL	358				365	15	380	0	380	
		NORTHBOUND	NBR	0			1.02	0	0	0	0	0	0
			NBT	0			1.02	0	0	0	0	0	0
			NBL	0			1.02	0	0	0	0	0	0
			TOTAL	0				0	0	0	0	0	0
		EASTBOUND	EBR	67			1.02	68	3	71	0	71	
			EBT	327			1.02	334	14	347	0	347	
			EBL	0			1.02	0	0	0	0	0	0
			TOTAL	394				402	16	418	0	418	
		TOTAL		2,485			2,535	104	2,639	0	2,639		
2	71 Street & Harding Avenue	SOUTHBOUND	SBR	19	Tuesday, October 15, 2013	0.983	1.02	19	1	20	0	20	
			SBT	20			1.02	20	1	21	0	21	
			SBL	2			1.02	2	0	2	0	2	
			TOTAL	41				42	2	44	0	44	
		WESTBOUND	WBR	12			1.02	12	1	13	0	13	
			WBT	245			1.02	250	10	260	0	260	
			WBL	21			1.02	21	1	22	0	22	
			TOTAL	278				284	12	295	0	295	
		NORTHBOUND	NBR	28			1.02	29	1	30	0	30	
			NBT	186			1.02	190	8	198	0	198	
			NBL	77			1.02	79	3	82	0	82	
			TOTAL	291				297	12	309	0	309	
		EASTBOUND	EBR	27			1.02	28	1	29	0	29	
			EBT	274			1.02	279	11	291	0	291	
			EBL	41			1.02	42	2	44	0	44	
			TOTAL	342				349	14	363	0	363	
		TOTAL		952			971	40	1,011	0	1,011		

TABLE: A5

Shell Gas Station at 337 71st Street

PM PEAK HOUR INTERSECTION APPROACH VOLUMES

INTERSECTION NO.	1	2	3	4	5	6	7	8	9	10	11	12			
	INTERSECTION NAME	APPROACH	MOVEMENT	PM PEAK HR COUNT	DATE OF COUNT	PHF	PSCF	PM PEAK SEASONALLY ADJUSTED (EXISTING)	BACKGROUND GROWTH @ 2.03% FOR PROJECT BUILD-OUT OF 2015 (2 YEAR GROWTH)	NET TRAFFIC W/O PROJECT	SITE TRAFFIC (VPH)	TOTAL TRAFFIC (VPH) (PROPOSED) (2015)			
3	72 Street & Abbott Avenue	SOUTHBOUND	SBR	83	Tuesday, October 15, 2013	0.952	1.02	85	3	88	0	88			
			SBT	1,617			1.02	1,649	68	1,717	0	1,717			
			SBL	23			1.02	23	1	24	0	24			
			TOTAL	1,723				1,757	72	1,830	0	1,830			
		WESTBOUND	WBR	0			1.02	0	0	0	0	0	0	0	0
			WBT	99			1.02	101	4	105	0	105	0	105	
			WBL	57			1.02	58	2	61	0	61	0	61	
			TOTAL	156				159	7	166	0	166			
		NORTHBOUND	NBR	0			1.02	0	0	0	0	0	0	0	0
			NBT	0			1.02	0	0	0	0	0	0	0	0
			NBL	0			1.02	0	0	0	0	0	0	0	0
			TOTAL	0				0	0	0	0	0	0	0	0
EASTBOUND	EBR	48	1.02	49	2	51	0	51	0	51					
	EBT	123	1.02	125	5	131	0	131	0	131					
	EBL	0	1.02	0	0	0	0	0	0	0	0				
	TOTAL	171		174	7	182	0	182							
		TOTAL		2,050			2,091	86	2,177	0	2,177				
4	72 Street & Harding Avenue	SOUTHBOUND	SBR	11	Tuesday, October 15, 2013	0.841	1.02	11	0	12	0	12			
			SBT	5			1.02	5	0	5	0	5			
			SBL	7			1.02	7	0	7	0	7			
			TOTAL	23				23	1	24	0	24			
		WESTBOUND	WBR	5			1.02	5	0	5	0	5	0	5	
			WBT	65			1.02	66	3	69	0	69	0	69	
			WBL	4			1.02	4	0	4	0	4	0	4	
			TOTAL	74				75	3	79	0	79			
		NORTHBOUND	NBR	170			1.02	173	7	181	0	181	0	181	
			NBT	15			1.02	15	1	16	0	16	0	16	
			NBL	71			1.02	72	3	75	0	75	0	75	
			TOTAL	256				261	11	272	0	272			
EASTBOUND	EBR	27	1.02	28	1	29	0	29	0	29					
	EBT	113	1.02	115	5	120	0	120	0	120					
	EBL	12	1.02	12	1	13	0	13	0	13					
	TOTAL	152		155	6	161	0	161							
		TOTAL		505			515	21	536	0	536				



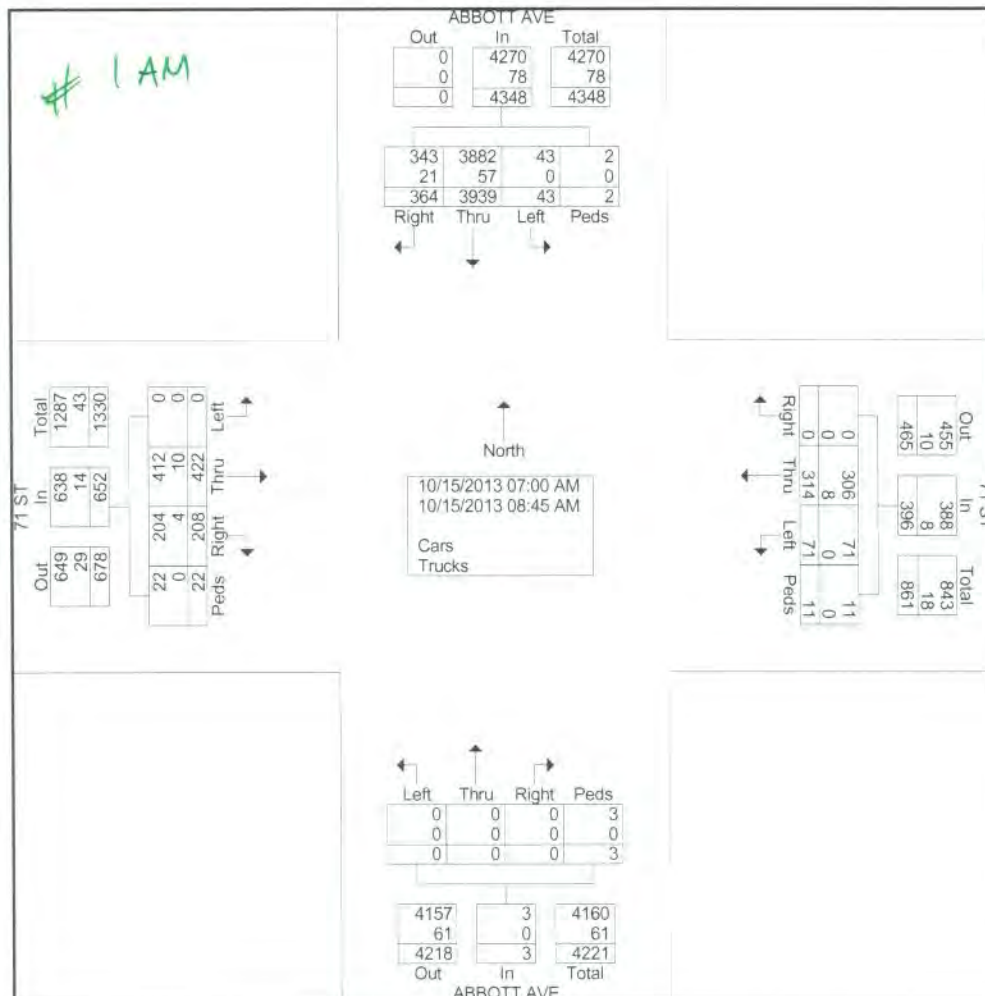
Richard Garcia & Associates, Inc.

8065 NW 98th Street
Hialeah Gardens, FL 33016
Phone: 305-362-0677
Fax: 305-675-6474

File Name : 71 St_Abbott Ave_AM
Site Code : 00000000
Start Date : 10/15/2013
Page No : 1

Groups Printed- Cars - Trucks

	ABBOTT AVE Southbound					71 ST Westbound					ABBOTT AVE Northbound					71 ST Eastbound					
Start Time	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Int Total
07:00 AM	36	327	4	0	367	0	29	9	2	40	0	0	0	0	0	29	30	0	6	65	472
07:15 AM	44	364	3	0	411	0	48	11	1	60	0	0	0	1	1	24	54	0	4	82	554
07:30 AM	42	505	3	0	550	0	41	8	1	50	0	0	0	0	0	23	40	0	3	66	666
07:45 AM	46	503	5	0	554	0	33	5	2	40	0	0	0	0	0	25	49	0	1	75	669
Total	168	1699	15	0	1882	0	151	33	6	190	0	0	0	1	1	101	173	0	14	288	2361
08:00 AM	50	546	9	1	606	0	36	10	1	47	0	0	0	1	1	29	81	0	2	112	766
08:15 AM	55	566	6	0	627	0	46	9	2	57	0	0	0	0	0	33	63	0	3	99	783
08:30 AM	47	548	8	1	604	0	41	12	1	54	0	0	0	0	0	21	57	0	2	80	738
08:45 AM	44	580	5	0	629	0	40	7	1	48	0	0	0	1	1	24	48	0	1	73	751
Total	196	2240	28	2	2466	0	163	38	5	206	0	0	0	2	2	107	249	0	8	364	3038
Grand Total	364	3939	43	2	4348	0	314	71	11	396	0	0	0	3	3	208	422	0	22	652	5399
Apprch %	8.4	90.6	1	0		0	79.3	17.9	2.8		0	0	0	100		31.9	64.7	0	3.4		
Total %	6.7	73	0.8	0	80.5	0	5.8	1.3	0.2	7.3	0	0	0	0.1	0.1	3.9	7.8	0	0.4	12.1	
Cars	343	3882																			
% Cars	94.2	98.6	100	100	98.2	0	97.5	100	100	98	0	0	0	100	100	98.1	97.6	0	100	97.9	98.1
Trucks	21	57	0	0	78	0	8	0	0	8	0	0	0	0	0	4	10	0	0	14	100
% Trucks	5.8	1.4	0	0	1.8	0	2.5	0	0	2	0	0	0	0	0	1.9	2.4	0	0	2.1	1.9



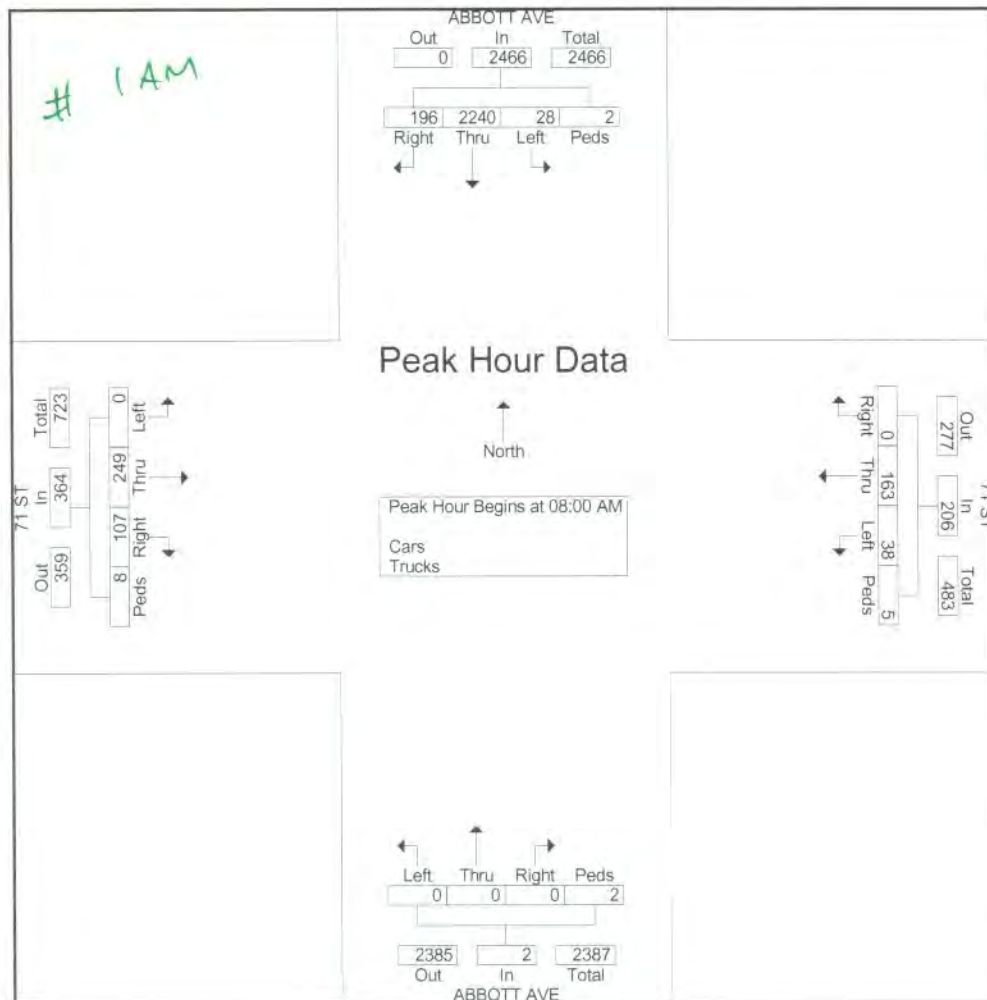


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File Name : 71 St_Abbott Ave_AM
Site Code : 00000000
Start Date : 10/15/2013
Page No : 2

	ABBOTT AVE Southbound					71 ST Westbound					ABBOTT AVE Northbound					71 ST Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	50	546	9	1	606	0	36	10	1	47	0	0	0	1	1	29	81	0	2	112	766
08:15 AM	55	566	6	0	627	0	46	9	2	57	0	0	0	0	0	33	63	0	3	99	783
08:30 AM	47	548	8	1	604	0	41	12	1	54	0	0	0	0	0	21	57	0	2	80	738
08:45 AM	44	580	5	0	629	0	40	7	1	48	0	0	0	1	1	24	48	0	1	73	751
Total Volume	196	2240	28	2	2466	0	163	38	5	206	0	0	0	2	2	107	249	0	8	364	3038
% App. Total	7.9	90.8	1.1	0.1		0	79.1	18.4	2.4		0	0	0	100		29.4	68.4	0	2.2		
PHF	.891	.966	.778	.500	.980	.000	.886	.792	.625	.904	.000	.000	.000	.500	.500	.811	.769	.000	.667	.813	.970





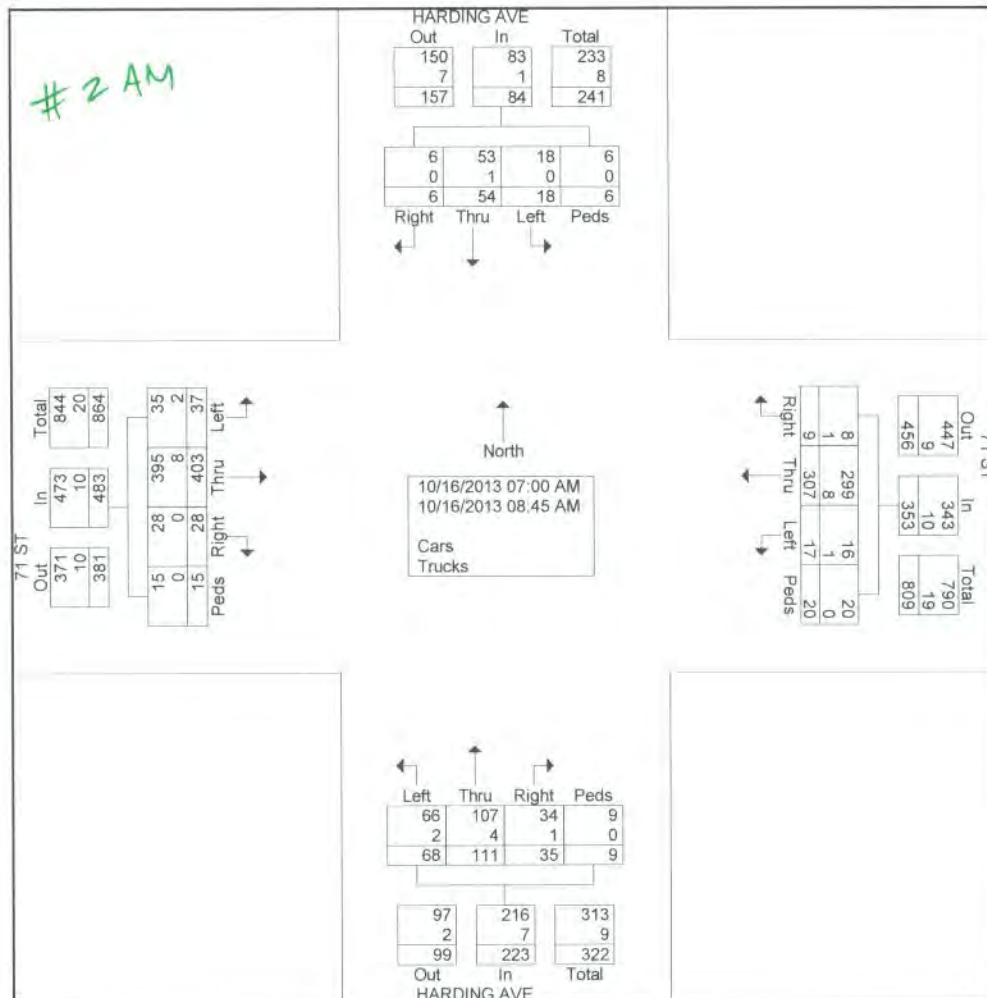
Richard Garcia & Associates, Inc.

8065 NW 98th Street
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Phone: 305-362-0677
Fax: 305-675-6474

File Name : Harding Ave _ 71 St _ AM
Site Code : 00000000
Start Date : 10/16/2013
Page No : 1

Groups Printed- Cars - Trucks

	HARDING AVE Southbound					71 ST Westbound					HARDING AVE Northbound					71 ST Eastbound					
Start Time	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Int. Total
07:00 AM	1	1	3	2	7	1	24	3	3	31	2	4	9	4	19	3	29	3	2	37	94
07:15 AM	0	4	0	0	4	0	43	2	0	45	2	12	6	0	20	4	43	7	2	56	125
07:30 AM	1	2	0	4	7	0	37	0	9	46	1	12	11	5	29	0	41	1	4	46	128
07:45 AM	1	2	1	0	4	4	28	1	3	36	6	14	11	0	31	4	48	4	1	57	128
Total	3	9	4	6	22	5	132	6	15	158	11	42	37	9	99	11	161	15	9	196	475
08:00 AM	3	9	6	0	18	1	36	1	5	43	3	22	8	0	33	5	81	6	1	93	187
08:15 AM	0	14	2	0	16	1	50	4	0	55	9	20	8	0	37	4	60	6	2	72	180
08:30 AM	0	13	4	0	17	1	47	3	0	51	6	16	8	0	30	4	56	6	1	67	165
08:45 AM	0	9	2	0	11	1	42	3	0	46	6	11	7	0	24	4	45	4	2	55	136
Total	3	45	14	0	62	4	175	11	5	195	24	69	31	0	124	17	242	22	6	287	668
Grand Total	6	54	18	6	84	9	307	17	20	353	35	111	68	9	223	28	403	37	15	483	1143
Apprch %	7.1	64.3	21.4	7.1		2.5	87	4.8	5.7		15.7	49.8	30.5	4		5.8	83.4	7.7	3.1		
Total %	0.5	4.7	1.6	0.5	7.3	0.8	26.9	1.5	1.7	30.9	3.1	9.7	5.9	0.8	19.5	2.4	35.3	3.2	1.3	42.3	
Cars	6	53	18	6	83	8	299	16	20	343	34	107	66	9	216	28	395	35	15	473	1115
% Cars	100	98.1	100	100	98.8	88.9	97.4	94.1	100	97.2	97.1	96.4	97.1	100	96.9	100	98	94.6	100	97.9	97.6
Trucks	0	1	0	0	1	1	8	1	0	10	1	4	2	0	7	0	8	2	0	10	28
% Trucks	0	1.9	0	0	1.2	11.1	2.6	5.9	0	2.8	2.9	3.6	2.9	0	3.1	0	2	5.4	0	2.1	2.4



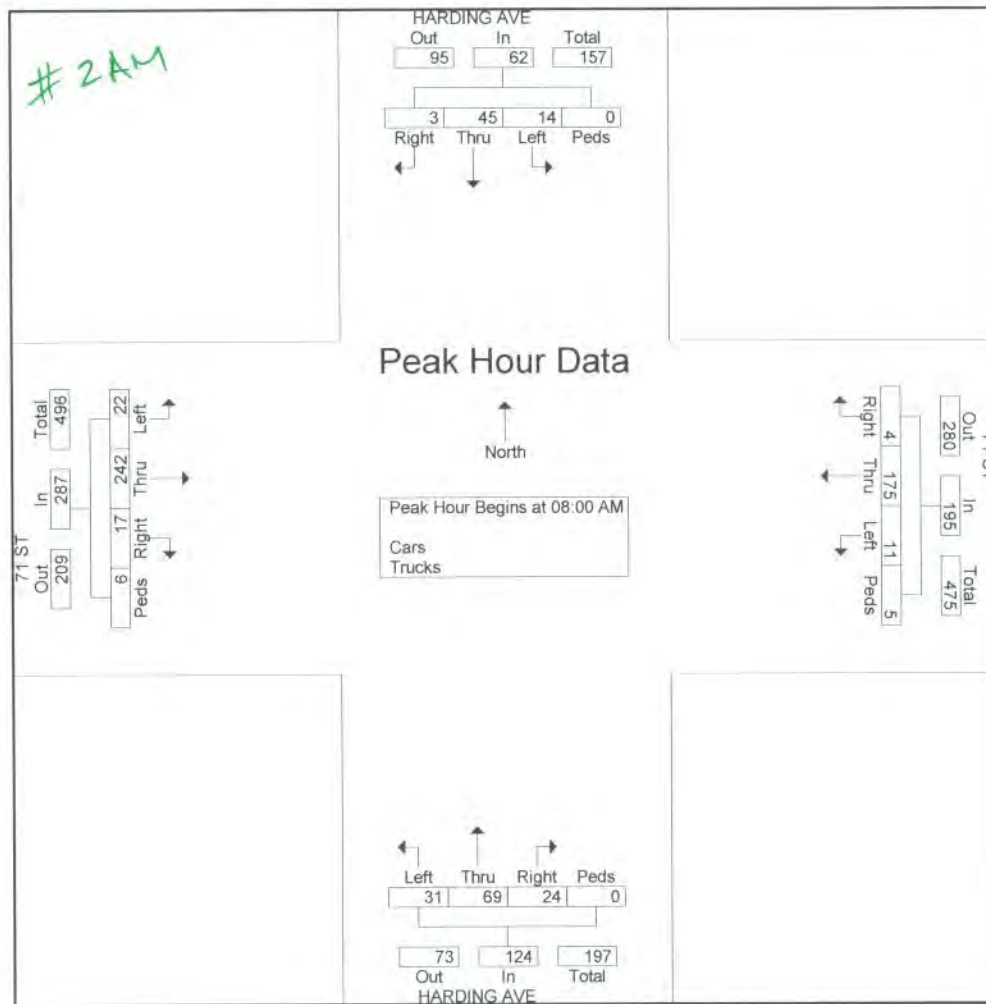


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File Name : Harding Ave _ 71 St _ AM
Site Code : 00000000
Start Date : 10/16/2013
Page No : 2

	HARDING AVE Southbound					71 ST Westbound					HARDING AVE Northbound					71 ST Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	3	9	6	0	18	1	36	1	5	43	3	22	8	0	33	5	81	6	1	93	187
08:15 AM	0	14	2	0	16	1	50	4	0	55	9	20	8	0	37	4	60	6	2	72	180
08:30 AM	0	13	4	0	17	1	47	3	0	51	6	16	8	0	30	4	56	6	1	67	165
08:45 AM	0	9	2	0	11	1	42	3	0	46	6	11	7	0	24	4	45	4	2	55	136
Total Volume	3	45	14	0	62	4	175	11	5	195	24	69	31	0	124	17	242	22	6	287	668
% App. Total	4.8	72.6	22.6	0		2.1	89.7	5.6	2.6		19.4	55.6	25	0		5.9	84.3	7.7	2.1		
PHF	.250	.804	.583	.000	.861	1.00	.875	.688	.250	.886	.667	.784	.969	.000	.838	.850	.747	.917	.750	.772	.893





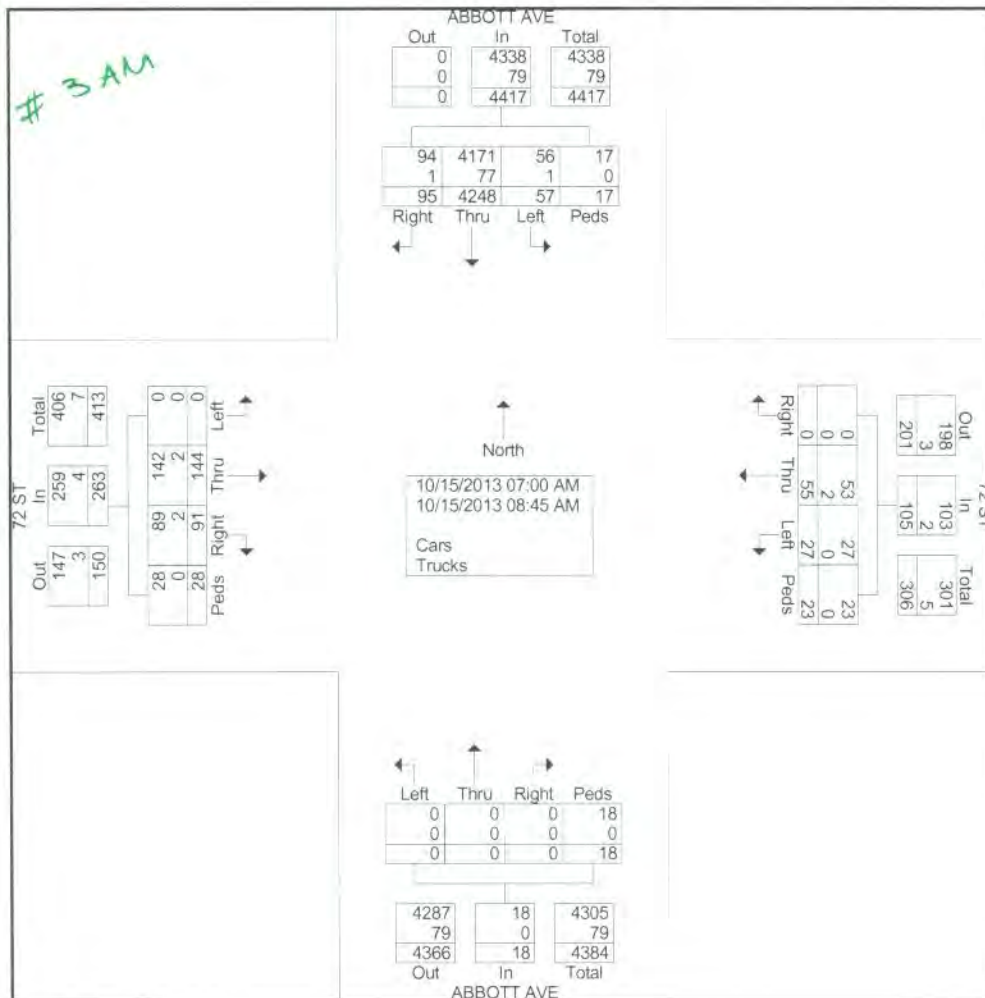
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File Name : 72 St_Abbott Ave_AM
Site Code : 00000000
Start Date : 10/15/2013
Page No : 1

Groups Printed- Cars - Trucks

	ABBOTT AVE Southbound					72 ST Westbound					ABBOTT AVE Northbound					72 ST Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	3	353	4	1	361	0	5	4	3	12	0	0	0	0	0	7	1	0	3	11	384
07:15 AM	9	406	2	1	418	0	5	0	0	5	0	0	0	2	2	8	8	0	1	17	442
07:30 AM	7	539	6	0	552	0	8	4	2	14	0	0	0	2	2	13	13	0	5	31	599
07:45 AM	8	536	6	2	552	0	6	4	1	11	0	0	0	3	3	13	6	0	2	21	587
Total	27	1834	18	4	1883	0	24	12	6	42	0	0	0	7	7	41	28	0	11	80	2012
08:00 AM	14	585	9	3	611	0	11	2	3	16	0	0	0	2	2	15	32	0	4	51	680
08:15 AM	10	621	4	4	639	0	7	5	3	15	0	0	0	3	3	7	15	0	11	33	690
08:30 AM	21	591	12	5	629	0	8	3	5	16	0	0	0	1	1	14	26	0	1	41	687
08:45 AM	23	617	14	1	655	0	5	5	6	16	0	0	0	5	5	14	43	0	1	58	734
Total	68	2414	39	13	2534	0	31	15	17	63	0	0	0	11	11	50	116	0	17	183	2791
Grand Total	95	4248	57	17	4417	0	55	27	23	105	0	0	0	18	18	91	144	0	28	263	4803
Apprch %	2.2	96.2	1.3	0.4		0	52.4	25.7	21.9		0	0	0	100		34.6	54.8	0	10.6		
Total %	2	88.4	1.2	0.4	92	0	1.1	0.6	0.5	2.2	0	0	0	0.4	0.4	1.9	3	0	0.6	5.5	
Cars	94	4171																			
% Cars	98.9	98.2	98.2	100	98.2	0	96.4	100	100	98.1	0	0	0	100	100	97.8	98.6	0	100	98.5	98.2
Trucks	1	77	1	0	79	0	2	0	0	2	0	0	0	0	0	2	2	0	0	4	85
% Trucks	1.1	1.8	1.8	0	1.8	0	3.6	0	0	1.9	0	0	0	0	0	2.2	1.4	0	0	1.5	1.8



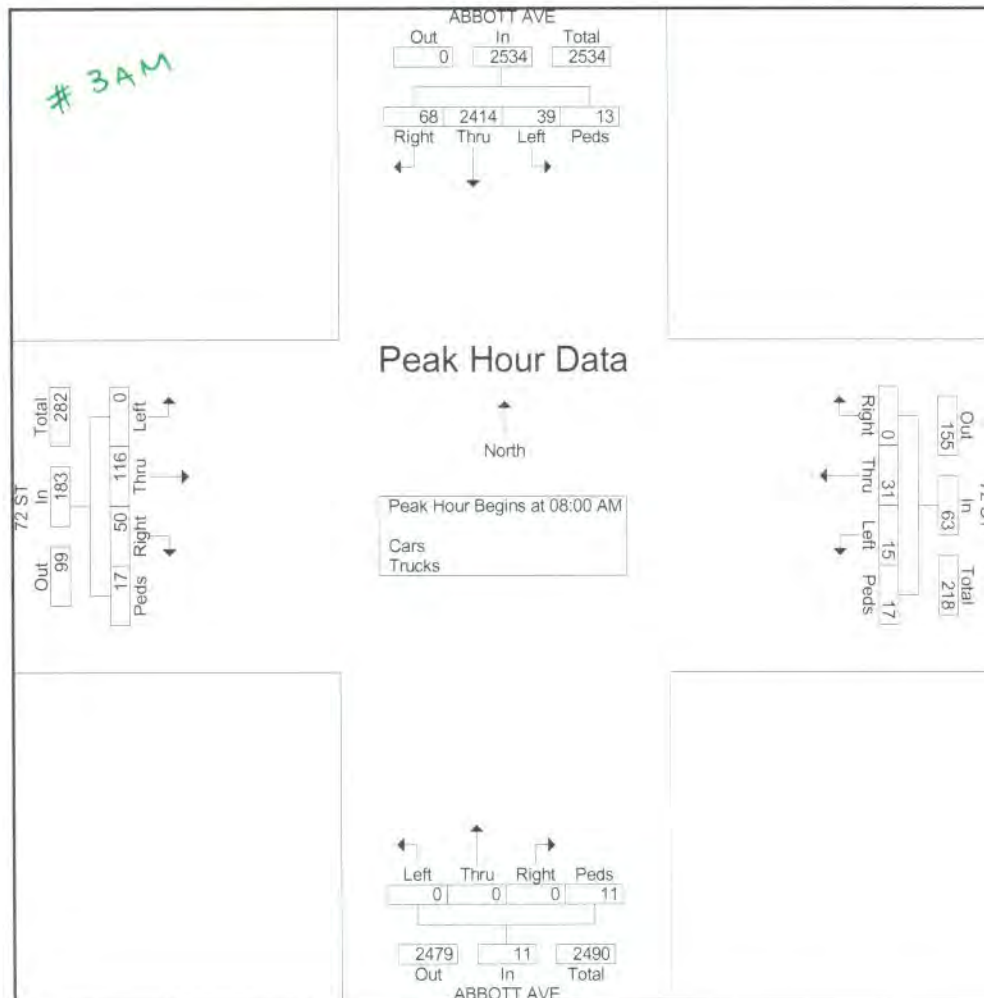


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File Name : 72 St_Abbott Ave_AM
Site Code : 00000000
Start Date : 10/15/2013
Page No : 2

	ABBOTT AVE Southbound					72 ST Westbound					ABBOTT AVE Northbound					72 ST Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	14	585	9	3	611	0	11	2	3	16	0	0	0	2	2	15	32	0	4	51	680
08:15 AM	10	621	4	4	639	0	7	5	3	15	0	0	0	3	3	7	15	0	11	33	690
08:30 AM	21	591	12	5	629	0	8	3	5	16	0	0	0	1	1	14	26	0	1	41	687
08:45 AM	23	617	14	1	655	0	5	5	6	16	0	0	0	5	5	14	43	0	1	58	734
Total Volume	68	2414	39	13	2534	0	31	15	17	63	0	0	0	11	11	50	116	0	17	183	2791
% App. Total	2.7	95.3	1.5	0.5		0	49.2	23.8	27		0	0	0	100		27.3	63.4	0	9.3		
PHF	.739	.972	.696	.650	.967	.000	.705	.750	.708	.984	.000	.000	.000	.550	.550	.833	.674	.000	.386	.789	.951





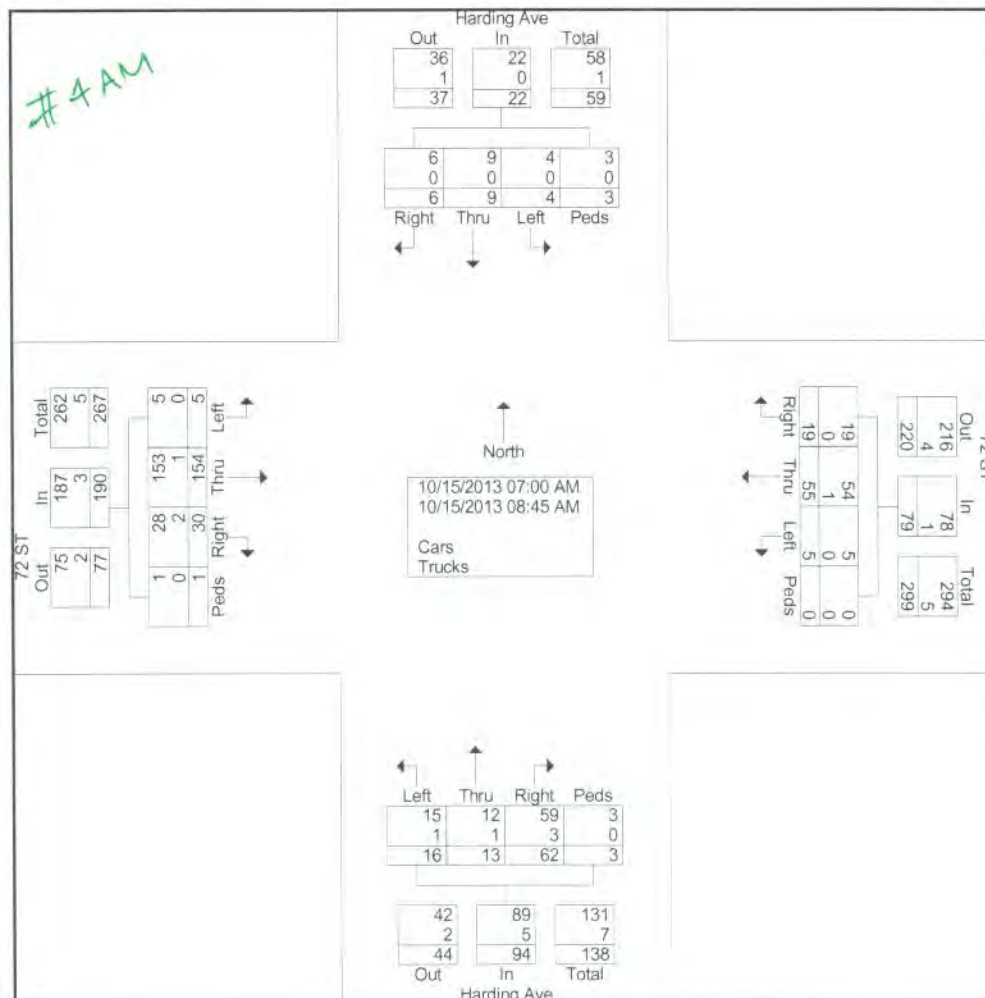
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File Name : Harding Ave _ 72 St _ AM
Site Code : 00000000
Start Date : 10/15/2013
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Groups Printed- Cars - Trucks

	Harding Ave Southbound					72 ST Westbound					Harding Ave Northbound					72 ST Eastbound					
Start Time	Right	Thru	Left	Peds	Appr. Total	Right	Thru	Left	Peds	Appr. Total	Right	Thru	Left	Peds	Appr. Total	Right	Thru	Left	Peds	Appr. Total	Int. Total
07:00 AM	1	0	1	3	5	5	6	1	0	12	4	1	1	0	6	1	3	0	1	5	28
07:15 AM	0	0	0	0	0	1	2	0	0	3	2	4	2	1	9	2	8	0	0	10	22
07:30 AM	0	1	1	0	2	0	8	0	0	8	3	1	5	1	10	5	11	1	0	17	37
07:45 AM	0	1	0	0	1	1	6	1	0	8	8	0	3	0	11	2	7	1	0	10	30
Total	1	2	2	3	8	7	22	2	0	31	17	6	11	2	36	10	29	2	1	42	117
08:00 AM	0	0	0	0	0	1	11	0	0	12	9	4	1	1	15	1	37	0	0	38	65
08:15 AM	1	2	1	0	4	1	9	3	0	13	9	0	2	0	11	3	14	0	0	17	45
08:30 AM	2	4	0	0	6	4	7	0	0	11	18	3	2	0	23	9	27	3	0	39	79
08:45 AM	2	1	1	0	4	6	6	0	0	12	9	0	0	0	9	7	47	0	0	54	79
Total	5	7	2	0	14	12	33	3	0	48	45	7	5	1	58	20	125	3	0	148	268
Grand Total	6	9	4	3	22	19	55	5	0	79	62	13	16	3	94	30	154	5	1	190	385
Apprch %	27.3	40.9	18.2	13.6		24.1	69.6	6.3	0		66	13.8	17	3.2		15.8	81.1	2.6	0.5		
Total %	1.6	2.3	1	0.8	5.7	4.9	14.3	1.3	0	20.5	16.1	3.4	4.2	0.8	24.4	7.8	40	1.3	0.3	49.4	
Cars	6	9	4	3	22	19	54	5	0	78	59	12	15	3	89	28	153	5	1	187	376
% Cars	100	100	100	100	100	100	98.2	100	0	98.7	95.2	92.3	93.8	100	94.7	93.3	99.4	100	100	98.4	97.7
Trucks	0	0	0	0	0	0	1	0	0	1	3	1	1	0	5	2	1	0	0	3	9
% Trucks	0	0	0	0	0	0	1.8	0	0	1.3	4.8	7.7	6.2	0	5.3	6.7	0.6	0	0	1.6	2.3



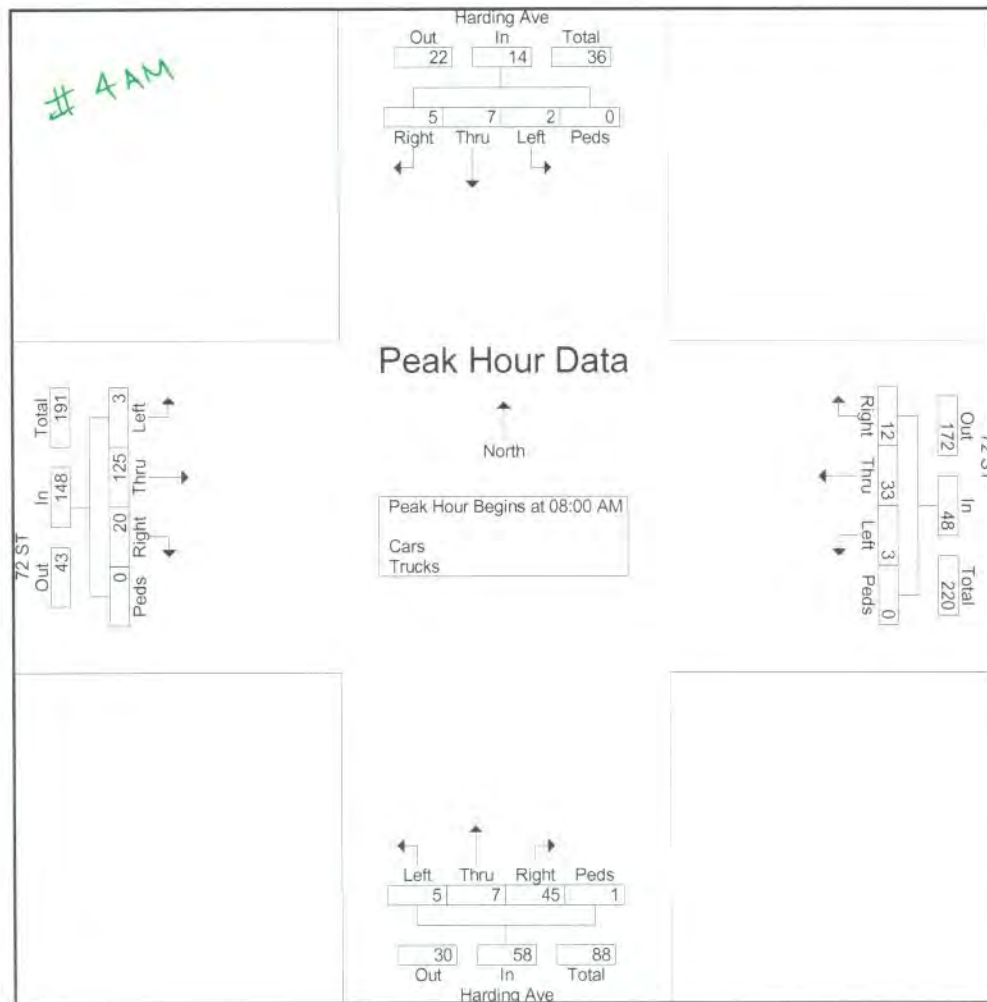


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File Name : Harding Ave _ 72 St _ AM
Site Code : 00000000
Start Date : 10/15/2013
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	Harding Ave Southbound					72 ST Westbound					Harding Ave Northbound					72 ST Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	0	0	0	0	0	1	11	0	0	12	9	4	1	1	15	1	37	0	0	38	65
08:15 AM	1	2	1	0	4	1	9	3	0	13	9	0	2	0	11	3	14	0	0	17	45
08:30 AM	2	4	0	0	6	4	7	0	0	11	18	3	2	0	23	9	27	3	0	39	79
08:45 AM	2	1	1	0	4	6	6	0	0	12	9	0	0	0	9	7	47	0	0	54	79
Total Volume	5	7	2	0	14	12	33	3	0	48	45	7	5	1	58	20	125	3	0	148	268
% App. Total	35.7	50	14.3	0		25	68.8	6.2	0		77.6	12.1	8.6	1.7		13.5	84.5	2	0		
PHF	.625	.438	.500	.000	.583	.500	.750	.250	.000	.923	.625	.438	.625	.250	.630	.556	.665	.250	.000	.685	.848





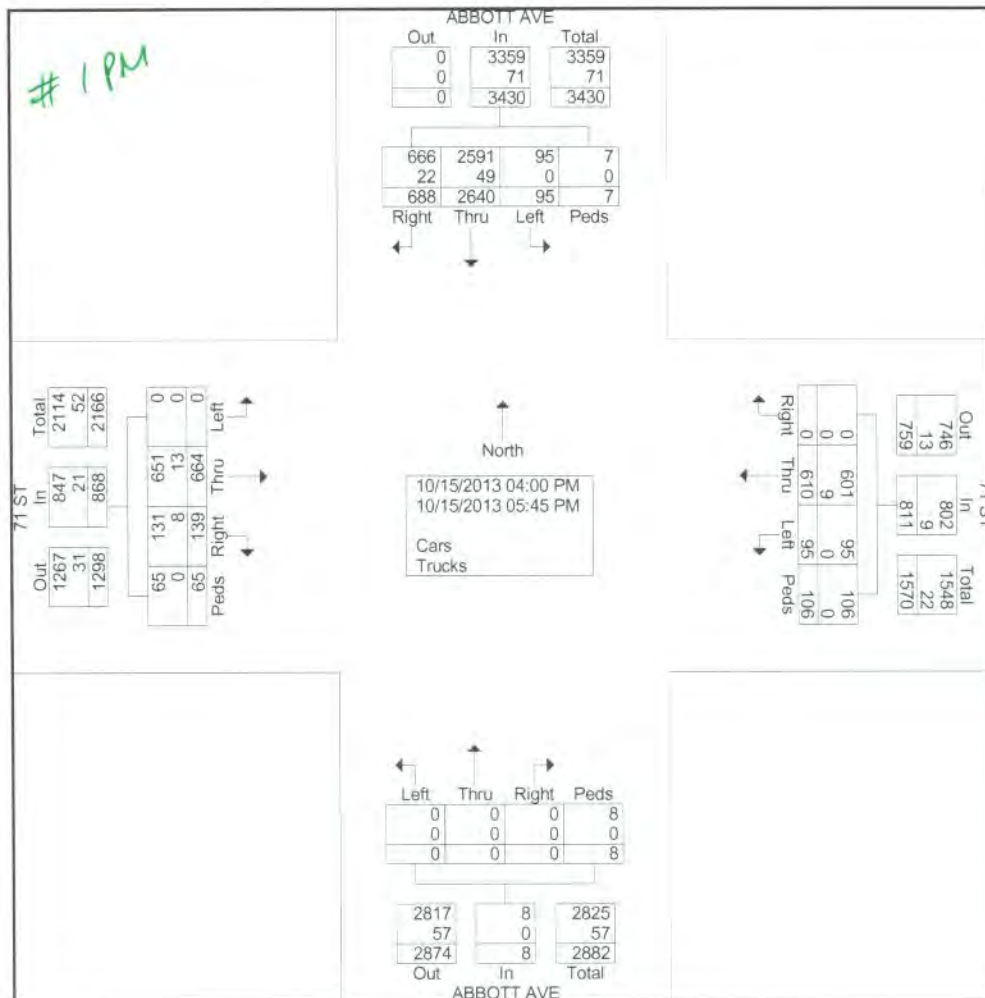
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File Name : 71 St_Abbott Ave_PM
Site Code : 00000000
Start Date : 10/15/2013
Page No : 1

Groups Printed- Cars - Trucks

Start Time	ABBOTT AVE Southbound					71 ST Westbound					ABBOTT AVE Northbound					71 ST Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
04:00 PM	92	320	8	2	422	0	76	10	14	100	0	0	0	0	0	17	74	0	8	99	621
04:15 PM	96	344	13	0	453	0	73	15	6	94	0	0	0	1	1	17	74	0	9	100	648
04:30 PM	79	357	9	1	446	0	86	12	21	119	0	0	0	1	1	19	85	0	9	113	679
04:45 PM	77	326	10	1	414	0	82	9	3	94	0	0	0	0	0	14	83	0	3	100	608
Total	344	1347	40	4	1735	0	317	46	44	407	0	0	0	2	2	67	316	0	29	412	2556
05:00 PM	91	320	11	0	422	0	73	8	18	99	0	0	0	3	3	17	85	0	13	115	639
05:15 PM	88	323	17	2	430	0	70	12	12	94	0	0	0	3	3	16	92	0	7	115	642
05:30 PM	89	326	16	1	432	0	77	15	20	112	0	0	0	0	0	24	83	0	9	116	660
05:45 PM	76	324	11	0	411	0	73	14	12	99	0	0	0	0	0	15	88	0	7	110	620
Total	344	1293	55	3	1695	0	293	49	62	404	0	0	0	6	6	72	348	0	36	456	2561
Grand Total	688	2640	95	7	3430	0	610	95	106	811	0	0	0	8	8	139	664	0	65	868	5117
Apprch %	20.1	77	2.8	0.2		0	75.2	11.7	13.1		0	0	0	100		16	76.5	0	7.5		
Total %	13.4	51.6	1.9	0.1	67	0	11.9	1.9	2.1	15.8	0	0	0	0.2	0.2	2.7	13	0	1.3	17	
Cars	666	2591																			
% Cars	96.8	98.1	100	100	97.9	0	98.5	100	100	98.9	0	0	0	100	100	94.2	98	0	100	97.6	96
Trucks	22	49	0	0	71	0	9	0	0	9	0	0	0	0	0	8	13	0	0	21	101
% Trucks	3.2	1.9	0	0	2.1	0	1.5	0	0	1.1	0	0	0	0	0	5.8	2	0	0	2.4	2



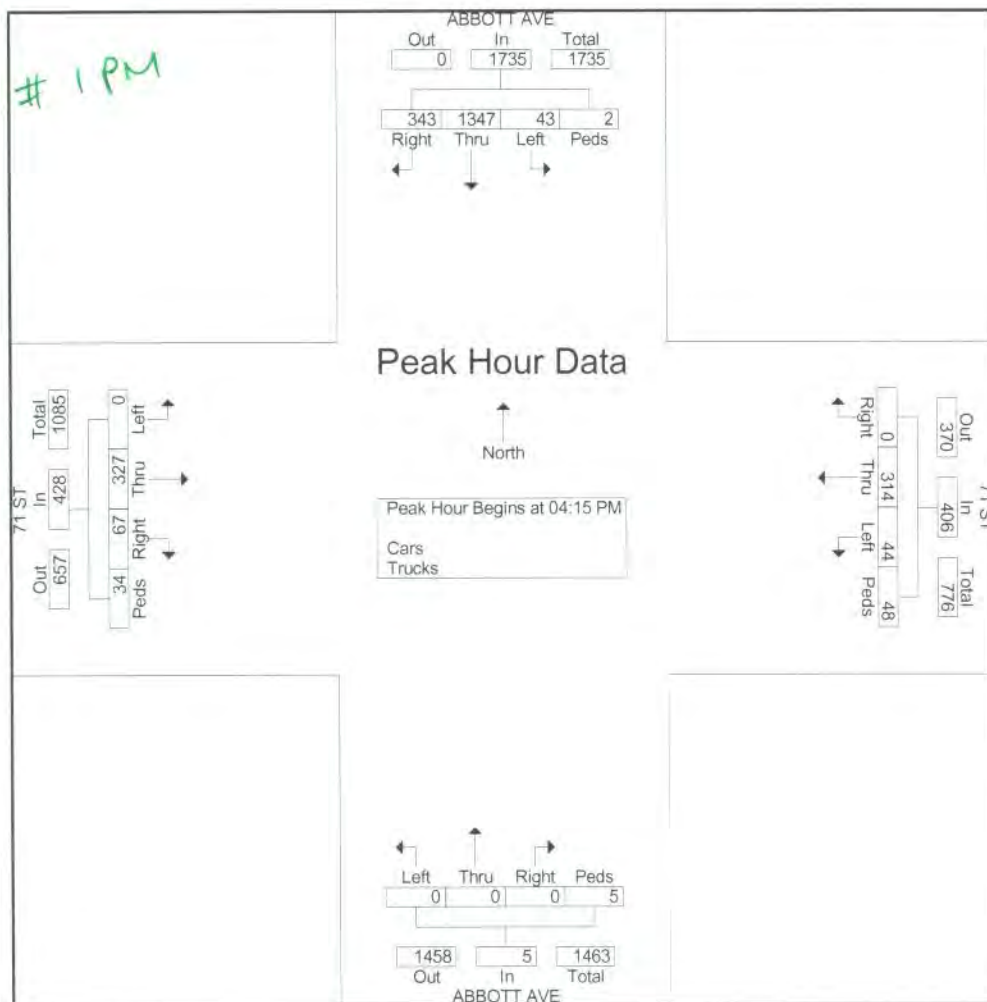


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File Name : 71 St_Abbott Ave_PM
Site Code : 00000000
Start Date : 10/15/2013
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	ABBOTT AVE Southbound					71 ST Westbound					ABBOTT AVE Northbound					71 ST Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	96	344	13	0	453	0	73	15	6	94	0	0	0	1	1	17	74	0	9	100	648
04:30 PM	79	357	9	1	446	0	86	12	21	119	0	0	0	1	1	19	85	0	9	113	679
04:45 PM	77	326	10	1	414	0	82	9	3	94	0	0	0	0	0	14	83	0	3	100	608
05:00 PM	91	320	11	0	422	0	73	8	18	99	0	0	0	3	3	17	85	0	13	115	639
Total Volume	343	1347	43	2	1735	0	314	44	48	406	0	0	0	5	5	67	327	0	34	428	2574
% App. Total	19.8	77.6	2.5	0.1		0	77.3	10.8	11.8		0	0	0	100		15.7	76.4	0	7.9		
PHF	.893	.943	.827	.500	.958	.000	.913	.733	.571	.853	.000	.000	.000	.417	.417	.882	.962	.000	.654	.930	.948





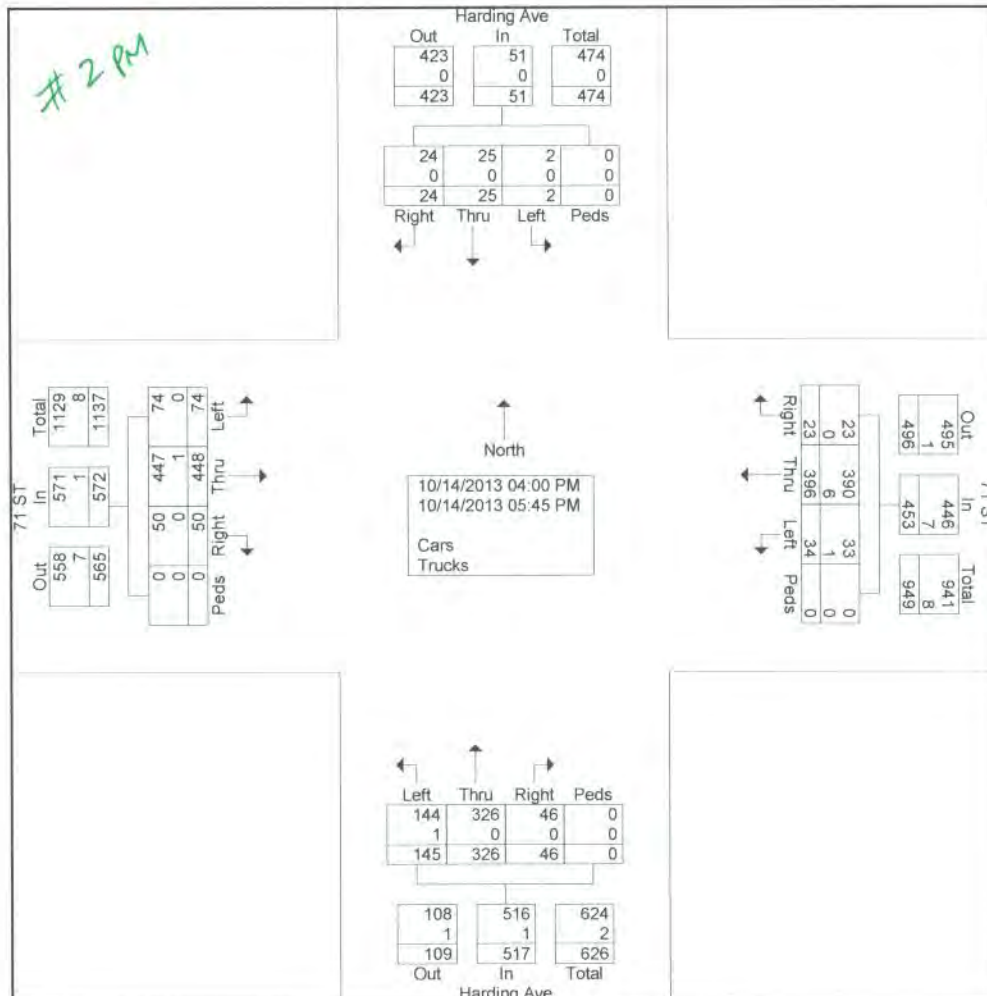
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File Name : Harding Ave _ 71 St _ PM
Site Code : 00000000
Start Date : 10/14/2013
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Groups Printed- Cars - Trucks

	Harding Ave Southbound					71 ST Westbound					Harding Ave Northbound					71 ST Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	1	0	0	1	4	46	3	0	53	3	59	22	0	84	5	54	4	0	63	201
04:15 PM	4	7	1	0	12	3	55	6	0	64	11	51	23	0	85	9	62	9	0	80	241
04:30 PM	5	5	1	0	11	4	78	3	0	85	4	37	17	0	58	8	72	8	0	88	242
04:45 PM	8	4	0	0	12	1	58	8	0	67	6	54	19	0	79	3	69	8	0	80	238
Total	17	17	2	0	36	12	237	20	0	269	24	201	81	0	306	25	257	29	0	311	922
05:00 PM	2	4	0	0	6	4	54	4	0	62	7	44	18	0	69	7	71	16	0	94	231
05:15 PM	2	2	0	0	4	3	37	4	0	44	7	29	19	0	55	7	46	11	0	64	167
05:30 PM	2	2	0	0	4	2	35	3	0	40	5	30	15	0	50	6	40	10	0	56	150
05:45 PM	1	0	0	0	1	2	33	3	0	38	3	22	12	0	37	5	34	8	0	47	123
Total	7	8	0	0	15	11	159	14	0	184	22	125	64	0	211	25	191	45	0	261	671
Grand Total	24	25	2	0	51	23	396	34	0	453	46	326	145	0	517	50	448	74	0	572	1593
Apprch %	47.1	49	3.9	0		5.1	87.4	7.5	0		8.9	63.1	28	0		8.7	78.3	12.9	0		
Total %	1.5	1.6	0.1	0	3.2	1.4	24.9	2.1	0	28.4	2.9	20.5	9.1	0	32.5	3.1	28.1	4.6	0	35.9	
Cars	24	25	2	0	51	23	390	33	0	446	46	326	144	0	516	50	447	74	0	571	1584
% Cars	100	100	100	0	100	100	98.5	97.1	0	98.5	100	100	99.3	0	99.8	100	99.8	100	0	99.8	99.4
Trucks	0	0	0	0	0	0	6	1	0	7	0	0	1	0	1	0	1	0	0	1	9
% Trucks	0	0	0	0	0	0	1.5	2.9	0	1.5	0	0	0.7	0	0.2	0	0.2	0	0	0.2	0.6



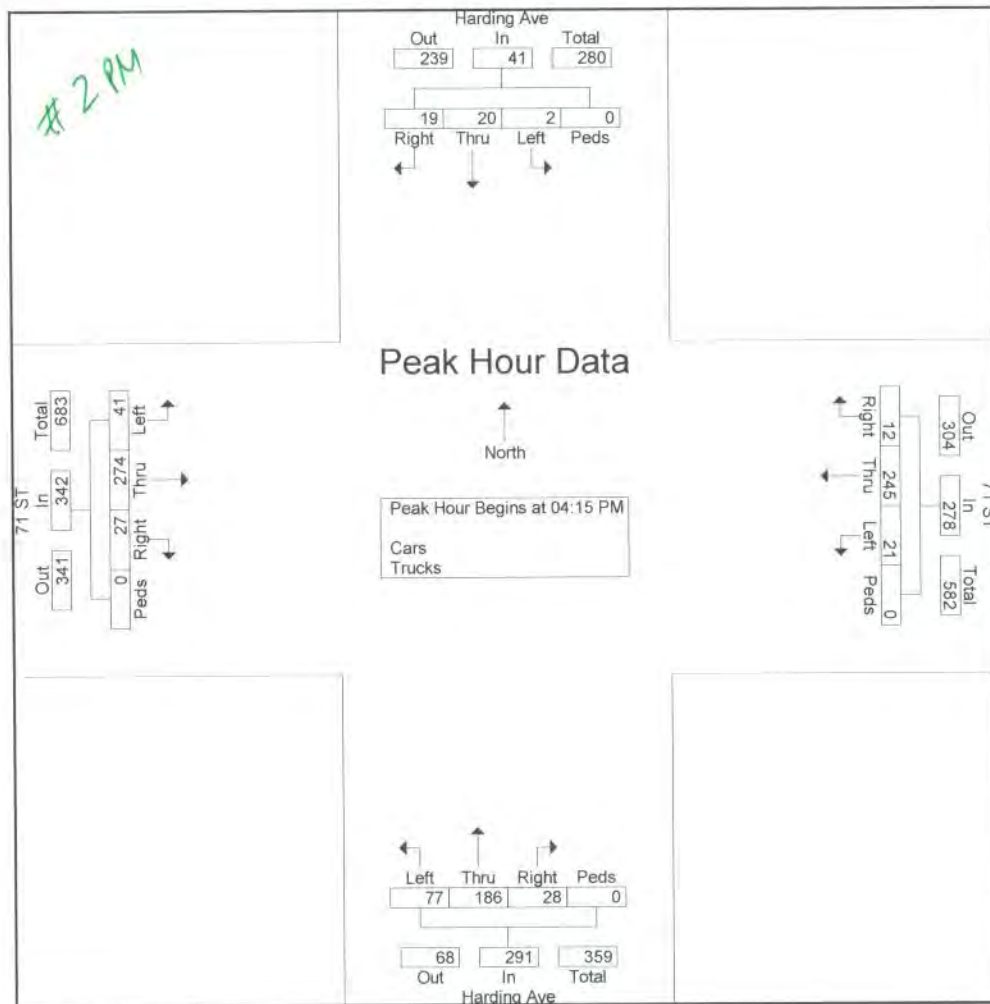


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Site Code : 00000000
Start Date : 10/14/2013
Page No : 2

	Harding Ave Southbound					71 ST Westbound					Harding Ave Northbound					71 ST Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	4	7	1	0	12	3	55	6	0	64	11	51	23	0	85	9	62	9	0	80	241
04:30 PM	5	5	1	0	11	4	78	3	0	85	4	37	17	0	58	8	72	8	0	88	242
04:45 PM	8	4	0	0	12	1	58	8	0	67	6	54	19	0	79	3	69	8	0	80	238
05:00 PM	2	4	0	0	6	4	54	4	0	62	7	44	18	0	69	7	71	16	0	94	231
Total Volume	19	20	2	0	41	12	245	21	0	278	28	186	77	0	291	27	274	41	0	342	952
% App. Total	46.3	48.8	4.9	0		4.3	88.1	7.6	0		9.6	63.9	26.5	0		7.9	80.1	12	0		
PHF	.594	.714	.500	.000	.854	.750	.785	.656	.000	.818	.636	.861	.837	.000	.856	.750	.951	.641	.000	.910	.983





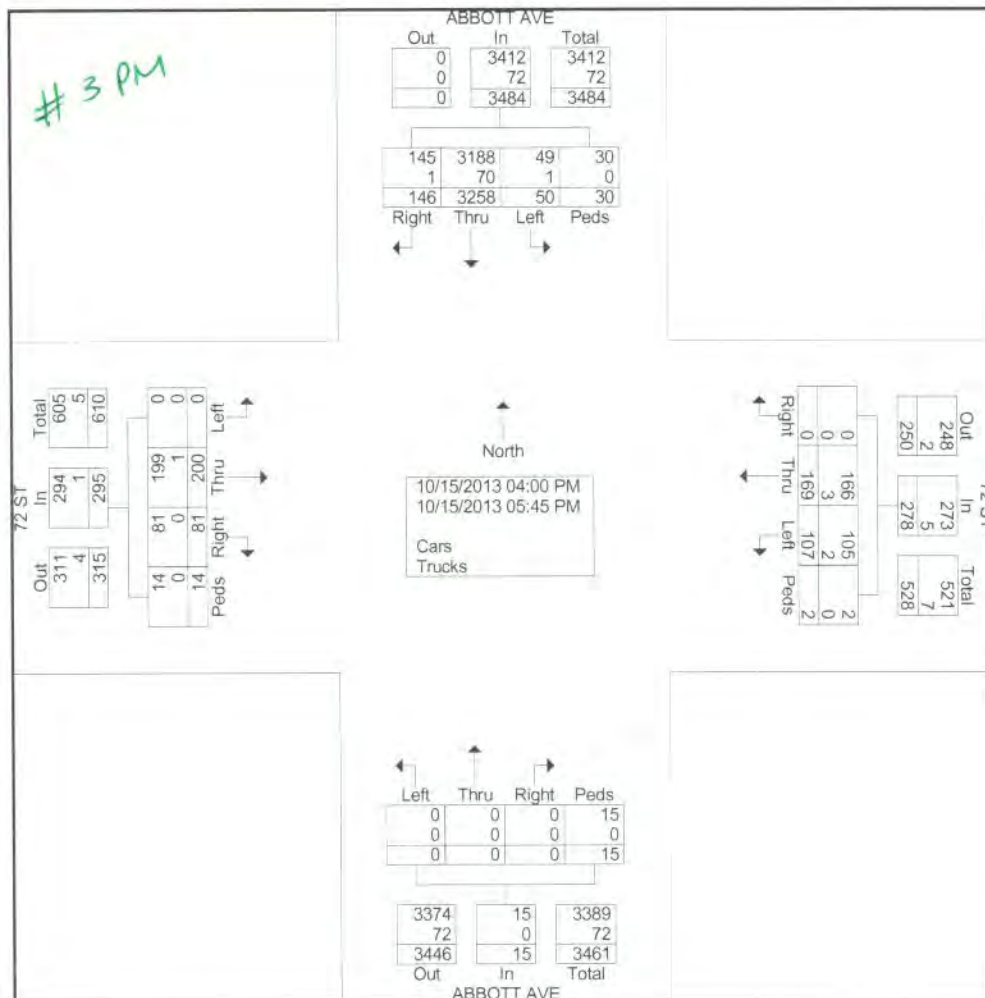
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File Name : 72 St_Abbott Ave_PM
Site Code : 00000000
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Groups Printed- Cars - Trucks

	ABBOTT AVE Southbound					72 ST Westbound					ABBOTT AVE Northbound					72 ST Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	13	396	6	3	418	0	22	16	1	39	0	0	0	3	3	7	16	0	3	26	486
04:15 PM	17	421	9	6	453	0	15	14	1	30	0	0	0	1	1	8	16	0	3	27	511
04:30 PM	15	427	6	0	448	0	18	6	0	24	0	0	0	2	2	9	19	0	2	30	504
04:45 PM	18	397	6	7	428	0	15	14	0	29	0	0	0	0	0	9	26	0	0	35	492
Total	63	1641	27	16	1747	0	70	50	2	122	0	0	0	6	6	33	77	0	8	118	1993
05:00 PM	32	425	5	3	465	0	10	10	0	20	0	0	0	4	4	7	19	0	5	31	520
05:15 PM	16	399	4	5	424	0	24	12	0	36	0	0	0	3	3	11	23	0	0	34	497
05:30 PM	17	411	4	2	434	0	30	13	0	43	0	0	0	2	2	14	53	0	0	67	546
05:45 PM	18	382	10	4	414	0	35	22	0	57	0	0	0	0	0	16	28	0	1	45	516
Total	83	1617	23	14	1737	0	99	57	0	156	0	0	0	9	9	48	123	0	6	177	2079
Grand Total	146	3258	50	30	3484	0	169	107	2	278	0	0	0	15	15	81	200	0	14	295	4072
Apprch %	4.2	93.5	1.4	0.9		0	60.8	38.5	0.7		0	0	0	100		27.5	67.8	0	4.7		
Total %	3.6	80	1.2	0.7	85.6	0	4.2	2.6	0	6.8	0	0	0	0.4	0.4	2	4.9	0	0.3	7.2	
Cars	145	3188																			
% Cars	99.3	97.9	98	100	97.9	0	98.2	98.1	100	98.2	0	0	0	100	100	100	99.5	0	100	99.7	98.1
Trucks	1	70	1	0	72	0	3	2	0	5	0	0	0	0	0	0	1	0	0	1	78
% Trucks	0.7	2.1	2	0	2.1	0	1.8	1.9	0	1.8	0	0	0	0	0	0	0.5	0	0	0.3	1.9



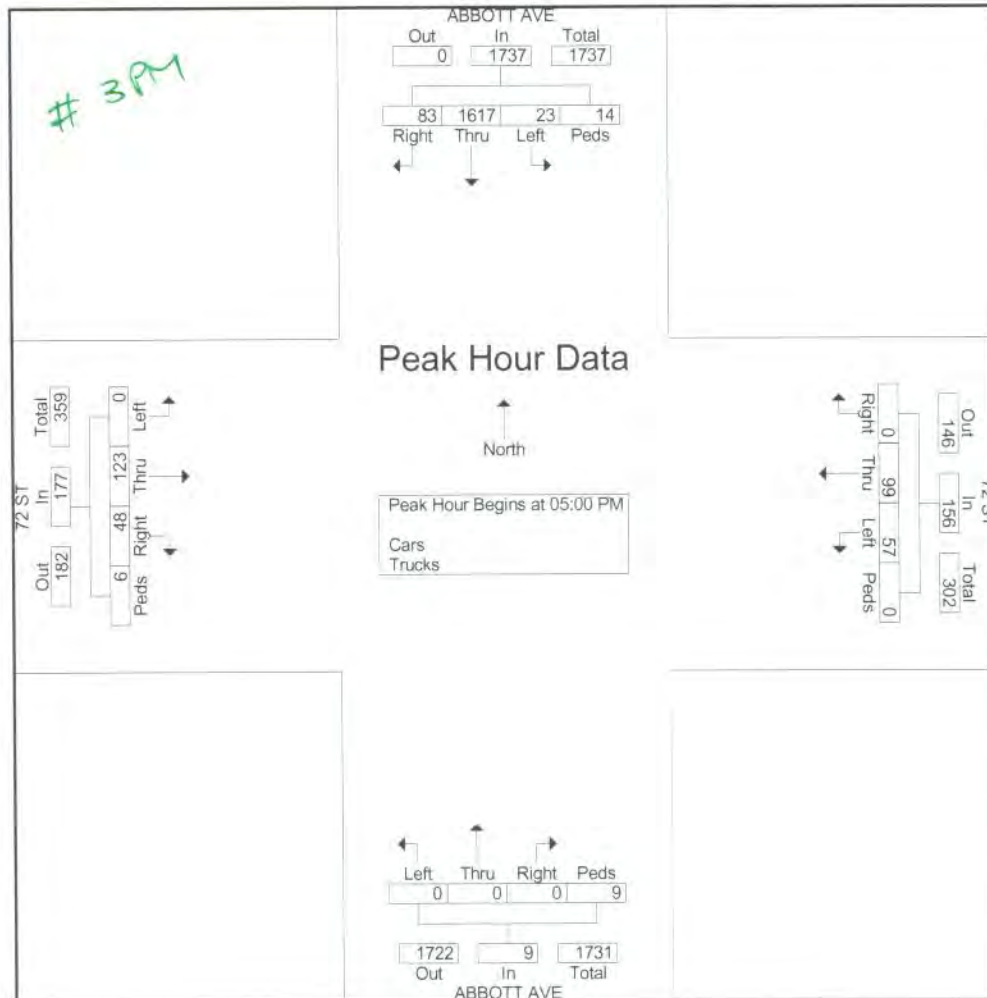


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File Name : 72 St_Abbott Ave_PM
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Start Date : 10/15/2013
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	ABBOTT AVE Southbound					72 ST Westbound					ABBOTT AVE Northbound					72 ST Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	32	425	5	3	465	0	10	10	0	20	0	0	0	4	4	7	19	0	5	31	520
05:15 PM	16	399	4	5	424	0	24	12	0	36	0	0	0	3	3	11	23	0	0	34	497
05:30 PM	17	411	4	2	434	0	30	13	0	43	0	0	0	2	2	14	53	0	0	67	546
05:45 PM	18	382	10	4	414	0	35	22	0	57	0	0	0	0	0	16	28	0	1	45	516
Total Volume	83	1617	23	14	1737	0	99	57	0	156	0	0	0	9	9	48	123	0	6	177	2079
% App. Total	4.8	93.1	1.3	0.8		0	63.5	36.5	0		0	0	0	100		27.1	69.5	0	3.4		
PHF	.648	.951	.575	.700	.934	.000	.707	.648	.000	.684	.000	.000	.000	.563	.563	.750	.580	.000	.300	.660	.952





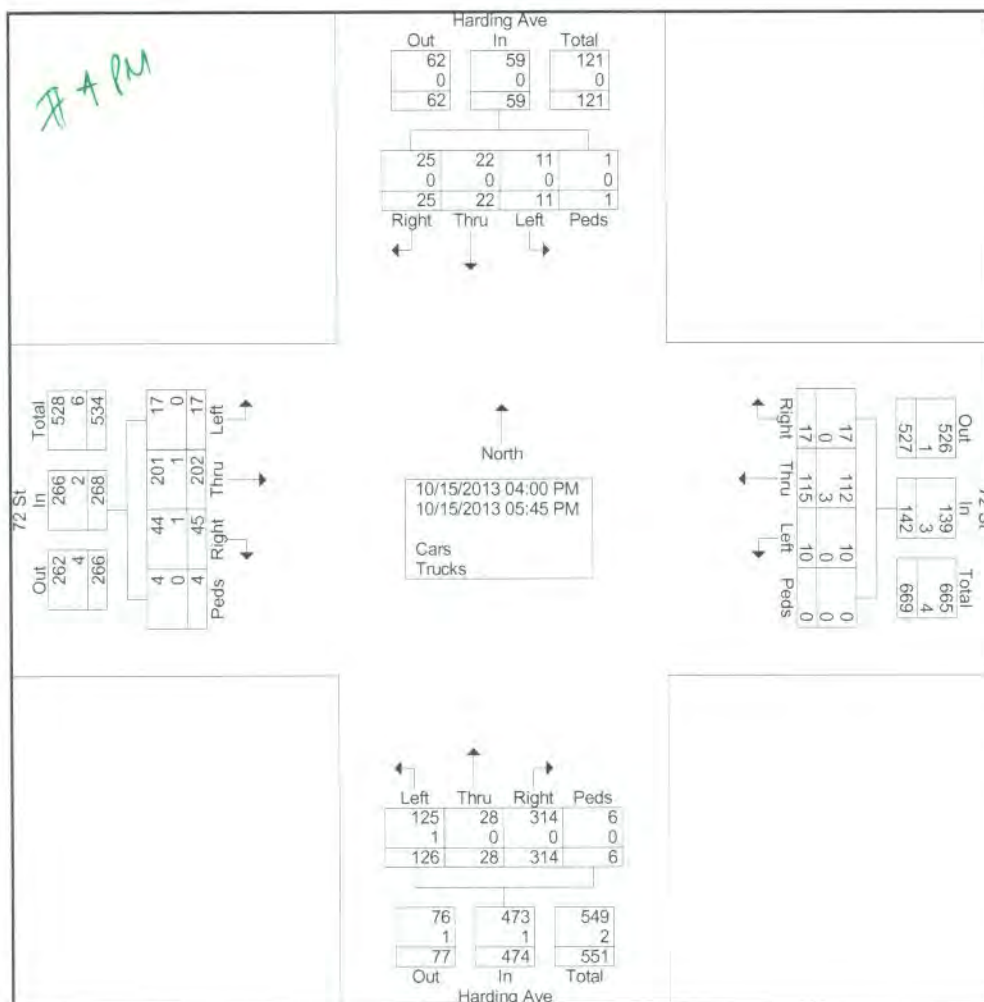
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File Name : Harding Ave _ 72 St _ PM
Site Code : 00000000
Start Date : 10/15/2013
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Groups Printed- Cars - Trucks

	Harding Ave Southbound					72 St Westbound					Harding Ave Northbound					72 St Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Inlt. Total
04:00 PM	4	5	1	1	11	1	17	3	0	21	22	1	18	2	43	5	22	1	1	29	104
04:15 PM	6	2	1	0	9	4	9	1	0	14	37	3	14	0	54	6	25	1	0	32	109
04:30 PM	3	5	2	0	10	4	5	1	0	10	39	6	10	0	55	1	19	1	0	21	96
04:45 PM	1	5	0	0	6	3	19	1	0	23	46	3	13	2	64	6	23	2	2	33	126
Total	14	17	4	1	36	12	50	6	0	68	144	13	55	4	216	18	89	5	3	115	435
05:00 PM	3	1	0	0	4	1	6	0	0	7	48	3	12	1	64	3	21	1	0	25	100
05:15 PM	2	1	5	0	8	0	16	1	0	17	37	7	18	0	62	2	19	0	0	21	108
05:30 PM	4	2	0	0	6	1	24	2	0	27	40	3	20	0	63	6	45	4	0	55	151
05:45 PM	2	1	2	0	5	3	19	1	0	23	45	2	21	1	69	16	28	7	1	52	149
Total	11	5	7	0	23	5	65	4	0	74	170	15	71	2	258	27	113	12	1	153	508
Grand Total	25	22	11	1	59	17	115	10	0	142	314	28	126	6	474	45	202	17	4	268	943
Apprch %	42.4	37.3	18.6	1.7		12	81	7	0		66.2	5.9	26.6	1.3		16.8	75.4	6.3	1.5		
Total %	2.7	2.3	1.2	0.1	6.3	1.8	12.2	1.1	0	15.1	33.3	3	13.4	0.6	50.3	4.8	21.4	1.8	0.4	28.4	
Cars	25	22	11	1	59	17	112	10	0	139	314	28	125	6	473	44	201	17	4	266	937
% Cars	100	100	100	100	100	100	97.4	100	0	97.9	100	100	99.2	100	99.8	97.8	99.5	100	100	99.3	99.4
Trucks	0	0	0	0	0	0	3	0	0	3	0	0	1	0	1	1	1	0	0	2	6
% Trucks	0	0	0	0	0	0	2.6	0	0	2.1	0	0	0.8	0	0.2	2.2	0.5	0	0	0.7	0.6



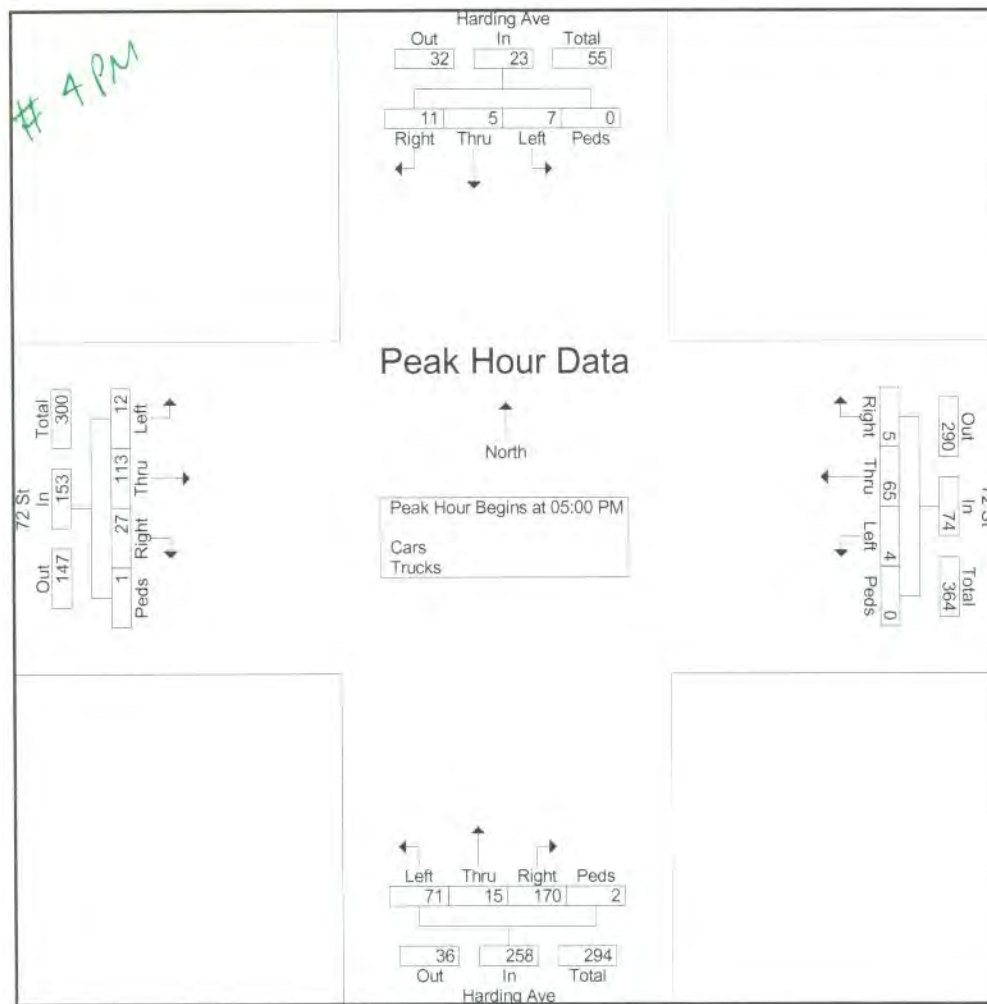


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	Harding Ave Southbound					72 St Westbound					Harding Ave Northbound					72 St Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	3	1	0	0	4	1	6	0	0	7	48	3	12	1	64	3	21	1	0	25	100
05:15 PM	2	1	5	0	8	0	16	1	0	17	37	7	18	0	62	2	19	0	0	21	108
05:30 PM	4	2	0	0	6	1	24	2	0	27	40	3	20	0	63	6	45	4	0	55	151
05:45 PM	2	1	2	0	5	3	19	1	0	23	45	2	21	1	69	16	28	7	1	52	149
Total Volume	11	5	7	0	23	5	65	4	0	74	170	15	71	2	258	27	113	12	1	153	508
% App. Total	47.8	21.7	30.4	0		6.8	87.8	5.4	0		65.9	5.8	27.5	0.8		17.6	73.9	7.8	0.7		
PHF	.688	.625	.350	.000	.719	.417	.677	.500	.000	.685	.885	.536	.845	.500	.935	.422	.628	.429	.250	.695	.841



Appendix 5: Level of Service (LOS)



TABLE: A6

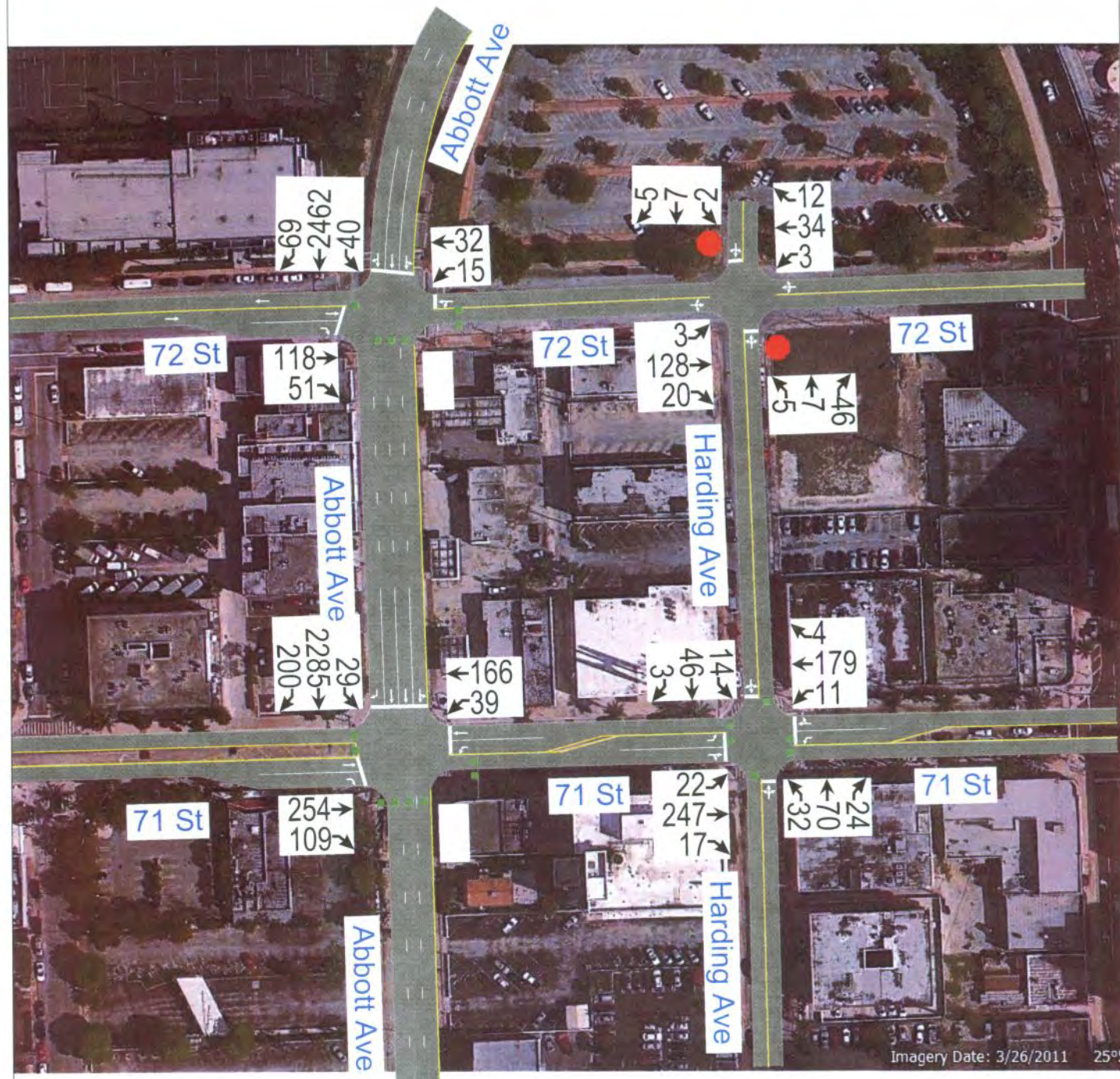
Shell Gas Station at 337 71st Street
Intersection LOS Summary - AM & PM Peak Hour

Existing AM Peak Hour Condition		Intersection Approach								Overall	
Location	Intersection Control	Eastbound		Westbound		Northbound		Southbound		LOS	Delay (s)
		LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)		
71 Street & Abbott Avenue	Signalized	B	18.5	B	16.2	N/A	N/A	B	11.3	B	12.4
71 Street & Harding Avenue	Signalized	A	7.6	B	10.9	A	8.7	A	8.2	A	8.8
72 Street & Abbott Avenue	Signalized	B	19.2	B	18.4	N/A	N/A	B	12.3	B	12.8
72 Street & Harding Avenue	Two-Way Stop	A	0.1	A	0.5	A	9.7	A	9.9	A	2.7
Proposed AM Peak Hour Condition		Intersection Approach								Overall	
Location	Intersection Control	Eastbound		Westbound		Northbound		Southbound		LOS	Delay (s)
		LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)		
71 Street & Abbott Avenue	Signalized	B	19.8	B	17.5	N/A	N/A	B	11.7	B	13.0
71 Street & Harding Avenue	Signalized	A	7.9	B	11.2	A	8.7	A	8.2	A	9.0
72 Street & Abbott Avenue	Signalized	C	20.6	B	19.7	N/A	N/A	B	12.6	B	13.2
72 Street & Harding Avenue	Two-Way Stop	A	0.1	A	0.4	A	9.8	A	9.9	A	2.7
Existing PM Peak Hour Condition		Intersection Approach								Overall	
Location	Intersection Control	Eastbound		Westbound		Northbound		Southbound		LOS	Delay (s)
		LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)		
71 Street & Abbott Avenue	Signalized	B	14.4	B	13.6	N/A	N/A	B	13.3	B	13.5
71 Street & Harding Avenue	Signalized	B	11.4	B	14.6	A	9.8	A	8.1	B	11.7
72 Street & Abbott Avenue	Signalized	B	11.4	B	11.8	N/A	N/A	B	11.5	B	11.5
72 Street & Harding Avenue	Two-Way Stop	A	0.6	A	0.4	B	12.5	B	10.9	A	7.1
Proposed PM Peak Hour Condition		Intersection Approach								Overall	
Location	Intersection Control	Eastbound		Westbound		Northbound		Southbound		LOS	Delay (s)
		LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)		
71 Street & Abbott Avenue	Signalized	B	14.8	B	14.1	N/A	N/A	B	13.6	B	13.9
71 Street & Harding Avenue	Signalized	B	11.8	B	15.3	A	9.9	A	8.1	B	12.1
72 Street & Abbott Avenue	Signalized	B	12.0	B	12.4	N/A	N/A	B	11.5	B	11.6
72 Street & Harding Avenue	Two-Way Stop	A	0.6	A	0.4	B	12.9	B	11.0	A	7.3

TABLE: A7

Shell Gas Station at 337 71st Street
Driveway LOS Summary - AM & PM Peak Hour

Driveway Level of Service (LOS)			Approaches												Overall	
	Location	Intersection Control	Eastbound		Westbound		Northbound		Southbound		LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)
			LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)						
AM Peak Hour	Driveway 1 & Abbott Avenue	2-Way Stop	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	A	0.1	A	0.1	A	0.1
	Alley & Abbott Avenue	2-Way Stop	N/A	N/A	C	17.4	N/A	N/A	N/A	N/A	A	0.1	A	0.1	A	0.2
	Driveway 2 & Abbott Avenue	2-Way Stop	N/A	N/A	C	16.7	N/A	N/A	N/A	N/A	A	0.0	A	0.0	A	0.1
	Driveway 3 & 71 Street	2-Way Stop	A	0.0	A	0.0	N/A	N/A	N/A	N/A	A	9.1	A	0.2	A	0.2
PM Peak Hour	Driveway 1 & Abbott Avenue	2-Way Stop	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	A	0.1	A	0.1	A	0.1
	Alley & Abbott Avenue	2-Way Stop	N/A	N/A	B	13.4	N/A	N/A	N/A	N/A	A	0.0	A	0.0	A	0.2
	Driveway 2 & Abbott Avenue	2-Way Stop	N/A	N/A	B	13.1	N/A	N/A	N/A	N/A	A	0.0	A	0.0	A	0.2
	Driveway 3 & 71 Street	2-Way Stop	A	0.0	A	0.0	N/A	N/A	N/A	N/A	A	9.8	A	0.3	A	0.3



Timings
1: Abbott Ave & 71 St

Existing AM Peak Hour Condition
Shell Gas Station at 337 71 Street

	→	↘	↙	←	↓	↖
Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Configurations	↑	↗	↖	↑	↔↔↔	↗
Volume (vph)	254	109	39	166	2285	200
Turn Type	NA	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		3	8	6	
Permitted Phases		4	8			6
Detector Phase	4	4	3	8	6	6
Switch Phase						
Minimum Initial (s)	4.0	4.0	5.0	4.0	4.0	4.0
Minimum Split (s)	27.0	27.0	9.0	28.0	27.0	27.0
Total Split (s)	30.0	30.0	8.0	38.0	52.0	52.0
Total Split (%)	33.3%	33.3%	8.9%	42.2%	57.8%	57.8%
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	0.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	3.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	None	None	None	None	C-Min	C-Min
Act Effct Green (s)	16.2	16.2	23.4	21.4	58.6	58.6
Actuated g/C Ratio	0.18	0.18	0.26	0.24	0.65	0.65
v/c Ratio	0.78	0.40	0.19	0.39	0.72	0.19
Control Delay	51.2	35.6	23.4	29.2	13.8	1.9
Queue Delay	0.0	0.0	0.0	0.5	5.1	0.0
Total Delay	51.2	35.6	23.4	29.7	18.9	1.9
LOS	D	D	C	C	B	A
Approach Delay	46.5			28.5	17.5	
Approach LOS	D			C	B	

Intersection Summary

Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 53 (59%), Referenced to phase 2: and 6:SBTL, Start of Yellow
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.78
 Intersection Signal Delay: 21.7
 Intersection Capacity Utilization 76.5%
 Analysis Period (min) 15

Intersection LOS: C
 ICU Level of Service D

Splits and Phases: 1: Abbott Ave & 71 St



1: Abbott Ave & 71 St

Shell Gas Station at 337 71 Street

[illegible]

2: Harding Ave & 71 St

Existing AM Peak Hour Condition

Shell Gas Station at 337 71 Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	22	247	17	11	179	4	32	70	24	14	46	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	0.99		0.99	0.99		0.99
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	186.3	186.3	190.0	186.3	186.3	190.0	190.0	186.3	190.0	190.0	186.3	190.0
Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Cap, veh/h	518	474	32	475	471	9	228	262	76	209	351	17
Arrive On Green	0.06	0.55	0.55	0.02	0.26	0.26	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	1774	1724	118	1774	1820	36	261	1113	323	195	1488	74
Grp Volume(v), veh/h	25	0	297	12	0	205	142	0	0	71	0	0
Grp Sat Flow(s),veh/h/ln	1774	0	1842	1774	0	1856	1696	0	0	1758	0	0
Q Serve(g_s), s	0.3	0.0	2.9	0.1	0.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.3	0.0	2.9	0.1	0.0	2.5	1.8	0.0	0.0	0.8	0.0	0.0
Prop In Lane	1.00		0.06	1.00		0.02	0.25		0.19	0.23		0.04
Lane Grp Cap(c), veh/h	518	0	506	475	0	481	567	0	0	577	0	0
V/C Ratio(X)	0.05	0.00	0.59	0.03	0.00	0.43	0.25	0.00	0.00	0.12	0.00	0.00
Avail Cap(c_a), veh/h	922	0	2318	907	0	2336	2361	0	0	2413	0	0
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.53	0.00	0.53	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.5	0.0	5.1	7.3	0.0	8.3	8.6	0.0	0.0	8.2	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	2.6	0.0	0.0	2.8	0.1	0.0	0.0	0.0	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 Back of Q (50%), veh/ln	0.1	0.0	1.1	0.0	0.0	1.2	0.6	0.0	0.0	0.3	0.0	0.0
Lane Grp Delay (d), s/veh	6.5	0.0	7.7	7.3	0.0	11.1	8.7	0.0	0.0	8.2	0.0	0.0
Lane Grp LOS	A		A	A		B	A			A		
Approach Vol, veh/h		322			217			142			71	
Approach Delay, s/veh		7.6			10.9			8.7			8.2	
Approach LOS		A			B			A			A	
Timer												
Assigned Phs	5	2		1	6			8			4	
Phs Duration (G+Y+Rc), s	3.9	12.2		3.4	11.8			11.4			11.4	
Change Period (Y+Rc), s	3.0	4.8		3.0	4.8			5.0			5.0	
Max Green Setting (Gmax), s	7.0	34.0		7.0	34.0			36.0			36.0	
Max Q Clear Time (g_c+I1), s	2.3	4.9		2.1	4.5			3.8			2.8	
Green Ext Time (p_c), s	0.0	0.1		0.0	0.1			0.1			0.1	
Intersection Summary												
HCM 2010 Ctrl Delay			8.8									
HCM 2010 LOS			A									
Notes												

Timings
2: Harding Ave & 71 St

Existing AM Peak Hour Condition
Shell Gas Station at 337 71 Street

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	22	247	11	179	32	70	14	46
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	5	2	1	6		8		4
Permitted Phases	2		6		8		4	
Detector Phase	5	2	1	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	5.0	7.0	5.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	8.0	22.8	8.0	22.8	28.0	28.0	28.0	28.0
Total Split (s)	10.0	38.8	10.0	38.8	41.0	41.0	41.0	41.0
Total Split (%)	11.1%	43.2%	11.1%	43.2%	45.7%	45.7%	45.7%	45.7%
Yellow Time (s)	3.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	0.0	0.8	0.0	0.8	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	3.0	4.8	3.0	4.8		5.0		5.0
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Min	None	C-Min	None	None	None	None
Act Effct Green (s)	70.4	67.6	69.7	65.9		10.8		10.8
Actuated g/C Ratio	0.78	0.75	0.78	0.73		0.12		0.12
v/c Ratio	0.03	0.21	0.01	0.15		0.67		0.36
Control Delay	2.8	4.6	2.9	5.1		48.3		38.6
Queue Delay	0.0	1.2	0.0	0.0		0.0		0.0
Total Delay	2.8	5.9	2.9	5.1		48.3		38.6
LOS	A	A	A	A		D		D
Approach Delay		5.6		5.0		48.3		38.6
Approach LOS		A		A		D		D

Intersection Summary

Cycle Length: 89.8

Actuated Cycle Length: 89.8

Offset: 41 (46%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.67

Intersection Signal Delay: 16.6

Intersection LOS: B

Intersection Capacity Utilization 37.7%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 2: Harding Ave & 71 St

		
φ1	φ2 (R)	φ4
10 s	38.8 s	41 s
		
φ5	φ6 (R)	φ3
10 s	38.8 s	41 s

2: Harding Ave & 71 St

Shell Gas Station at 337 71 Street



Intersection Summary

Intersection Summary

Shell Gas Station at 337 71 Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Volume (veh/h)	0	118	51	15	32	0	0	0	0	40	2462	69
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	0.99		1.00				1.00		0.99
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	0.0	186.3	186.3	190.0	186.3	0.0				190.0	186.3	190.0
Lanes	0	1	1	0	1	0				0	3	0
Cap, veh/h	0	335	279	146	246	0				51	3352	97
Arrive On Green	0.00	0.18	0.18	0.18	0.18	0.00				0.63	0.63	0.63
Sat Flow, veh/h	0	1863	1554	315	1368	0				81	5320	154
Grp Volume(v), veh/h	0	124	54	50	0	0				961	875	871
Grp Sat Flow(s),veh/h/ln	0	1863	1554	1683	0	0				1859	1863	1833
Q Serve(g_s), s	0.0	3.1	1.6	0.0	0.0	0.0				21.0	17.4	17.8
Cycle Q Clear(g_c), s	0.0	3.1	1.6	1.2	0.0	0.0				21.0	17.4	17.8
Prop In Lane	0.00		1.00	0.32		0.00				0.04		0.08
Lane Grp Cap(c), veh/h	0	335	279	392	0	0				1171	1174	1155
V/C Ratio(X)	0.00	0.37	0.19	0.13	0.00	0.00				0.82	0.75	0.75
Avail Cap(c_a), veh/h	0	912	761	880	0	0				1890	1894	1864
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	1.00	1.00	1.00	0.00	0.00				1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	19.1	18.5	18.4	0.0	0.0				7.5	6.8	6.9
Incr Delay (d2), s/veh	0.0	0.3	0.1	0.1	0.0	0.0				6.5	4.3	4.6
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 Back of Q (50%), veh/ln	0.0	1.4	0.6	0.5	0.0	0.0				9.1	7.2	7.3
Lane Grp Delay (d), s/veh	0.0	19.4	18.6	18.4	0.0	0.0				14.0	11.2	11.5
Lane Grp LOS		B	B	B						B	B	B
Approach Vol, veh/h		178			50						2707	
Approach Delay, s/veh		19.2			18.4						12.3	
Approach LOS		B			B						B	
Timer												
Assigned Phs		4			8						6	
Phs Duration (G+Y+Rc), s		14.5			14.5						38.6	
Change Period (Y+Rc), s		5.0			5.0						5.1	
Max Green Setting (Gmax), s		26.0			26.0						54.0	
Max Q Clear Time (g_c+I1), s		5.1			3.2						23.0	
Green Ext Time (p_c), s		0.7			0.7						10.4	
Intersection Summary												
HCM 2010 Ctrl Delay			12.8									
HCM 2010 LOS			B									
Notes												

Timings
3: Abbott Ave & 72 St

Existing AM Peak Hour Condition
Shell Gas Station at 337 71 Street

	→	↘	↙	←	↓
Lane Group	EBT	EBR	WBL	WBT	SBT
Lane Configurations	↑	↗		↖	↑↑↑
Volume (vph)	118	51	15	32	2462
Turn Type	NA	Perm	Perm	NA	NA
Protected Phases	4			8	6
Permitted Phases		4	8		
Detector Phase	4	4	8	8	6
Switch Phase					
Minimum Initial (s)	7.0	7.0	7.0	7.0	5.0
Minimum Split (s)	30.0	30.0	30.0	30.0	25.1
Total Split (s)	31.0	31.0	31.0	31.0	59.1
Total Split (%)	34.4%	34.4%	34.4%	34.4%	65.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.1
Lost Time Adjust (s)	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.0	5.0		5.0	5.1
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	None	None	None	None	C-Min
Act Effct Green (s)	10.6	10.6		10.6	69.4
Actuated g/C Ratio	0.12	0.12		0.12	0.77
v/c Ratio	0.57	0.27		0.26	9.12dl
Control Delay	47.2	25.1		38.4	58.1
Queue Delay	0.0	0.0		0.0	0.0
Total Delay	47.2	25.1		38.4	58.1
LOS	D	C		D	E
Approach Delay	40.5			38.4	58.1
Approach LOS	D			D	E

Intersection Summary

Cycle Length: 90.1

Actuated Cycle Length: 90.1

Offset: 82 (91%), Referenced to phase 2: and 6: SBT, Start of Yellow

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.08

Intersection Signal Delay: 56.7

Intersection LOS: E

Intersection Capacity Utilization 84.1%

ICU Level of Service E

Analysis Period (min) 15

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 3: Abbott Ave & 72 St

↓	ø6 (R)	59.1 s	→	ø4	31 s
			←	ø8	31 s

Queues
3: Abbott Ave & 72 St

Existing AM Peak Hour Condition
Shell Gas Station at 337 71 Street

	→	↘	←	↓
Lane Group	EBT	EBR	WBT	SBT
Lane Group Flow (vph)	124	54	50	2707
v/c Ratio	0.57	0.27	0.26	9.12dl
Control Delay	47.2	25.1	38.4	58.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	47.2	25.1	38.4	58.1
Queue Length 50th (ft)	68	15	26	~637
Queue Length 95th (ft)	118	47	58	#770
Internal Link Dist (ft)	86		197	160
Turn Bay Length (ft)				
Base Capacity (vph)	537	463	465	2504
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.23	0.12	0.11	1.08

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- dl Defacto Left Lane. Recode with 1 though lane as a left lane.
- dr Defacto Right Lane. Recode with 1 though lane as a right lane.

HCM 2010 TWSC
4: Harding Ave/Public Parking & 72 St

Existing AM Peak Hour Condition
Shell Gas Station at 337 71 Street

Intersection

Intersection Delay, s/veh 2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	3	128	20	3	34	12	5	7	46	2	7	5
Conflicting Peds, #/hr	0	0	1	1	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	151	24	4	40	14	6	8	54	2	8	6

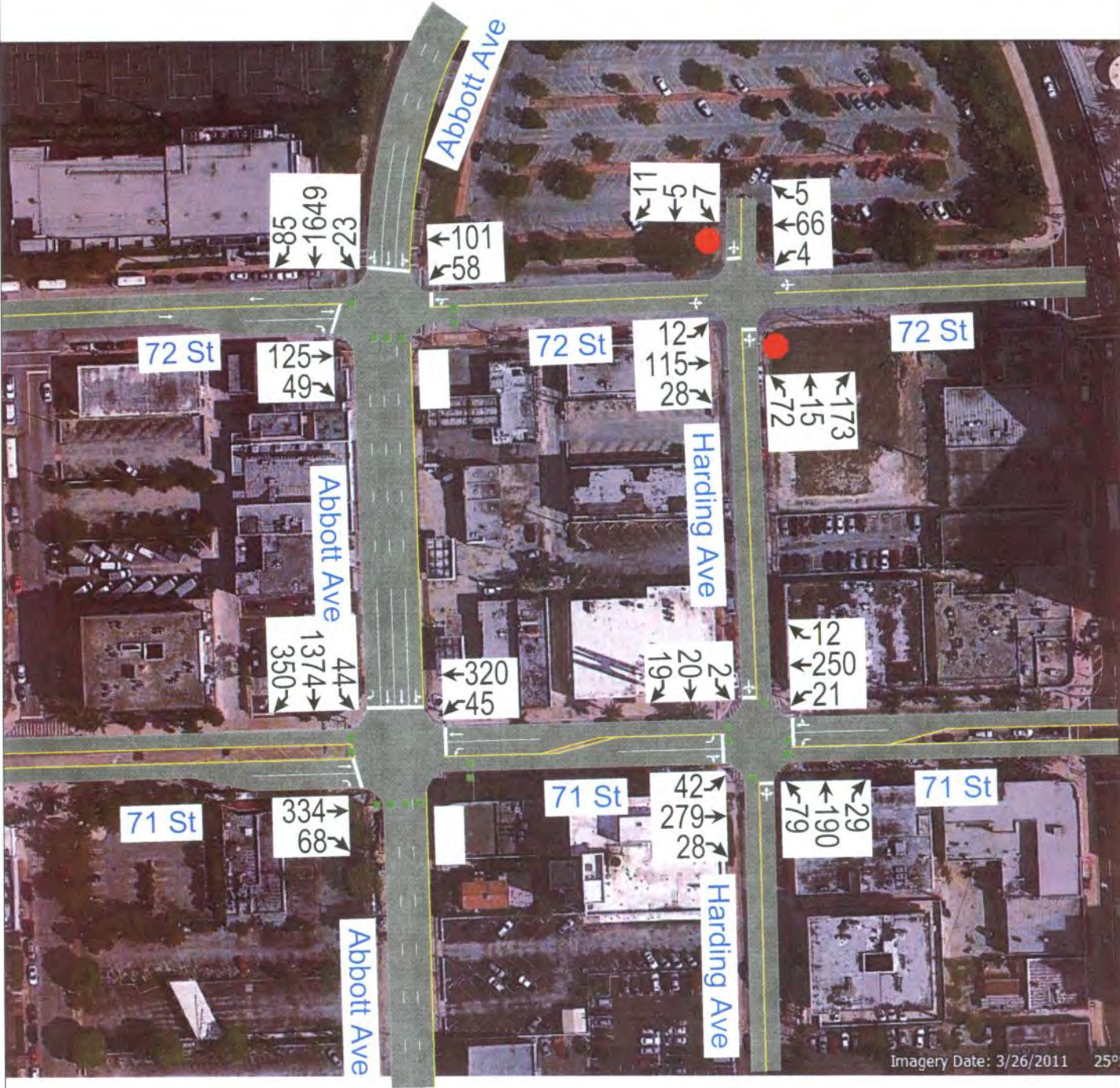
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	54	0	0	174	0	0	230	230	163	255	235	48
Stage 1	-	-	-	-	-	-	169	169	-	54	54	-
Stage 2	-	-	-	-	-	-	61	61	-	201	181	-
Follow-up Headway	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Capacity-1 Maneuver	1551	-	-	1403	-	-	725	670	882	698	666	1021
Stage 1	-	-	-	-	-	-	833	759	-	958	850	-
Stage 2	-	-	-	-	-	-	950	844	-	801	750	-
Time blocked-Platoon, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Capacity-1 Maneuver	1550	-	-	1402	-	-	710	666	881	645	662	1020
Mov Capacity-2 Maneuver	-	-	-	-	-	-	710	666	-	645	662	-
Stage 1	-	-	-	-	-	-	831	757	-	955	847	-
Stage 2	-	-	-	-	-	-	932	841	-	741	748	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.5	9.7	9.9
HCM LOS			A	A

Minor Lane / Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	831	1550	-	-	1402	-	-	754
HCM Lane V/C Ratio	0.082	0.002	-	-	0.003	-	-	0.022
HCM Control Delay (s)	9.7	7.328	0	-	7.574	0	-	9.9
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.268	0.007	-	-	0.008	-	-	0.067

Notes

~ : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined



HCM 2010 Signalized Intersection Summary

1: Abbott Ave & 71 St

Existing PM Peak Hour Condition

Shell Gas Station at 337 71 Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											   	
Volume (veh/h)	0	334	68	45	320	0	0	0	0	44	1374	350
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00				1.00		0.99
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	0.0	186.3	186.3	186.3	186.3	0.0				190.0	186.3	186.3
Lanes	0	1	1	1	1	0				0	3	1
Cap, veh/h	0	461	390	341	697	0				61	2030	555
Arrive On Green	0.00	0.25	0.25	0.02	0.12	0.00				0.37	0.37	0.37
Sat Flow, veh/h	0	1863	1574	1774	1863	0				162	5418	1482
Grp Volume(v), veh/h	0	352	72	47	337	0				528	964	368
Grp Sat Flow(s),veh/h/ln	0	1863	1574	1774	1863	0				1855	1863	1482
Q Serve(g_s), s	0.0	7.0	1.4	0.7	6.7	0.0				9.9	8.7	8.2
Cycle Q Clear(g_c), s	0.0	7.0	1.4	0.7	6.7	0.0				9.9	8.7	8.2
Prop In Lane	0.00		1.00	1.00		0.00				0.09		1.00
Lane Grp Cap(c), veh/h	0	461	390	341	697	0				695	1396	555
V/C Ratio(X)	0.00	0.76	0.18	0.14	0.48	0.00				0.76	0.69	0.66
Avail Cap(c_a), veh/h	0	1171	989	473	1546	0				2192	4402	1751
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.98	0.98	0.00				0.56	0.56	0.56
Uniform Delay (d), s/veh	0.0	13.9	11.8	10.1	13.9	0.0				10.9	10.5	10.3
Incr Delay (d2), s/veh	0.0	1.0	0.1	0.1	0.2	0.0				4.4	1.6	3.5
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 Back of Q (50%), veh/ln	0.0	2.9	0.5	0.3	3.2	0.0				4.5	3.5	2.9
Lane Grp Delay (d), s/veh	0.0	14.9	11.9	10.1	14.0	0.0				15.3	12.1	13.8
Lane Grp LOS		B	B	B	B					B	B	B
Approach Vol, veh/h		424			384						1860	
Approach Delay, s/veh		14.4			13.6						13.3	
Approach LOS		B			B						B	
Timer												
Assigned Phs		4		3	8						6	
Phs Duration (G+Y+Rc), s		14.8		5.0	19.9						19.9	
Change Period (Y+Rc), s		5.0		3.0	5.0						5.0	
Max Green Setting (Gmax), s		25.0		5.0	33.0						47.0	
Max Q Clear Time (g_c+I1), s		9.0		2.7	8.7						11.9	
Green Ext Time (p_c), s		0.2		0.0	0.2						0.8	
Intersection Summary												
HCM 2010 Ctrl Delay			13.5									
HCM 2010 LOS			B									
Notes												

Timings
1: Abbott Ave & 71 St

Existing PM Peak Hour Condition
Shell Gas Station at 337 71 Street

	→	↘	↙	←	↓	↗
Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Configurations	↑	↗	↙	↑	↗↗↗	↗
Volume (vph)	334	68	45	320	1374	350
Turn Type	NA	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		3	8	6	
Permitted Phases		4	8			6
Detector Phase	4	4	3	8	6	6
Switch Phase						
Minimum Initial (s)	4.0	4.0	5.0	4.0	4.0	4.0
Minimum Split (s)	27.0	27.0	9.0	28.0	27.0	27.0
Total Split (s)	30.0	30.0	8.0	38.0	52.0	52.0
Total Split (%)	33.3%	33.3%	8.9%	42.2%	57.8%	57.8%
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	0.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	3.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	None	None	None	None	C-Min	C-Min
Act Effct Green (s)	20.4	20.4	28.1	26.1	53.9	53.9
Actuated g/C Ratio	0.23	0.23	0.31	0.29	0.60	0.60
v/c Ratio	0.83	0.20	0.23	0.63	0.49	0.37
Control Delay	50.0	27.6	20.5	31.5	12.6	3.5
Queue Delay	0.0	0.0	0.0	6.0	0.4	0.3
Total Delay	50.0	27.6	20.5	37.5	13.0	3.8
LOS	D	C	C	D	B	A
Approach Delay	46.2			35.4	11.2	
Approach LOS	D			D	B	

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 53 (59%), Referenced to phase 2: and 6:SBTL, Start of Yellow

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.83

Intersection Signal Delay: 20.3

Intersection LOS: C

Intersection Capacity Utilization 63.2%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 1: Abbott Ave & 71 St



1: Abbott Ave & 71 St

Shell Gas Station at 337 71 Street

[illegible]

2: Harding Ave & 71 St

Existing PM Peak Hour Condition

Shell Gas Station at 337 71 Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	42	279	28	21	250	12	79	190	29	2	20	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	0.99		0.99	0.99		0.99
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	186.3	186.3	190.0	186.3	186.3	190.0	190.0	186.3	190.0	190.0	186.3	190.0
Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Cap, veh/h	472	447	45	424	432	20	245	309	43	139	227	202
Arrive On Green	0.05	0.27	0.27	0.03	0.24	0.24	0.26	0.26	0.26	0.26	0.26	0.26
Sat Flow, veh/h	1774	1664	169	1774	1765	83	332	1205	168	27	883	786
Grp Volume(v), veh/h	43	0	314	21	0	267	305	0	0	41	0	0
Grp Sat Flow(s),veh/h/ln	1774	0	1833	1774	0	1848	1704	0	0	1696	0	0
Q Serve(g_s), s	0.5	0.0	4.3	0.2	0.0	3.6	2.7	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.5	0.0	4.3	0.2	0.0	3.6	4.5	0.0	0.0	0.5	0.0	0.0
Prop In Lane	1.00		0.09	1.00		0.04	0.27		0.10	0.05		0.46
Lane Grp Cap(c), veh/h	472	0	492	424	0	453	597	0	0	567	0	0
V/C Ratio(X)	0.09	0.00	0.64	0.05	0.00	0.59	0.51	0.00	0.00	0.07	0.00	0.00
Avail Cap(c_a), veh/h	817	0	2181	811	0	2199	2265	0	0	2238	0	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)	0.44	0.00	0.44	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.1	0.0	9.2	7.9	0.0	9.5	9.5	0.0	0.0	8.1	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	2.8	0.0	0.0	5.6	0.3	0.0	0.0	0.0	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 Back of Q (50%), veh/ln	0.1	0.0	1.8	0.1	0.0	2.0	1.6	0.0	0.0	0.2	0.0	0.0
Lane Grp Delay (d), s/veh	7.1	0.0	12.0	7.9	0.0	15.1	9.8	0.0	0.0	8.1	0.0	0.0
Lane Grp LOS	A		B	A		B	A			A		
Approach Vol, veh/h		357			288			305			41	
Approach Delay, s/veh		11.4			14.6			9.8			8.1	
Approach LOS		B			B			A			A	
Timer												
Assigned Phs	5	2		1	6			8			4	
Phs Duration (G+Y+Rc), s	4.4	12.5		3.8	11.8			12.3			12.3	
Change Period (Y+Rc), s	3.0	4.8		3.0	4.8			5.0			5.0	
Max Green Setting (Gmax), s	7.0	34.0		7.0	34.0			36.0			36.0	
Max Q Clear Time (g_c+11), s	2.5	6.3		2.2	5.6			6.5			2.5	
Green Ext Time (p_c), s	0.0	0.1		0.0	0.1			0.1			0.1	
Intersection Summary												
HCM 2010 Ctrl Delay			11.7									
HCM 2010 LOS			B									

Notes

Timings
2: Harding Ave & 71 St

Existing PM Peak Hour Condition
Shell Gas Station at 337 71 Street

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	42	279	21	250	79	190	2	20
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	5	2	1	6		8		4
Permitted Phases	2		6		8		4	
Detector Phase	5	2	1	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	5.0	7.0	5.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	8.0	22.8	8.0	22.8	28.0	28.0	28.0	28.0
Total Split (s)	10.0	38.8	10.0	38.8	41.0	41.0	41.0	41.0
Total Split (%)	11.1%	43.2%	11.1%	43.2%	45.7%	45.7%	45.7%	45.7%
Yellow Time (s)	3.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	0.0	0.8	0.0	0.8	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	3.0	4.8	3.0	4.8		5.0		5.0
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Min	None	C-Min	None	None	None	None
Act Effct Green (s)	60.7	56.5	59.5	54.6		20.1		20.1
Actuated g/c Ratio	0.68	0.63	0.66	0.61		0.22		0.22
v/c Ratio	0.06	0.27	0.03	0.24		0.82		0.10
Control Delay	6.3	10.2	6.4	10.9		49.2		16.0
Queue Delay	0.0	1.8	0.0	0.0		0.0		0.0
Total Delay	6.3	12.0	6.4	10.9		49.2		16.0
LOS	A	B	A	B		D		B
Approach Delay		11.3		10.6		49.2		16.0
Approach LOS		B		B		D		B

Intersection Summary

Cycle Length: 89.8

Actuated Cycle Length: 89.8

Offset: 41 (46%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay: 23.0

Intersection LOS: C

Intersection Capacity Utilization 54.9%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 2: Harding Ave & 71 St

		
ø1	ø2 (R)	ø4
10 s	38.8 s	41 s
		
ø5	ø6 (R)	ø8
10 s	38.8 s	41 s

Queues

2: Harding Ave & 71 St

Existing PM Peak Hour Condition

Shell Gas Station at 337 71 Street



Lane Group	EBL	EBT	WBL	WBT	NBT	SBT
Lane Group Flow (vph)	43	314	21	267	305	41
v/c Ratio	0.06	0.27	0.03	0.24	0.82	0.10
Control Delay	6.3	10.2	6.4	10.9	49.2	16.0
Queue Delay	0.0	1.8	0.0	0.0	0.0	0.0
Total Delay	6.3	12.0	6.4	10.9	49.2	16.0
Queue Length 50th (ft)	7	62	3	69	161	10
Queue Length 95th (ft)	22	165	14	143	227	32
Internal Link Dist (ft)		199		220	193	289
Turn Bay Length (ft)	90		80			
Base Capacity (vph)	771	1158	756	1125	661	690
Starvation Cap Reductn	0	672	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.65	0.03	0.24	0.46	0.06

Intersection Summary

HCM 2010 Signalized Intersection Summary

3: Abbott Ave & 72 St

Existing PM Peak Hour Condition
Shell Gas Station at 337 71 Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Volume (veh/h)	0	125	49	58	101	0	0	0	0	23	1649	85
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	0.99		1.00				1.00		0.99
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	0.0	186.3	186.3	190.0	186.3	0.0				190.0	186.3	190.0
Lanes	0	1	1	0	1	0				0	3	0
Cap, veh/h	0	434	364	229	288	0				33	2527	134
Arrive On Green	0.00	0.23	0.23	0.23	0.23	0.00				0.49	0.49	0.49
Sat Flow, veh/h	0	1863	1565	397	1238	0				68	5192	275
Grp Volume(v), veh/h	0	132	52	167	0	0				660	602	587
Grp Sat Flow(s),veh/h/ln	0	1863	1565	1636	0	0				1859	1863	1812
Q Serve(g_s), s	0.0	2.1	0.9	0.3	0.0	0.0				10.2	8.8	8.9
Cycle Q Clear(g_c), s	0.0	2.1	0.9	2.8	0.0	0.0				10.2	8.8	8.9
Prop In Lane	0.00		1.00	0.37		0.00				0.04		0.15
Lane Grp Cap(c), veh/h	0	434	364	517	0	0				905	907	882
V/C Ratio(X)	0.00	0.30	0.14	0.32	0.00	0.00				0.73	0.66	0.67
Avail Cap(c_a), veh/h	0	1344	1129	1271	0	0				2787	2792	2716
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	1.00	1.00	1.00	0.00	0.00				1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	11.4	11.0	11.6	0.0	0.0				7.4	7.0	7.0
Incr Delay (d2), s/veh	0.0	0.1	0.1	0.1	0.0	0.0				5.1	3.8	3.9
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 Back of Q (50%), veh/ln	0.0	0.8	0.3	1.1	0.0	0.0				4.6	3.8	3.7
Lane Grp Delay (d), s/veh	0.0	11.6	11.0	11.8	0.0	0.0				12.5	10.8	11.0
Lane Grp LOS		B	B	B						B	B	B
Approach Vol, veh/h		184			167						1849	
Approach Delay, s/veh		11.4			11.8						11.5	
Approach LOS		B			B						B	
Timer												
Assigned Phs		4			8						6	
Phs Duration (G+Y+Rc), s		13.4			13.4						22.6	
Change Period (Y+Rc), s		5.0			5.0						5.1	
Max Green Setting (Gmax), s		26.0			26.0						54.0	
Max Q Clear Time (g_c+I1), s		4.1			4.8						12.2	
Green Ext Time (p_c), s		1.2			1.1						5.3	
Intersection Summary												
HCM 2010 Ctrl Delay			11.5									
HCM 2010 LOS			B									
Notes												

Timings
3: Abbott Ave & 72 St

Existing PM Peak Hour Condition
Shell Gas Station at 337 71 Street

	→	↘	↙	←	↓
Lane Group	EBT	EBR	WBL	WBT	SBT
Lane Configurations	↑	↗		↖	↑↑↑
Volume (vph)	125	49	58	101	1649
Turn Type	NA	Perm	Perm	NA	NA
Protected Phases	4			8	6
Permitted Phases		4	8		
Detector Phase	4	4	8	8	6
Switch Phase					
Minimum Initial (s)	7.0	7.0	7.0	7.0	5.0
Minimum Split (s)	30.0	30.0	30.0	30.0	25.1
Total Split (s)	31.0	31.0	31.0	31.0	59.1
Total Split (%)	34.4%	34.4%	34.4%	34.4%	65.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.1
Lost Time Adjust (s)	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.0	5.0		5.0	5.1
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	None	None	None	None	C-Min
Act Effct Green (s)	13.9	13.9		13.9	66.1
Actuated g/C Ratio	0.15	0.15		0.15	0.73
v/c Ratio	0.46	0.20		0.76	5.93dl
Control Delay	38.6	20.7		57.5	11.5
Queue Delay	0.0	0.0		0.0	0.0
Total Delay	38.6	20.7		57.5	11.5
LOS	D	C		E	B
Approach Delay	33.6			57.5	11.5
Approach LOS	C			E	B

Intersection Summary

Cycle Length: 90.1

Actuated Cycle Length: 90.1

Offset: 82 (91%), Referenced to phase 2: and 6:SBT, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.78

Intersection Signal Delay: 16.8

Intersection LOS: B

Intersection Capacity Utilization 70.2%

ICU Level of Service C

Analysis Period (min) 15

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 3: Abbott Ave & 72 St

↓ p6 (R)	59.1 s	→ p4	31 s
		← p8	31 s

Queues
3: Abbott Ave & 72 St

Existing PM Peak Hour Condition
Shell Gas Station at 337 71 Street



Lane Group	EBT	EBR	WBT	SBT
Lane Group Flow (vph)	132	52	167	1849
v/c Ratio	0.46	0.20	0.76	5.93dl
Control Delay	38.6	20.7	57.5	11.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	38.6	20.7	57.5	11.5
Queue Length 50th (ft)	69	13	92	196
Queue Length 95th (ft)	115	42	149	346
Internal Link Dist (ft)	86		197	160
Turn Bay Length (ft)				
Base Capacity (vph)	537	464	409	2377
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.25	0.11	0.41	0.78

Intersection Summary

- dl Defacto Left Lane. Recode with 1 though lane as a left lane.
- dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Intersection												
Intersection Delay, s/veh		7.1										
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	12	115	28	4	66	5	72	15	173	7	5	11
Conflicting Peds, #/hr	0	0	2	2	0	0	0	0	1	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	14	137	33	5	79	6	86	18	206	8	6	13
Major/Minor	Major1	Major2				Minor1			Minor2			
Conflicting Flow All	86	0	0	171	0	0	285	278	157	387	292	85
Stage 1	-	-	-	-	-	-	183	183	-	92	92	-
Stage 2	-	-	-	-	-	-	102	95	-	295	200	-
Follow-up Headway	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Capacity-1 Maneuver	1510	-	-	1406	-	-	667	630	889	572	619	974
Stage 1	-	-	-	-	-	-	819	748	-	915	819	-
Stage 2	-	-	-	-	-	-	904	816	-	713	736	-
Time blocked-Platoon, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Capacity-1 Maneuver	1507	-	-	1404	-	-	645	620	887	424	609	972
Mov Capacity-2 Maneuver	-	-	-	-	-	-	645	620	-	424	609	-
Stage 1	-	-	-	-	-	-	810	740	-	905	815	-
Stage 2	-	-	-	-	-	-	880	812	-	528	728	-
Approach	EB	WB				NB			SB			
HCM Control Delay, s	0.6	0.4				12.5			10.9			
HCM LOS						B			B			
Minor Lane / Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	786	1507	-	-	1404	-	-	638				
HCM Lane V/C Ratio	0.394	0.009	-	-	0.003	-	-	0.043				
HCM Control Delay (s)	12.5	7.412	0	-	7.573	0	-	10.9				
HCM Lane LOS	B	A	A		A	A		B				
HCM 95th %tile Q(veh)	1.889	0.029	-	-	0.01	-	-	0.134				
Notes												
~ : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined												



1: Abbott Ave & 71 St

Proposed AM Peak Hour w/o Project

Shell Gas Station at 337 71 Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	264	114	40	173	0	0	0	0	30	2379	208
Number	7	4	14	3	8	18				1	6	16
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		0.99
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	0.0	186.3	186.3	186.3	186.3	0.0				190.0	186.3	186.3
Lanes	0	1	1	1	1	0				0	3	1
Cap, veh/h	0	352	298	271	545	0				33	2796	796
Arrive On Green	0.00	0.19	0.19	0.01	0.10	0.00				0.51	0.51	0.51
Sat Flow, veh/h	0	1863	1578	1774	1863	0				65	5520	1571
Grp Volume(v), veh/h	0	272	118	41	178	0				881	1603	214
Grp Sat Flow(s),veh/h/ln	0	1863	1578	1774	1863	0				1859	1863	1571
Q Serve(g_s), s	0.0	6.9	3.3	0.9	4.4	0.0				22.1	18.6	3.9
Cycle Q Clear(g_c), s	0.0	6.9	3.3	0.9	4.4	0.0				22.1	18.6	3.9
Prop In Lane	0.00		1.00	1.00		0.00				0.04		1.00
Lane Grp Cap(c), veh/h	0	352	298	271	545	0				942	1887	796
V/C Ratio(X)	0.00	0.77	0.40	0.15	0.33	0.00				0.93	0.85	0.27
Avail Cap(c_a), veh/h	0	935	792	372	1234	0				1754	3515	1482
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.99	0.99	0.00				0.09	0.09	0.09
Uniform Delay (d), s/veh	0.0	19.2	17.7	14.8	17.9	0.0				11.5	10.6	7.0
Incr Delay (d2), s/veh	0.0	1.4	0.3	0.1	0.1	0.0				2.3	0.5	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 Back of Q (50%), veh/ln	0.0	3.1	1.2	0.3	2.1	0.0				8.9	7.0	1.2
Lane Grp Delay (d), s/veh	0.0	20.6	18.0	14.9	18.1	0.0				13.8	11.1	7.1
Lane Grp LOS		C	B	B	B					B	B	A
Approach Vol, veh/h		390			219						2698	
Approach Delay, s/veh		19.8			17.5						11.7	
Approach LOS		B			B						B	
Timer												
Assigned Phs		4		3	8						6	
Phs Duration (G+Y+Rc), s		14.4		5.2	19.6						30.2	
Change Period (Y+Rc), s		5.0		3.0	5.0						5.0	
Max Green Setting (Gmax), s		25.0		5.0	33.0						47.0	
Max Q Clear Time (g_c+I1), s		8.9		2.9	6.4						24.1	
Green Ext Time (p_c), s		0.1		0.0	0.1						1.1	
Intersection Summary												
HCM 2010 Ctrl Delay			13.0									
HCM 2010 LOS			B									
Notes												

Timings
1: Abbott Ave & 71 St

Proposed AM Peak Hour w/o Project
Shell Gas Station at 337 71 Street

	→	↘	↙	←	↓	↗
Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Configurations	↑	↗	↙	↑	↗↗↗	↗
Volume (vph)	264	114	40	173	2379	208
Turn Type	NA	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		3	8	6	
Permitted Phases		4	8			6
Detector Phase	4	4	3	8	6	6
Switch Phase						
Minimum Initial (s)	4.0	4.0	5.0	4.0	4.0	4.0
Minimum Split (s)	27.0	27.0	9.0	28.0	27.0	27.0
Total Split (s)	30.0	30.0	8.0	38.0	52.0	52.0
Total Split (%)	33.3%	33.3%	8.9%	42.2%	57.8%	57.8%
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	0.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	3.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	None	None	None	None	C-Min	C-Min
Act Effct Green (s)	16.6	16.6	23.6	21.6	58.4	58.4
Actuated g/C Ratio	0.18	0.18	0.26	0.24	0.65	0.65
v/c Ratio	0.79	0.41	0.20	0.40	0.75	0.20
Control Delay	51.0	35.3	23.6	29.3	14.8	1.9
Queue Delay	0.0	0.0	0.0	0.6	8.7	0.0
Total Delay	51.0	35.3	23.6	29.9	23.4	1.9
LOS	D	D	C	C	C	A
Approach Delay	46.3			28.8	21.7	
Approach LOS	D			C	C	

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 53 (59%), Referenced to phase 2: and 6:SBTL, Start of Yellow

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.79

Intersection Signal Delay: 25.1

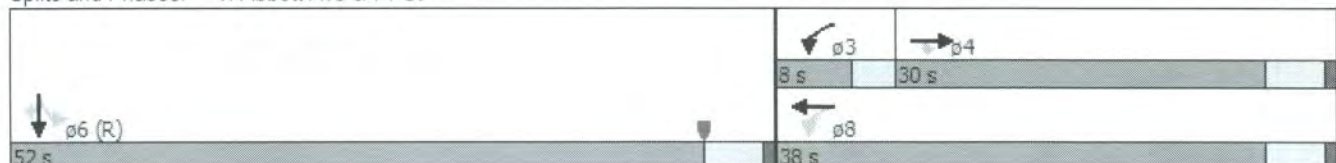
Intersection LOS: C

Intersection Capacity Utilization 78.8%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 1: Abbott Ave & 71 St



Queues

1: Abbott Ave & 71 St

Proposed AM Peak Hour w/o Project

Shell Gas Station at 337 71 Street

[illegible]

2: Harding Ave & 71 St

Proposed AM Peak Hour w/o Project

Shell Gas Station at 337 71 Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	23	257	18	12	186	4	33	73	25	15	48	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	0.99		0.99	0.99		0.99
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	186.3	186.3	190.0	186.3	186.3	190.0	190.0	186.3	190.0	190.0	186.3	190.0
Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Cap, veh/h	511	471	33	465	470	9	228	265	77	211	353	17
Arrive On Green	0.07	0.55	0.55	0.02	0.26	0.26	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	1774	1723	119	1774	1822	35	259	1114	323	199	1485	71
Grp Volume(v), veh/h	26	0	309	13	0	213	147	0	0	74	0	0
Grp Sat Flow(s),veh/h/ln	1774	0	1842	1774	0	1857	1696	0	0	1755	0	0
Q Serve(g_s), s	0.3	0.0	3.1	0.1	0.0	2.6	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.3	0.0	3.1	0.1	0.0	2.6	1.8	0.0	0.0	0.9	0.0	0.0
Prop In Lane	1.00		0.06	1.00		0.02	0.25		0.19	0.23		0.04
Lane Grp Cap(c), veh/h	511	0	504	465	0	479	570	0	0	581	0	0
V/C Ratio(X)	0.05	0.00	0.61	0.03	0.00	0.44	0.26	0.00	0.00	0.13	0.00	0.00
Avail Cap(c_a), veh/h	911	0	2306	892	0	2325	2351	0	0	2397	0	0
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.52	0.00	0.52	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.6	0.0	5.2	7.3	0.0	8.4	8.6	0.0	0.0	8.2	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	2.9	0.0	0.0	3.0	0.1	0.0	0.0	0.0	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 Back of Q (50%), veh/ln	0.1	0.0	1.2	0.0	0.0	1.3	0.6	0.0	0.0	0.3	0.0	0.0
Lane Grp Delay (d), s/veh	6.6	0.0	8.0	7.3	0.0	11.4	8.7	0.0	0.0	8.2	0.0	0.0
Lane Grp LOS	A		A	A		B	A			A		
Approach Vol, veh/h		335			226			147			74	
Approach Delay, s/veh		7.9			11.2			8.7			8.2	
Approach LOS		A			B			A			A	
Timer												
Assigned Phs	5	2		1	6			8			4	
Phs Duration (G+Y+Rc), s	3.9	12.2		3.5	11.8			11.5			11.5	
Change Period (Y+Rc), s	3.0	4.8		3.0	4.8			5.0			5.0	
Max Green Setting (Gmax), s	7.0	34.0		7.0	34.0			36.0			36.0	
Max Q Clear Time (g_c+l1), s	2.3	5.1		2.1	4.6			3.8			2.9	
Green Ext Time (p_c), s	0.0	0.1		0.0	0.1			0.1			0.1	
Intersection Summary												
HCM 2010 Ctrl Delay			9.0									
HCM 2010 LOS			A									
Notes												

Timings
2: Harding Ave & 71 St

Proposed AM Peak Hour w/o Project
Shell Gas Station at 337 71 Street

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	23	257	12	186	33	73	15	48
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	5	2	1	6		8		4
Permitted Phases	2		6		8		4	
Detector Phase	5	2	1	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	5.0	7.0	5.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	8.0	22.8	8.0	22.8	28.0	28.0	28.0	28.0
Total Split (s)	10.0	38.8	10.0	38.8	41.0	41.0	41.0	41.0
Total Split (%)	11.1%	43.2%	11.1%	43.2%	45.7%	45.7%	45.7%	45.7%
Yellow Time (s)	3.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	0.0	0.8	0.0	0.8	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	3.0	4.8	3.0	4.8		5.0		5.0
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Min	None	C-Min	None	None	None	None
Act Effct Green (s)	70.2	67.3	69.4	65.6		11.1		11.1
Actuated g/C Ratio	0.78	0.75	0.77	0.73		0.12		0.12
v/c Ratio	0.03	0.22	0.02	0.16		0.68		0.37
Control Delay	2.8	4.8	2.9	5.2		48.8		38.6
Queue Delay	0.0	1.3	0.0	0.0		0.0		0.0
Total Delay	2.8	6.0	2.9	5.2		48.8		38.6
LOS	A	A	A	A		D		D
Approach Delay		5.8		5.1		48.8		38.6
Approach LOS		A		A		D		D

Intersection Summary

Cycle Length: 89.8
 Actuated Cycle Length: 89.8
 Offset: 41 (46%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.68
 Intersection Signal Delay: 16.8
 Intersection Capacity Utilization 38.8%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service A

Splits and Phases: 2: Harding Ave & 71 St

 p1	 p2 (R)	 p4
10 s	38.8 s	41 s
 p5	 p6 (R)	 p8
10 s	38.8 s	41 s

2: Harding Ave & 71 St

Shell Gas Station at 337 71 Street



Intersection Summary

Timings
3: Abbott Ave & 72 St

Proposed AM Peak Hour w/o Project
Shell Gas Station at 337 71 Street

	→	↘	↙	←	↓
Lane Group	EBT	EBR	WBL	WBT	SBT
Lane Configurations	↑	↗		↖	↑↑↑↓
Volume (vph)	123	53	16	33	2563
Turn Type	NA	Perm	Perm	NA	NA
Protected Phases	4			8	6
Permitted Phases		4	8		
Detector Phase	4	4	8	8	6
Switch Phase					
Minimum Initial (s)	7.0	7.0	7.0	7.0	5.0
Minimum Split (s)	30.0	30.0	30.0	30.0	25.1
Total Split (s)	31.0	31.0	31.0	31.0	59.1
Total Split (%)	34.4%	34.4%	34.4%	34.4%	65.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.1
Lost Time Adjust (s)	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.0	5.0		5.0	5.1
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	None	None	None	None	C-Min
Act Effct Green (s)	10.8	10.8		10.8	69.2
Actuated g/C Ratio	0.12	0.12		0.12	0.77
v/c Ratio	0.58	0.27		0.27	9.50dl
Control Delay	47.4	25.4		38.3	78.1
Queue Delay	0.0	0.0		0.0	0.0
Total Delay	47.4	25.4		38.3	78.1
LOS	D	C		D	E
Approach Delay	40.7			38.3	78.1
Approach LOS	D			D	E

Intersection Summary

Cycle Length: 90.1
 Actuated Cycle Length: 90.1
 Offset: 82 (91%), Referenced to phase 2: and 6:SBT, Start of Yellow
 Natural Cycle: 150
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.13
 Intersection Signal Delay: 75.1
 Intersection Capacity Utilization 86.1%
 Analysis Period (min) 15
 dl Defacto Left Lane. Recode with 1 though lane as a left lane.
 dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 3: Abbott Ave & 72 St



	→	↘	←	↓
Lane Group	EBT	EBR	WBT	SBT
Lane Group Flow (vph)	129	56	52	2817
v/c Ratio	0.58	0.27	0.27	9.50dl
Control Delay	47.4	25.4	38.3	78.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	47.4	25.4	38.3	78.1
Queue Length 50th (ft)	71	16	27	~688
Queue Length 95th (ft)	121	49	59	#821
Internal Link Dist (ft)	86		197	160
Turn Bay Length (ft)				
Base Capacity (vph)	537	463	462	2497
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.24	0.12	0.11	1.13

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- dl Defacto Left Lane. Recode with 1 though lane as a left lane.
- dr Defacto Right Lane. Recode with 1 though lane as a right lane.

HCM 2010 TWSC
4: Harding Ave/Public Parking & 72 St

Proposed AM Peak Hour w/o Project
Shell Gas Station at 337 71 Street

Intersection

Intersection Delay, s/veh 2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	3	133	21	3	35	13	5	7	48	2	7	5
Conflicting Peds, #/hr	0	0	1	1	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	156	25	4	41	15	6	8	56	2	8	6

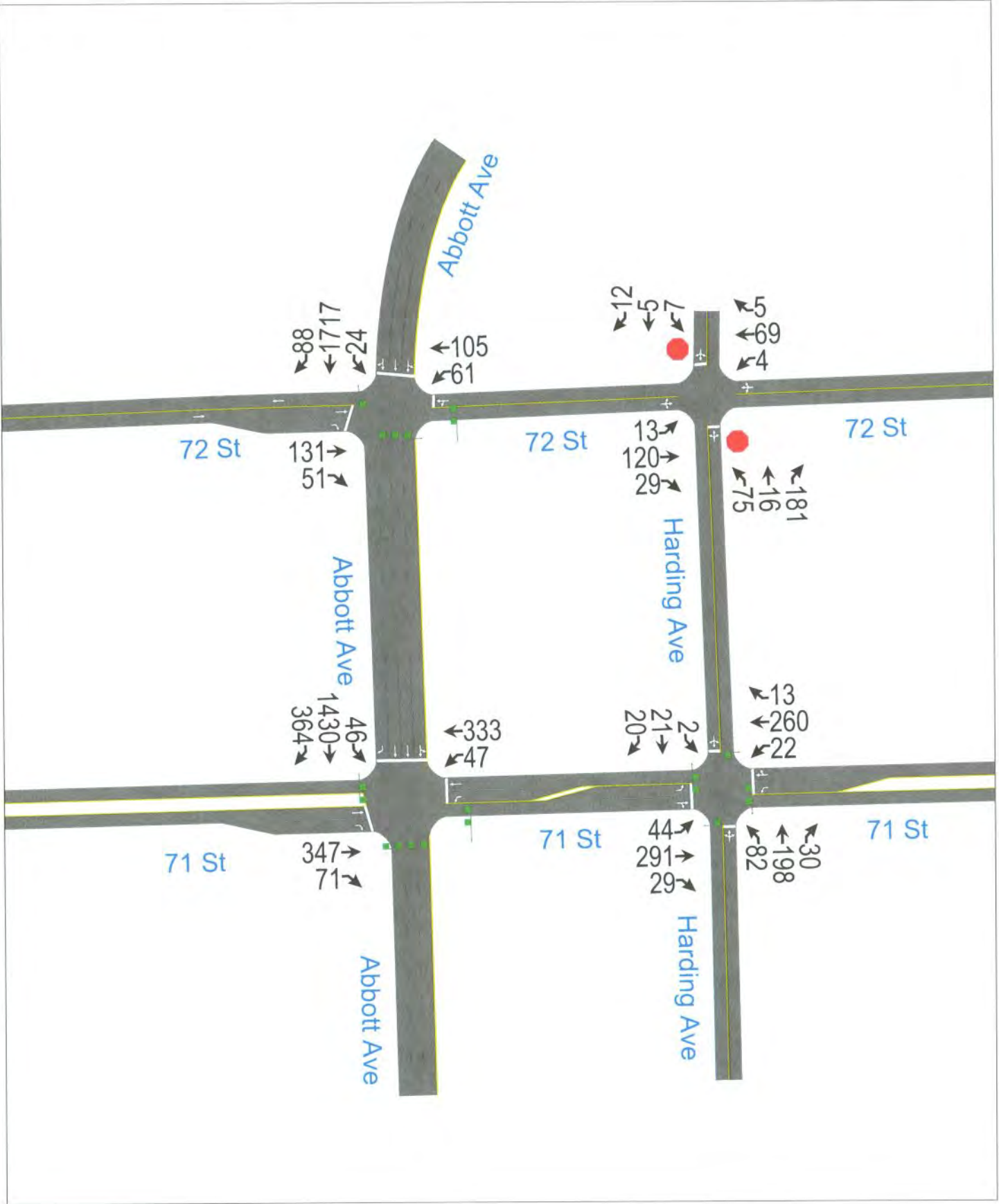
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	56	0	0	181	0	0	239	240	170	264	244	50
Stage 1	-	-	-	-	-	-	176	176	-	56	56	-
Stage 2	-	-	-	-	-	-	63	64	-	208	188	-
Follow-up Headway	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Capacity-1 Maneuver	1549	-	-	1394	-	-	715	661	874	689	658	1018
Stage 1	-	-	-	-	-	-	826	753	-	956	848	-
Stage 2	-	-	-	-	-	-	948	842	-	794	745	-
Time blocked-Platoon, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Capacity-1 Maneuver	1548	-	-	1393	-	-	700	657	873	635	654	1017
Mov Capacity-2 Maneuver	-	-	-	-	-	-	700	657	-	635	654	-
Stage 1	-	-	-	-	-	-	824	751	-	953	845	-
Stage 2	-	-	-	-	-	-	930	839	-	732	743	-

Approach	EB		WB		NB		SB
HCM Control Delay, s	0.1		0.4		9.8		9.9
HCM LOS					A		A

Minor Lane / Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	824	1548	-	-	1393	-	-	746
HCM Lane V/C Ratio	0.086	0.002	-	-	0.003	-	-	0.022
HCM Control Delay (s)	9.8	7.331	0	-	7.591	0	-	9.9
HCM Lane LOS	A	A	A		A	A		A
HCM 95th %tile Q(veh)	0.28	0.007	-	-	0.008	-	-	0.068

Notes

~ : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined



HCM 2010 Signalized Intersection Summary

1: Abbott Ave & 71 St

Proposed PM Peak Hour w/o Project
Shell Gas Station at 337 71 Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Volume (veh/h)	0	347	71	47	333	0	0	0	0	46	1430	364
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00				1.00		0.94
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	0.0	186.3	186.3	186.3	186.3	0.0				190.0	186.3	186.3
Lanes	0	1	1	1	1	0				0	3	1
Cap, veh/h	0	470	397	333	702	0				62	2059	564
Arrive On Green	0.00	0.25	0.25	0.02	0.12	0.00				0.38	0.38	0.38
Sat Flow, veh/h	0	1863	1574	1774	1863	0				162	5418	1483
Grp Volume(v), veh/h	0	365	75	49	351	0				549	1004	383
Grp Sat Flow(s),veh/h/ln	0	1863	1574	1774	1863	0				1855	1863	1483
Q Serve(g_s), s	0.0	7.5	1.5	0.8	7.2	0.0				10.7	9.4	8.9
Cycle Q Clear(g_c), s	0.0	7.5	1.5	0.8	7.2	0.0				10.7	9.4	8.9
Prop In Lane	0.00		1.00	1.00		0.00				0.09		1.00
Lane Grp Cap(c), veh/h	0	470	397	333	702	0				705	1415	564
V/C Ratio(X)	0.00	0.78	0.19	0.15	0.50	0.00				0.78	0.71	0.68
Avail Cap(c_a), veh/h	0	1131	956	456	1493	0				2118	4254	1694
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.98	0.98	0.00				0.50	0.50	0.50
Uniform Delay (d), s/veh	0.0	14.3	12.1	10.4	14.4	0.0				11.2	10.8	10.7
Incr Delay (d2), s/veh	0.0	1.1	0.1	0.1	0.2	0.0				4.3	1.5	3.3
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 Back of Q (50%), veh/ln	0.0	3.1	0.5	0.3	3.5	0.0				4.8	3.9	3.2
Lane Grp Delay (d), s/veh	0.0	15.4	12.2	10.5	14.6	0.0				15.6	12.4	14.0
Lane Grp LOS		B	B	B	B					B	B	B
Approach Vol, veh/h		440			400						1936	
Approach Delay, s/veh		14.8			14.1						13.6	
Approach LOS		B			B						B	
Timer												
Assigned Phs		4		3	8						6	
Phs Duration (G+Y+Rc), s		15.4		5.1	20.5						20.6	
Change Period (Y+Rc), s		5.0		3.0	5.0						5.0	
Max Green Setting (Gmax), s		25.0		5.0	33.0						47.0	
Max Q Clear Time (g_c+I1), s		9.5		2.8	9.2						12.7	

Timings
1: Abbott Ave & 71 St

Proposed PM Peak Hour w/o Project
Shell Gas Station at 337 71 Street

	→	↘	↙	←	↓	↖
Lane Group	EBT	EBR	WBL	WBT	SBT	SBR
Lane Configurations	↑	↗	↖	↑	↗↖↗	↗
Volume (vph)	347	71	47	333	1430	364
Turn Type	NA	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		3	8	6	
Permitted Phases		4	8			6
Detector Phase	4	4	3	8	6	6
Switch Phase						
Minimum Initial (s)	4.0	4.0	5.0	4.0	4.0	4.0
Minimum Split (s)	27.0	27.0	9.0	28.0	27.0	27.0
Total Split (s)	30.0	30.0	8.0	38.0	52.0	52.0
Total Split (%)	33.3%	33.3%	8.9%	42.2%	57.8%	57.8%
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	0.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	3.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	None	None	None	None	C-Min	C-Min
Act Effct Green (s)	21.0	21.0	28.7	26.7	53.3	53.3
Actuated g/C Ratio	0.23	0.23	0.32	0.30	0.59	0.59
v/c Ratio	0.84	0.21	0.24	0.64	0.52	0.39
Control Delay	49.9	27.2	20.3	31.4	13.3	4.3
Queue Delay	0.0	0.0	0.0	8.1	0.5	0.4
Total Delay	49.9	27.2	20.3	39.5	13.8	4.7
LOS	D	C	C	D	B	A
Approach Delay	46.0			37.1	12.0	
Approach LOS	D			D	B	

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 53 (59%), Referenced to phase 2: and 6:SBTL, Start of Yellow

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.84

Intersection Signal Delay: 21.0

Intersection LOS: C

Intersection Capacity Utilization 64.9%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 1: Abbott Ave & 71 St



1: Abbott Ave & 71 St

Shell Gas Station at 337 71 Street

[illegible]

HCM 2010 Signalized Intersection Summary

2: Harding Ave & 71 St

Proposed PM Peak Hour w/o Project

Shell Gas Station at 337 71 Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	44	291	29	22	260	13	82	198	30	2	21	20
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	0.99		0.99	0.99		0.99
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	186.3	186.3	190.0	186.3	186.3	190.0	190.0	186.3	190.0	190.0	186.3	190.0
Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Cap, veh/h	465	447	45	416	430	21	245	309	43	138	227	203
Arrive On Green	0.05	0.27	0.27	0.03	0.24	0.24	0.26	0.26	0.26	0.26	0.26	0.26
Sat Flow, veh/h	1774	1665	168	1774	1761	86	334	1202	167	26	881	789
Grp Volume(v), veh/h	45	0	327	22	0	278	317	0	0	43	0	0
Grp Sat Flow(s),veh/h/ln	1774	0	1833	1774	0	1847	1703	0	0	1696	0	0
Q Serve(g_s), s	0.5	0.0	4.6	0.3	0.0	3.8	3.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.5	0.0	4.6	0.3	0.0	3.8	4.8	0.0	0.0	0.5	0.0	0.0
Prop In Lane	1.00		0.09	1.00		0.05	0.26		0.10	0.05		0.47
Lane Grp Cap(c), veh/h	465	0	492	416	0	451	597	0	0	568	0	0
V/C Ratio(X)	0.10	0.00	0.66	0.05	0.00	0.62	0.53	0.00	0.00	0.08	0.00	0.00
Avail Cap(c_a), veh/h	805	0	2172	799	0	2189	2255	0	0	2229	0	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)	0.43	0.00	0.43	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.2	0.0	9.3	8.0	0.0	9.7	9.6	0.0	0.0	8.1	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	3.0	0.0	0.0	6.2	0.3	0.0	0.0	0.0	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 Back of Q (50%), veh/ln	0.2	0.0	2.0	0.1	0.0	2.1	1.6	0.0	0.0	0.2	0.0	0.0
Lane Grp Delay (d), s/veh	7.2	0.0	12.4	8.0	0.0	15.9	9.9	0.0	0.0	8.1	0.0	0.0
Lane Grp LOS	A		B	A		B	A			A		
Approach Vol, veh/h		372			300			317			43	
Approach Delay, s/veh		11.8			15.3			9.9			8.1	
Approach LOS		B			B			A			A	
Timer												
Assigned Phs	5	2		1	6			8			4	
Phs Duration (G+Y+Rc), s	4.5	12.5		3.8	11.8			12.4			12.4	
Change Period (Y+Rc), s	3.0	4.8		3.0	4.8			5.0			5.0	
Max Green Setting (Gmax), s	7.0	34.0		7.0	34.0			36.0			36.0	
Max Q Clear Time (g_c+I1), s	2.5	6.6		2.3	5.8			6.8			2.5	
Green Ext Time (p_c), s	0.0	0.1		0.0	0.1			0.1			0.1	
Intersection Summary												
HCM 2010 Ctrl Delay			12.1									
HCM 2010 LOS			B									
Notes												

Timings
2: Harding Ave & 71 St

Proposed PM Peak Hour w/o Project
Shell Gas Station at 337 71 Street

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	44	291	22	260	82	198	2	21
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	5	2	1	6		8		4
Permitted Phases	2		6		8		4	
Detector Phase	5	2	1	6	8	8	4	4
Switch Phase								
Minimum Initial (s)	5.0	7.0	5.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	8.0	22.8	8.0	22.8	28.0	28.0	28.0	28.0
Total Split (s)	10.0	38.8	10.0	38.8	41.0	41.0	41.0	41.0
Total Split (%)	11.1%	43.2%	11.1%	43.2%	45.7%	45.7%	45.7%	45.7%
Yellow Time (s)	3.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	0.0	0.8	0.0	0.8	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0		0.0
Total Lost Time (s)	3.0	4.8	3.0	4.8		5.0		5.0
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Min	None	C-Min	None	None	None	None
Act Effct Green (s)	59.9	55.7	58.8	53.8		20.9		20.9
Actuated g/C Ratio	0.67	0.62	0.65	0.60		0.23		0.23
v/c Ratio	0.06	0.29	0.03	0.25		0.82		0.11
Control Delay	6.6	10.8	6.7	11.5		48.3		15.5
Queue Delay	0.0	2.0	0.0	0.0		0.0		0.0
Total Delay	6.6	12.7	6.7	11.5		48.3		15.5
LOS	A	B	A	B		D		B
Approach Delay		12.0		11.1		48.3		15.5
Approach LOS		B		B		D		B

Intersection Summary

Cycle Length: 89.8

Actuated Cycle Length: 89.8

Offset: 41 (46%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay: 23.1

Intersection LOS: C

Intersection Capacity Utilization 56.2%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 2: Harding Ave & 71 St

		
10 s	38.8 s	41 s
		
10 s	38.8 s	41 s

2: Harding Ave & 71 St

Shell Gas Station at 337 71 Street

[illegible]

3: Abbott Ave & 72 St

Shell Gas Station at 337 71 Street

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↑		↑						↑↑↑	
Volume (veh/h)	0	131	51	61	105	0	0	0	0	24	1717	88
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	0.99		1.00				1.00		0.99
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	0.0	186.3	186.3	190.0	186.3	0.0				190.0	186.3	190.0
Lanes	0	1	1	0	1	0				0	3	0
Cap, veh/h	0	425	357	225	279	0				34	2596	138
Arrive On Green	0.00	0.23	0.23	0.23	0.23	0.00				0.50	0.50	0.50
Sat Flow, veh/h	0	1863	1565	404	1223	0				68	5191	276
Grp Volume(v), veh/h	0	138	54	175	0	0				687	626	611
Grp Sat Flow(s),veh/h/ln	0	1863	1565	1627	0	0				1859	1863	1812
Q Serve(g_s), s	0.0	2.3	1.0	0.7	0.0	0.0				10.9	9.4	9.5
Cycle Q Clear(g_c), s	0.0	2.3	1.0	3.1	0.0	0.0				10.9	9.4	9.5
Prop In Lane	0.00		1.00	0.37		0.00				0.04		0.15
Lane Grp Cap(c), veh/h	0	425	357	504	0	0				930	932	906
V/C Ratio(X)	0.00	0.32	0.15	0.35	0.00	0.00				0.74	0.67	0.67
Avail Cap(c_a), veh/h	0	1303	1094	1227	0	0				2701	2706	2632
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	1.00	1.00	1.00	0.00	0.00				1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	12.0	11.5	12.2	0.0	0.0				7.4	7.0	7.0
Incr Delay (d2), s/veh	0.0	0.2	0.1	0.2	0.0	0.0				5.3	3.9	4.0
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 Back of Q (50%), veh/ln	0.0	0.9	0.3	1.2	0.0	0.0				5.0	4.1	4.1
Lane Grp Delay (d), s/veh	0.0	12.1	11.5	12.4	0.0	0.0				12.6	10.9	11.0
Lane Grp LOS		B	B	B						B	B	B
Approach Vol, veh/h		192			175						1925	
Approach Delay, s/veh		12.0			12.4						11.5	
Approach LOS		B			B						B	
Timer												
Assigned Phs		4			8						6	
Phs Duration (G+Y+Rc), s		13.5			13.5						23.7	
Change Period (Y+Rc), s		5.0			5.0						5.1	
Max Green Setting (Gmax), s		26.0			26.0						54.0	
Max Q Clear Time (g_c+I1), s		4.3			5.1						12.9	
Green Ext Time (p_c), s		1.2			1.2						5.6	
Intersection Summary												
HCM 2010 Ctrl Delay			11.6									
HCM 2010 LOS			B									

Notes

Timings
3: Abbott Ave & 72 St

Proposed PM Peak Hour w/o Project
Shell Gas Station at 337 71 Street

	→	↘	↙	←	↓
Lane Group	EBT	EBR	WBL	WBT	SBT
Lane Configurations	↑	↗		↖	↑↑↑
Volume (vph)	131	51	61	105	1717
Turn Type	NA	Perm	Perm	NA	NA
Protected Phases	4			8	6
Permitted Phases		4	8		
Detector Phase	4	4	8	8	6
Switch Phase					
Minimum Initial (s)	7.0	7.0	7.0	7.0	5.0
Minimum Split (s)	30.0	30.0	30.0	30.0	25.1
Total Split (s)	31.0	31.0	31.0	31.0	59.1
Total Split (%)	34.4%	34.4%	34.4%	34.4%	65.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.1
Lost Time Adjust (s)	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.0	5.0		5.0	5.1
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	None	None	None	None	C-Min
Act Effect Green (s)	14.5	14.5		14.5	65.5
Actuated g/C Ratio	0.16	0.16		0.16	0.73
v/c Ratio	0.46	0.20		0.78	6.20dl
Control Delay	38.2	20.8		59.2	13.2
Queue Delay	0.0	0.0		0.0	0.0
Total Delay	38.2	20.8		59.2	13.2
LOS	D	C		E	B
Approach Delay	33.3			59.2	13.2
Approach LOS	C			E	B

Intersection Summary

Cycle Length: 90.1

Actuated Cycle Length: 90.1

Offset: 82 (91%), Referenced to phase 2: and 6: SBT, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay: 18.4

Intersection LOS: B

Intersection Capacity Utilization 72.1%

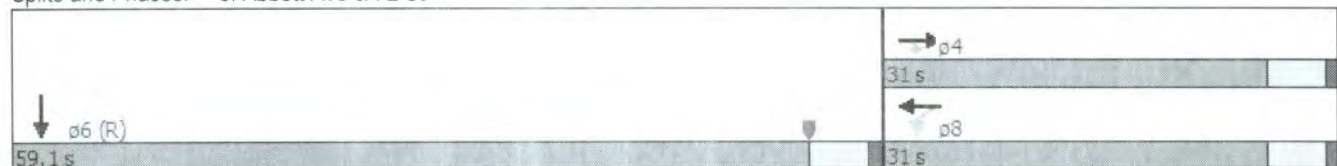
ICU Level of Service C

Analysis Period (min) 15

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 3: Abbott Ave & 72 St



Queues
3: Abbott Ave & 72 St

Proposed PM Peak Hour w/o Project
Shell Gas Station at 337 71 Street



Lane Group	EBT	EBR	WBT	SBT
Lane Group Flow (vph)	138	54	175	1925
v/c Ratio	0.46	0.20	0.78	6.20dl
Control Delay	38.2	20.8	59.2	13.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	38.2	20.8	59.2	13.2
Queue Length 50th (ft)	72	14	97	223
Queue Length 95th (ft)	118	43	156	#398
Internal Link Dist (ft)	86		197	160
Turn Bay Length (ft)				
Base Capacity (vph)	537	464	401	2358
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.26	0.12	0.44	0.82

Intersection Summary

- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- dl Defacto Left Lane. Recode with 1 though lane as a left lane.
- dr Defacto Right Lane. Recode with 1 though lane as a right lane.

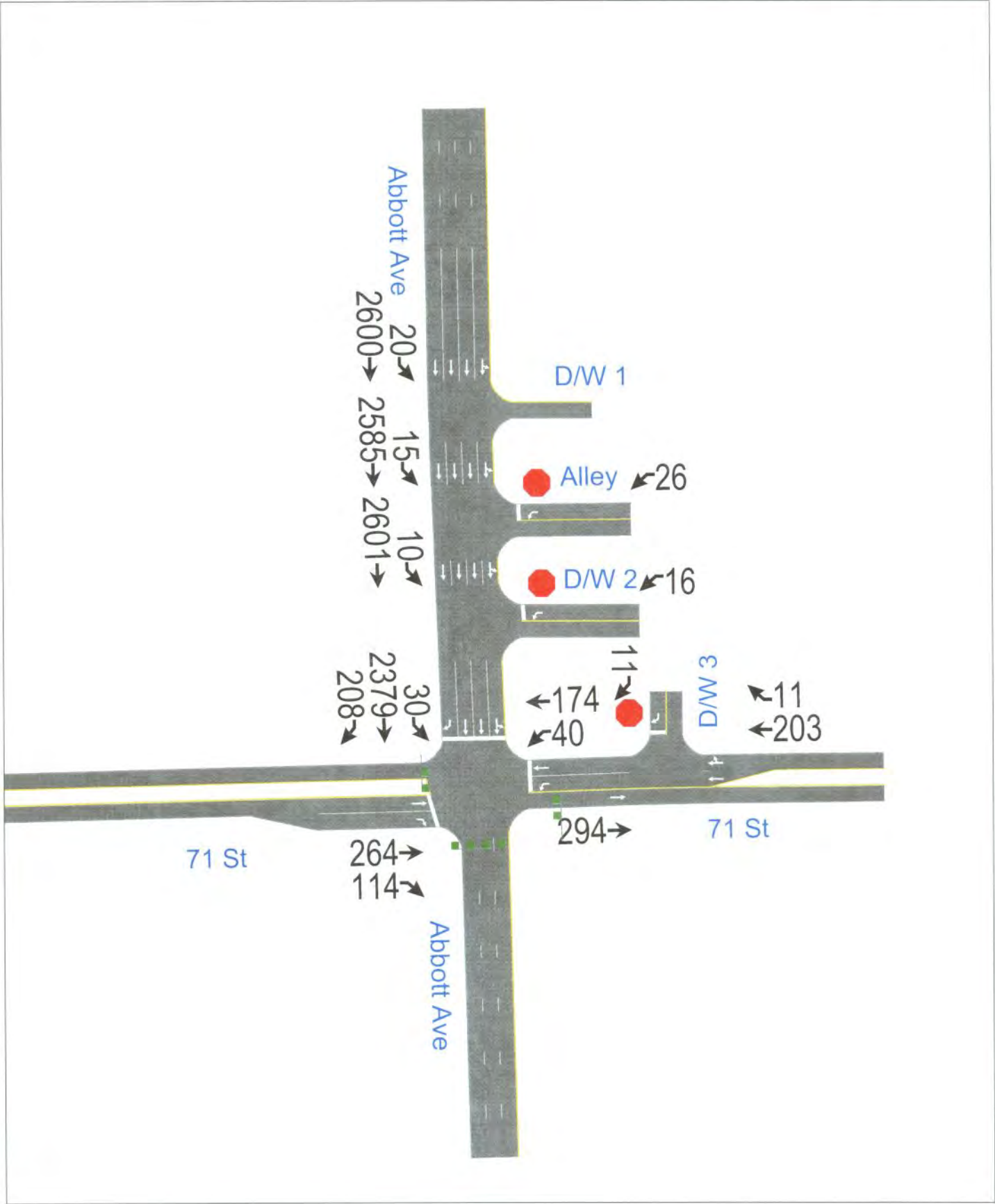
HCM 2010 TWSC
4: Harding Ave/Public Parking & 72 St

Proposed PM Peak Hour w/o Project
Shell Gas Station at 337 71 Street

Intersection												
Intersection Delay, s/veh		7.3										
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	13	120	29	4	69	5	75	16	181	7	5	12
Conflicting Peds, #/hr	0	0	2	2	0	0	0	0	1	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	15	143	35	5	82	6	89	19	215	8	6	14
Major/Minor	Major1		Major2			Minor1			Minor2			
Conflicting Flow All	89	0	0	178	0	0	298	291	163	405	305	88
Stage 1	-	-	-	-	-	-	192	192	-	96	96	-
Stage 2	-	-	-	-	-	-	106	99	-	309	209	-
Follow-up Headway	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Capacity-1 Maneuver	1506	-	-	1398	-	-	654	619	882	556	608	970
Stage 1	-	-	-	-	-	-	810	742	-	911	815	-
Stage 2	-	-	-	-	-	-	900	813	-	701	729	-
Time blocked-Platoon, %		-	-		-	-						
Mov Capacity-1 Maneuver	1503	-	-	1396	-	-	631	609	880	404	598	968
Mov Capacity-2 Maneuver	-	-	-	-	-	-	631	609	-	404	598	-
Stage 1	-	-	-	-	-	-	800	733	-	900	811	-
Stage 2	-	-	-	-	-	-	875	809	-	509	720	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	0.6		0.4			12.9			11			
HCM LOS						B			B			
Minor Lane / Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	775	1503	-	-	1396	-	-	630				
HCM Lane V/C Ratio	0.418	0.01	-	-	0.003	-	-	0.045				
HCM Control Delay (s)	12.9	7.42	0	-	7.588	0	-	11				
HCM Lane LOS	B	A	A		A	A		B				
HCM 95th %tile Q(veh)	2.077	0.031	-	-	0.01	-	-	0.142				

Notes

~ : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined



HCM Unsignalized Intersection Capacity Analysis
5: Abbott Ave & D/W 1

AM Peak Hour Driveway Trips
Shell Gas Station at 337 71 Street

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	0	0	0	20	2600
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	0	0	0	0	24	3059
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (ft)			287			
pX, platoon unblocked						
vC, conflicting volume	812	0			0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	812	0			0	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			99	
cM capacity (veh/h)	312	1084			1622	
Direction, Lane #	SB 1	SB 2	SB 3	SB 4		
Volume Total	461	874	874	874		
Volume Left	24	0	0	0		
Volume Right	0	0	0	0		
cSH	1622	1700	1700	1700		
Volume to Capacity	0.01	0.51	0.51	0.51		
Queue Length 95th (ft)	1	0	0	0		
Control Delay (s)	0.5	0.0	0.0	0.0		
Lane LOS	A					
Approach Delay (s)	0.1					
Approach LOS						
Intersection Summary						
Average Delay		0.1				
Intersection Capacity Utilization		41.3%		ICU Level of Service		A
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis
6: Abbott Ave & Alley

AM Peak Hour Driveway Trips
Shell Gas Station at 337 71 Street

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						   
Volume (veh/h)	26	0	0	0	15	2585
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	31	0	0	0	18	3041
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (ft)			204			
pX, platoon unblocked						
vC, conflicting volume	796	0			0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	796	0			0	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	90	100			99	
cM capacity (veh/h)	321	1084			1622	
Direction, Lane #	WB 1	SB 1	SB 2	SB 3	SB 4	
Volume Total	31	452	869	869	869	
Volume Left	31	18	0	0	0	
Volume Right	0	0	0	0	0	
cSH	321	1622	1700	1700	1700	
Volume to Capacity	0.10	0.01	0.51	0.51	0.51	
Queue Length 95th (ft)	8	1	0	0	0	
Control Delay (s)	17.4	0.4	0.0	0.0	0.0	
Lane LOS	C	A				
Approach Delay (s)	17.4	0.1				
Approach LOS	C					
Intersection Summary						
Average Delay			0.2			
Intersection Capacity Utilization			47.7%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

7: Abbott Ave & D/W 2

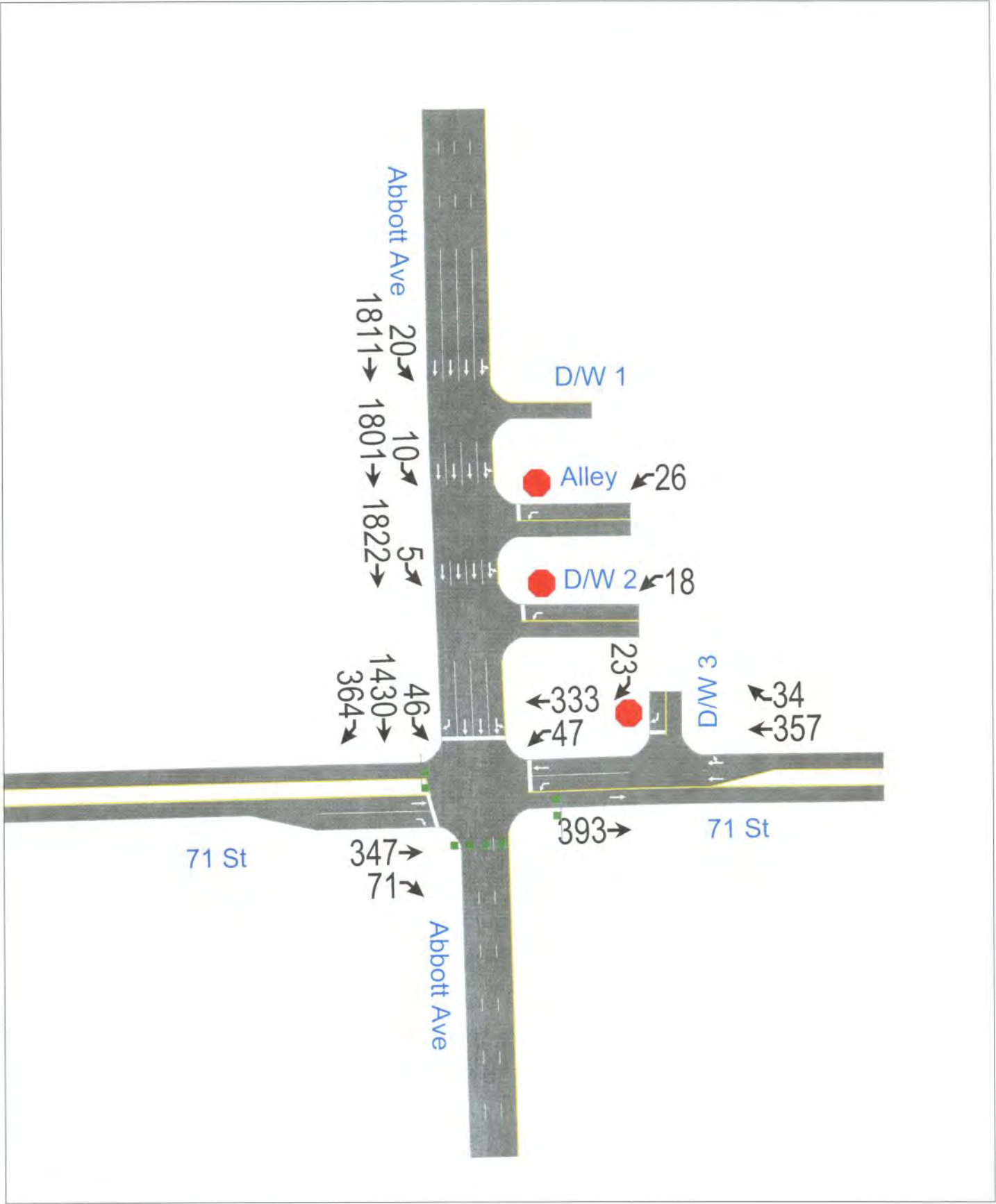
AM Peak Hour Driveway Trips
Shell Gas Station at 337 71 Street

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						   
Volume (veh/h)	16	0	0	0	10	2601
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	19	0	0	0	12	3060
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (ft)			129			
pX, platoon unblocked						
vC, conflicting volume	789	0			0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	789	0			0	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	94	100			99	
cM capacity (veh/h)	326	1084			1622	
Direction, Lane #	WB 1	SB 1	SB 2	SB 3	SB 4	
Volume Total	19	449	874	874	874	
Volume Left	19	12	0	0	0	
Volume Right	0	0	0	0	0	
cSH	326	1622	1700	1700	1700	
Volume to Capacity	0.06	0.01	0.51	0.51	0.51	
Queue Length 95th (ft)	5	1	0	0	0	
Control Delay (s)	16.7	0.3	0.0	0.0	0.0	
Lane LOS	C	A				
Approach Delay (s)	16.7	0.0				
Approach LOS	C					
Intersection Summary						
Average Delay			0.1			
Intersection Capacity Utilization			47.8%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
8: 71 St & D/W 3

AM Peak Hour Driveway Trips
Shell Gas Station at 337 71 Street

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑↑↗			↗↑
Volume (veh/h)	0	294	203	11	0	11
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	0	346	239	13	0	13
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)		120				
pX, platoon unblocked					0.86	
vC, conflicting volume	252				591	126
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	252				444	126
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	99
cM capacity (veh/h)	1311				467	901
Direction, Lane #	EB 1	WB 1	WB 2	SB 1		
Volume Total	346	159	93	13		
Volume Left	0	0	0	0		
Volume Right	0	0	13	13		
cSH	1700	1700	1700	901		
Volume to Capacity	0.20	0.09	0.05	0.01		
Queue Length 95th (ft)	0	0	0	1		
Control Delay (s)	0.0	0.0	0.0	9.1		
Lane LOS				A		
Approach Delay (s)	0.0	0.0		9.1		
Approach LOS				A		
Intersection Summary						
Average Delay			0.2			
Intersection Capacity Utilization			18.8%		ICU Level of Service	A
Analysis Period (min)			15			



HCM Unsignalized Intersection Capacity Analysis
5: Abbott Ave & D/W 1

PM Peak Hour Driveway Trips
Shell Gas Station at 337 71 Street

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						↑↑↑↑
Volume (veh/h)	0	0	0	0	20	1811
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	0	0	0	0	24	2131
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (ft)			287			
pX, platoon unblocked						
vC, conflicting volume	580	0			0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	580	0			0	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			99	
cM capacity (veh/h)	439	1084			1622	
Direction, Lane #	SB 1	SB 2	SB 3	SB 4		
Volume Total	328	609	609	609		
Volume Left	24	0	0	0		
Volume Right	0	0	0	0		
cSH	1622	1700	1700	1700		
Volume to Capacity	0.01	0.36	0.36	0.36		
Queue Length 95th (ft)	1	0	0	0		
Control Delay (s)	0.6	0.0	0.0	0.0		
Lane LOS	A					
Approach Delay (s)	0.1					
Approach LOS						
Intersection Summary						
Average Delay			0.1			
Intersection Capacity Utilization			29.9%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
6: Abbott Ave & Alley

PM Peak Hour Driveway Trips
Shell Gas Station at 337 71 Street

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	26	0	0	0	10	1801
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	31	0	0	0	12	2119
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (ft)			204			
pX, platoon unblocked						
vC, conflicting volume	553	0			0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	553	0			0	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	93	100			99	
cM capacity (veh/h)	459	1084			1622	
Direction, Lane #	WB 1	SB 1	SB 2	SB 3	SB 4	
Volume Total	31	314	605	605	605	
Volume Left	31	12	0	0	0	
Volume Right	0	0	0	0	0	
cSH	459	1622	1700	1700	1700	
Volume to Capacity	0.07	0.01	0.36	0.36	0.36	
Queue Length 95th (ft)	5	1	0	0	0	
Control Delay (s)	13.4	0.3	0.0	0.0	0.0	
Lane LOS	B	A				
Approach Delay (s)	13.4	0.0				
Approach LOS	B					
Intersection Summary						
Average Delay			0.2			
Intersection Capacity Utilization			36.3%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis 7: Abbott Ave & D/W 2

PM Peak Hour Driveway Trips
Shell Gas Station at 337 71 Street

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						   
Volume (veh/h)	18	0	0	0	5	1822
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	21	0	0	0	6	2144
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (ft)			129			
pX, platoon unblocked						
vC, conflicting volume	548	0			0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	548	0			0	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	95	100			100	
cM capacity (veh/h)	465	1084			1622	
Direction, Lane #	WB 1	SB 1	SB 2	SB 3	SB 4	
Volume Total	21	312	612	612	612	
Volume Left	21	6	0	0	0	
Volume Right	0	0	0	0	0	
cSH	465	1622	1700	1700	1700	
Volume to Capacity	0.05	0.00	0.36	0.36	0.36	
Queue Length 95th (ft)	4	0	0	0	0	
Control Delay (s)	13.1	0.2	0.0	0.0	0.0	
Lane LOS	B	A				
Approach Delay (s)	13.1	0.0				
Approach LOS	B					
Intersection Summary						
Average Delay			0.2			
Intersection Capacity Utilization			36.5%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
8: 71 St & D/W 3

PM Peak Hour Driveway Trips
Shell Gas Station at 337 71 Street

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑↑↔			↗
Volume (veh/h)	0	393	357	34	0	23
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	0	462	420	40	0	27
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)		120				
pX, platoon unblocked					0.81	
vC, conflicting volume	460				902	230
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	460				764	230
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	96
cM capacity (veh/h)	1097				276	772
Direction, Lane #	EB 1	WB 1	WB 2	SB 1		
Volume Total	462	280	180	27		
Volume Left	0	0	0	0		
Volume Right	0	0	40	27		
cSH	1700	1700	1700	772		
Volume to Capacity	0.27	0.16	0.11	0.04		
Queue Length 95th (ft)	0	0	0	3		
Control Delay (s)	0.0	0.0	0.0	9.8		
Lane LOS				A		
Approach Delay (s)	0.0	0.0		9.8		
Approach LOS				A		
Intersection Summary						
Average Delay		0.3				
Intersection Capacity Utilization		24.0%		ICU Level of Service	A	
Analysis Period (min)		15				

Appendix 6: Traffic Study Methodology



Memorandum of Understanding (MOU)

To: Xavier Falconi, P.E.
Miami Beach
Planning Department
1700 Convention Center Drive
Miami Beach, Florida 33139

From: Richard Garcia, P.E.
Richard Garcia & Associates, Inc.
8065 NW 98th Street
Hialeah Gardens, Florida 33016

Date: October 12th, 2013

SUBJECT: Traffic Study Methodology for the Shell Gas Station at 337 71st Street

Based on the subject project location and proposed land use, we have prepared a traffic methodology for your approval. Please review and confirm if this methodology is acceptable in order for us to proceed with data collection and analyses. Should you need clarification or wish to discuss this further please do not hesitate to contact me.

Project Location / Description

The subject site is located on the northeast corner of 71st Street and Abbott Avenue at the 337 71st Street in the City of Miami Beach, Florida. The project consists of the following land uses (LU):

Existing Land Use

- LU 944: Gasoline/Service Station with 8 Vehicle Fueling Positions (VFP)

Proposed Land Use

- LU 946: Gasoline/Service Station with Convenience Market & Car Wash with 8 Vehicle Fueling Positions (VFP)

Based on our preliminary Trip Generation analysis, this project is expected to generate **3 external net new vehicle trips for the AM peak hour** and **zero external net new peak hour trips for the PM peak hour**. The exhibits included herewith depict the subject project location and trip generation analysis. As such, we are proposing the following traffic study methodology:

Traffic Study Methodology

- Trip Generation / Trip Distribution / Trip Assignment
 - All trip generation information will be based on the 9th Edition of the ITE Trip Generation Manual.
 - Trip Distribution and Assignment shall be based on the Traffic Analysis Zone (TAZ) for the project location. Trips will be distributed using the current adopted Miami Dade MPO Long Range Transportation Plan (SERPM).

- Traffic Counts
 - Two-hour (2) AM peak period TMC's (7:00 AM – 9:00 AM) and Two-hour (2) PM peak period TMC's (4:00 PM – 6:00 PM) including trucks and pedestrians will be performed at the following intersections:
 1. **71st Street & Abbott Avenue** (Signalized)
 2. **71st Street & Harding Avenue** (Signalized)
 3. **72nd Street & Abbott Avenue** (Signalized)
 4. **72nd Street & Harding Avenue** (Unsignalized)
 - Traffic signals shall be identified by Miami-Dade County Asset ID. Existing Signal Phasing/Timing shall be utilized in the analysis.
- Committed Development / Background Growth
 - All committed development within the study area shall be quantified as provided by the City of Miami Beach.
 - Existing traffic will be adjusted with an annual growth factor for the future condition. The growth factor will be determined utilizing the available FDOT and Miami-Dade County historical data.
- Build Out Year (2015)
 - This represents a date in the future in which the facility/ development will be operational.
- Level of Service (LOS)
 - Intersection capacity /LOS will be performed based on HCM methodology and using Synchro. Such analysis will provide the results for the Level of Service (LOS), volume to capacity ratio (V/C) and other outputs such as Vehicular Delay. Lastly, the proposed driveways will be evaluated for LOS.
 - Driveway analysis will be performed at the project's vehicular access points.
 - Above analysis will be performed for the following conditions:
 1. Existing Condition Base Year (2013)
 2. Proposed Future Condition without Project (2015)
 3. Proposed Future Condition with Project (2015)

The above will be depicted with graphics in the traffic report.

- Miscellaneous Information
 - Include any future roadway improvements within the project's vicinity based on FDOT and TIP.
 - Review the site plan and document internal conflicts, if any.
 - Include a section in the report describing the proposed Transportation Demand Management (TDM) plan.
 - This traffic study should also discuss the proximity of the site to the nearest DecoBike station so visitors and employees would be able to take advantage of. Transit availability should also be included.



LAND USE (LU)	UNITS	AM / PM PEAK HOUR					
		ITE LU CODE	PEAK HOUR	ITE TRIP GENERATION RATE	TRIPS		
					IN	OUT	TOTAL
Existing							
Gasoline/Service Station	8 V.F.P.	944	AM	12.16	50	48	98
			PM	13.87	56	55	111
Proposed							
Gasoline/Service Station with Convenience Market and Car Wash	8 V.F.P.	946	AM	11.84	48	47	95
			PM	13.86	57	54	111
External Net New Vehicle Trips (Proposed - Existing Trips)					-2	-1	-3
					1	-1	0
NOTES: Sources: ITE Trip Generation, 9th Edition & ITE Trip Generation Handbook, 2nd Edition. Highest Peak Hour							