

# Appendix for Traffic Impact Study

## Convenience Store and Gas Station

360 Boston Post Road

Darien, CT

Prepared by  
**McMahon Associates, Inc.**  
94 North Elm Street, Suite 301F  
Westfield, MA 01085  
413.875.8855

Prepared for  
**Bohler Engineering**

July 2020



## **APPENDIX A**

### **Traffic Count Data**



Connecticut DOT  
P.O. Box 317546

Newington, Connecticut, United States 06131  
(860) 594-2087 gary.sojka@ct.gov

Count Name: Project 1770: Project 0173-0461,  
Darien, 10-27  
Site Code: 207 Post Road (356128)  
Start Date: 10/27/2016  
Page No: 1

### Turning Movement Data

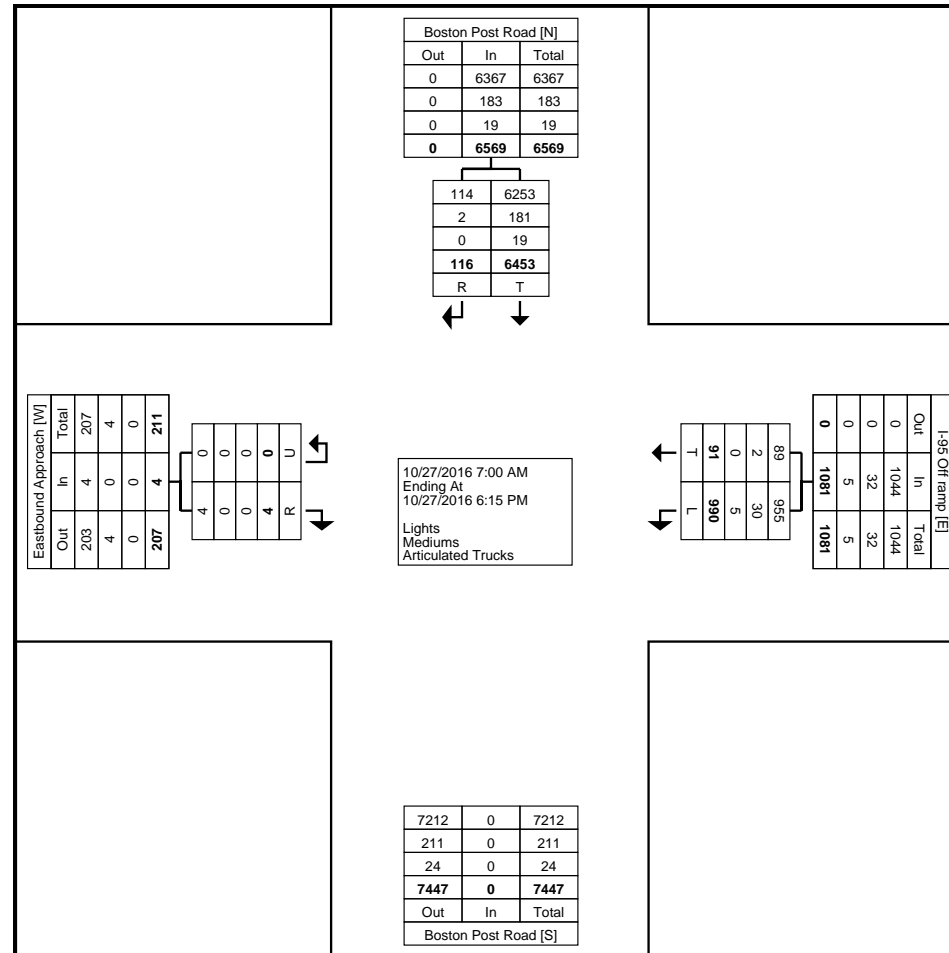
Start Time	Boston Post Road Southbound			I-95 Off ramp Westbound			Eastbound Approach Eastbound			Int. Total
	Right	Thru	App. Total	Thru	Left	App. Total	Right	U-Turn	App. Total	
7:00 AM	5	175	180	2	55	57	0	0	0	237
7:15 AM	4	259	263	2	31	33	0	0	0	296
7:30 AM	8	288	296	1	36	37	0	0	0	333
7:45 AM	9	315	324	6	44	50	0	0	0	374
Hourly Total	26	1037	1063	11	166	177	0	0	0	1240
8:00 AM	6	312	318	7	38	45	0	0	0	363
8:15 AM	4	336	340	6	33	39	0	0	0	379
8:30 AM	8	340	348	1	30	31	0	0	0	379
8:45 AM	6	318	324	4	38	42	0	0	0	366
Hourly Total	24	1306	1330	18	139	157	0	0	0	1487
9:00 AM	0	1	1	0	0	0	0	0	0	1
*** BREAK ***	-	-	-	-	-	-	-	-	-	-
Hourly Total	0	1	1	0	0	0	0	0	0	1
11:00 AM	3	228	231	5	38	43	0	0	0	274
11:15 AM	4	285	289	3	40	43	1	0	1	333
11:30 AM	2	287	289	4	40	44	2	0	2	335
11:45 AM	11	260	271	3	55	58	0	0	0	329
Hourly Total	20	1060	1080	15	173	188	3	0	3	1271
12:00 PM	3	287	290	1	36	37	0	0	0	327
12:15 PM	2	292	294	3	64	67	0	0	0	361
12:30 PM	1	279	280	2	60	62	0	0	0	342
12:45 PM	5	319	324	4	41	45	0	0	0	369
Hourly Total	11	1177	1188	10	201	211	0	0	0	1399
1:00 PM	0	1	1	0	0	0	0	0	0	1
*** BREAK ***	-	-	-	-	-	-	-	-	-	-
Hourly Total	0	1	1	0	0	0	0	0	0	1
4:00 PM	2	211	213	2	31	33	0	0	0	246
4:15 PM	3	237	240	5	33	38	1	0	1	279
4:30 PM	7	229	236	3	35	38	0	0	0	274
4:45 PM	3	218	221	4	43	47	0	0	0	268
Hourly Total	15	895	910	14	142	156	1	0	1	1067
5:00 PM	5	256	261	4	31	35	0	0	0	296
5:15 PM	6	234	240	6	40	46	0	0	0	286
5:30 PM	3	280	283	7	46	53	0	0	0	336
5:45 PM	6	206	212	6	52	58	0	0	0	270
Hourly Total	20	976	996	23	169	192	0	0	0	1188
6:00 PM	0	0	0	0	0	0	0	0	0	0
Grand Total	116	6453	6569	91	990	1081	4	0	4	7654
Approach %	1.8	98.2	-	8.4	91.6	-	100.0	0.0	-	-

Total %	1.5	84.3	85.8	1.2	12.9	14.1	0.1	0.0	0.1	-
Lights	114	6253	6367	89	955	1044	4	0	4	7415
% Lights	98.3	96.9	96.9	97.8	96.5	96.6	100.0	-	100.0	96.9
Mediums	2	181	183	2	30	32	0	0	0	215
% Mediums	1.7	2.8	2.8	2.2	3.0	3.0	0.0	-	0.0	2.8
Articulated Trucks	0	19	19	0	5	5	0	0	0	24
% Articulated Trucks	0.0	0.3	0.3	0.0	0.5	0.5	0.0	-	0.0	0.3

Connecticut DOT  
P.O. Box 317546

Newington, Connecticut, United States 06131  
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Count Name: Project 1770: Project 0173-0461,  
Darien, 10-27  
Site Code: 207 Post Road (356128)  
Start Date: 10/27/2016  
Page No: 3



Turning Movement Data Plot

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Start Date: 10/27/2016  
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### Turning Movement Peak Hour Data (7:45 AM)

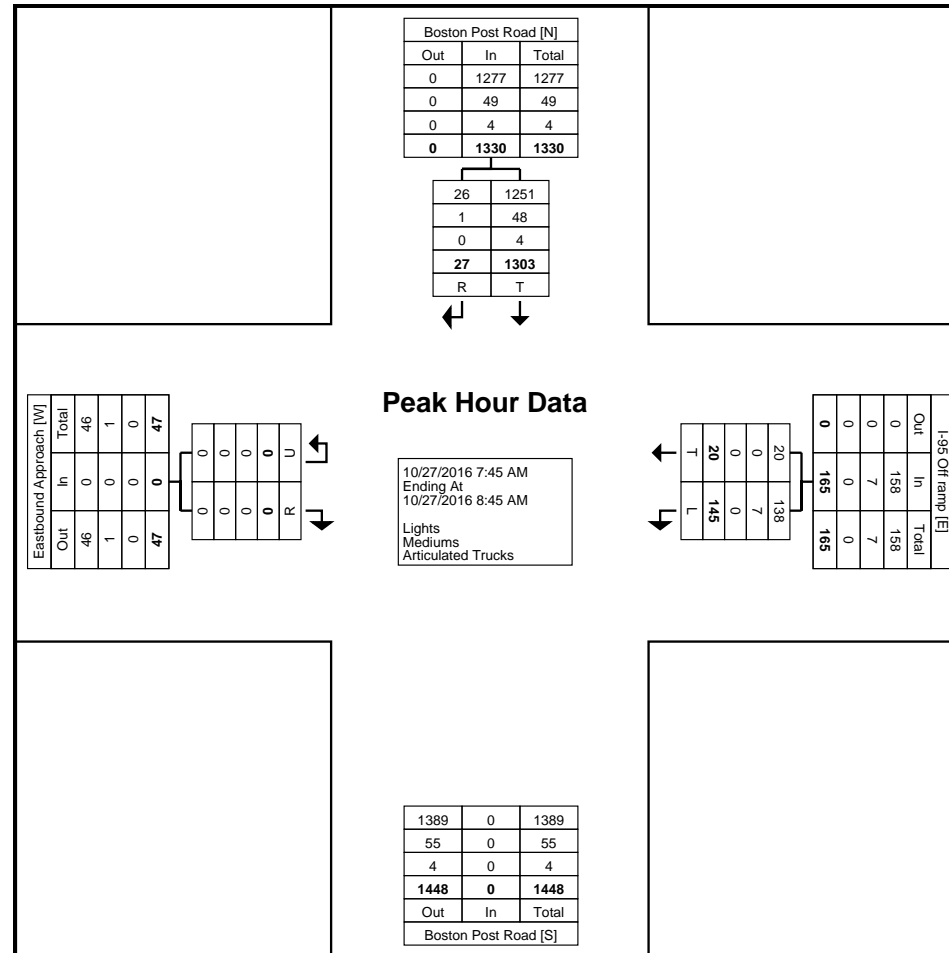
Start Time	Boston Post Road Southbound			I-95 Off ramp Westbound			Eastbound Approach Eastbound			Int. Total
	Right	Thru	App. Total	Thru	Left	App. Total	Right	U-Turn	App. Total	
7:45 AM	9	315	324	6	44	50	0	0	0	374
8:00 AM	6	312	318	7	38	45	0	0	0	363
8:15 AM	4	336	340	6	33	39	0	0	0	379
8:30 AM	8	340	348	1	30	31	0	0	0	379
Total	27	1303	1330	20	145	165	0	0	0	1495
Approach %	2.0	98.0	-	12.1	87.9	-	0.0	0.0	-	-
Total %	1.8	87.2	89.0	1.3	9.7	11.0	0.0	0.0	0.0	-
PHF	0.750	0.958	0.955	0.714	0.824	0.825	0.000	0.000	0.000	0.986
Lights	26	1251	1277	20	138	158	0	0	0	1435
% Lights	96.3	96.0	96.0	100.0	95.2	95.8	-	-	-	96.0
Mediums	1	48	49	0	7	7	0	0	0	56
% Mediums	3.7	3.7	3.7	0.0	4.8	4.2	-	-	-	3.7
Articulated Trucks	0	4	4	0	0	0	0	0	0	4
% Articulated Trucks	0.0	0.3	0.3	0.0	0.0	0.0	-	-	-	0.3



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Page No: 6

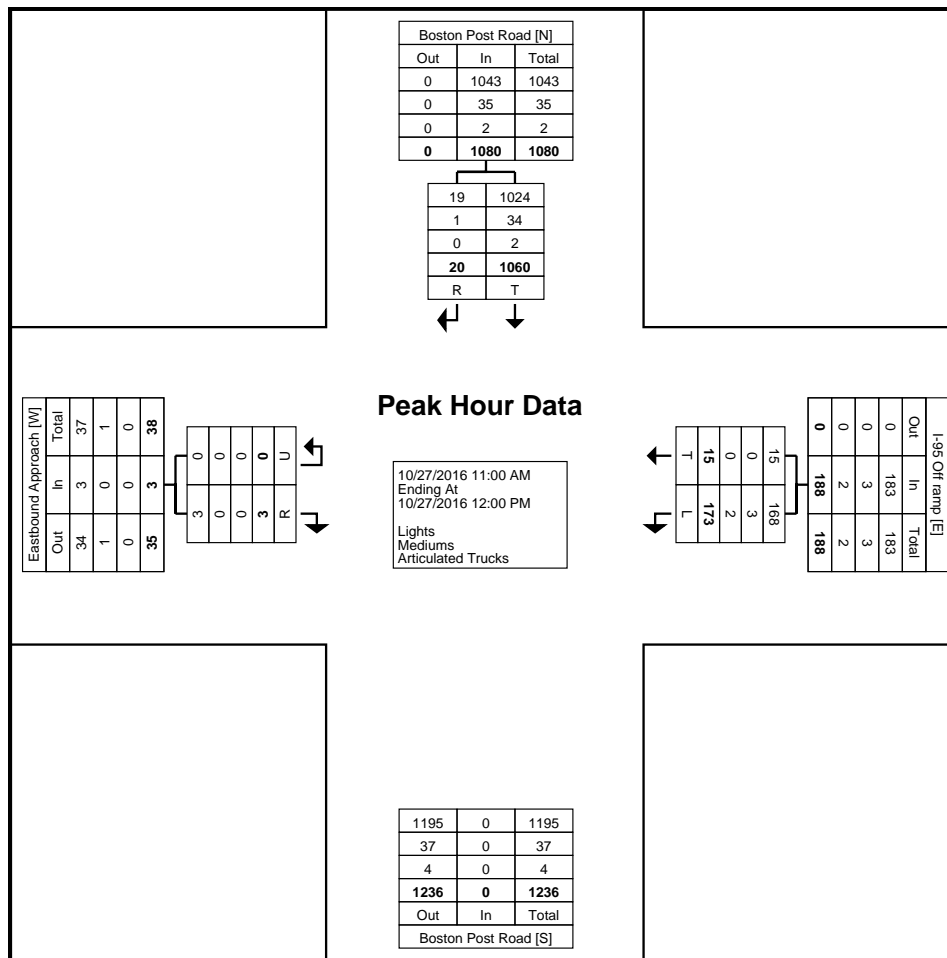
### Turning Movement Peak Hour Data (11:00 AM)

Start Time	Boston Post Road Southbound			I-95 Off ramp Westbound			Eastbound Approach Eastbound			Int. Total
	Right	Thru	App. Total	Thru	Left	App. Total	Right	U-Turn	App. Total	
11:00 AM	3	228	231	5	38	43	0	0	0	274
11:15 AM	4	285	289	3	40	43	1	0	1	333
11:30 AM	2	287	289	4	40	44	2	0	2	335
11:45 AM	11	260	271	3	55	58	0	0	0	329
Total	20	1060	1080	15	173	188	3	0	3	1271
Approach %	1.9	98.1	-	8.0	92.0	-	100.0	0.0	-	-
Total %	1.6	83.4	85.0	1.2	13.6	14.8	0.2	0.0	0.2	-
PHF	0.455	0.923	0.934	0.750	0.786	0.810	0.375	0.000	0.375	0.949
Lights	19	1024	1043	15	168	183	3	0	3	1229
% Lights	95.0	96.6	96.6	100.0	97.1	97.3	100.0	-	100.0	96.7
Mediums	1	34	35	0	3	3	0	0	0	38
% Mediums	5.0	3.2	3.2	0.0	1.7	1.6	0.0	-	0.0	3.0
Articulated Trucks	0	2	2	0	2	2	0	0	0	4
% Articulated Trucks	0.0	0.2	0.2	0.0	1.2	1.1	0.0	-	0.0	0.3

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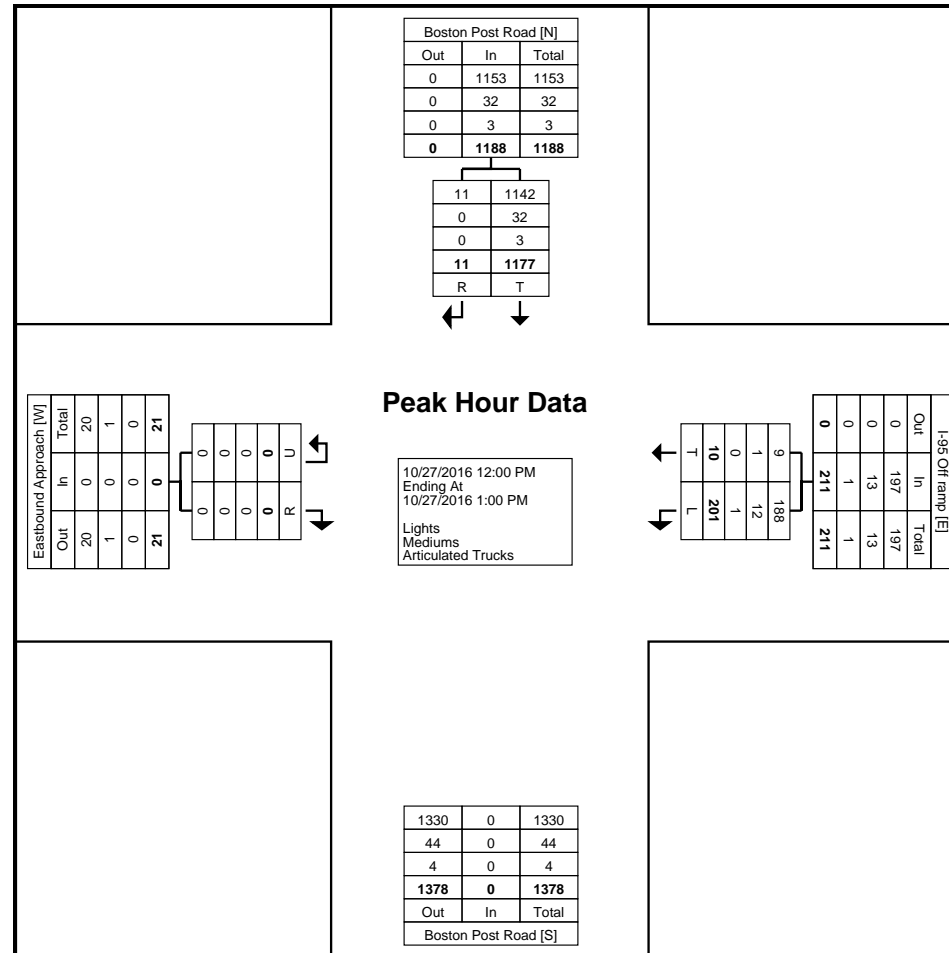
### Turning Movement Peak Hour Data (12:00 PM)

Start Time	Boston Post Road Southbound			I-95 Off ramp Westbound			Eastbound Approach Eastbound			Int. Total
	Right	Thru	App. Total	Thru	Left	App. Total	Right	U-Turn	App. Total	
12:00 PM	3	287	290	1	36	37	0	0	0	327
12:15 PM	2	292	294	3	64	67	0	0	0	361
12:30 PM	1	279	280	2	60	62	0	0	0	342
12:45 PM	5	319	324	4	41	45	0	0	0	369
Total	11	1177	1188	10	201	211	0	0	0	1399
Approach %	0.9	99.1	-	4.7	95.3	-	0.0	0.0	-	-
Total %	0.8	84.1	84.9	0.7	14.4	15.1	0.0	0.0	0.0	-
PHF	0.550	0.922	0.917	0.625	0.785	0.787	0.000	0.000	0.000	0.948
Lights	11	1142	1153	9	188	197	0	0	0	1350
% Lights	100.0	97.0	97.1	90.0	93.5	93.4	-	-	-	96.5
Mediums	0	32	32	1	12	13	0	0	0	45
% Mediums	0.0	2.7	2.7	10.0	6.0	6.2	-	-	-	3.2
Articulated Trucks	0	3	3	0	1	1	0	0	0	4
% Articulated Trucks	0.0	0.3	0.3	0.0	0.5	0.5	-	-	-	0.3

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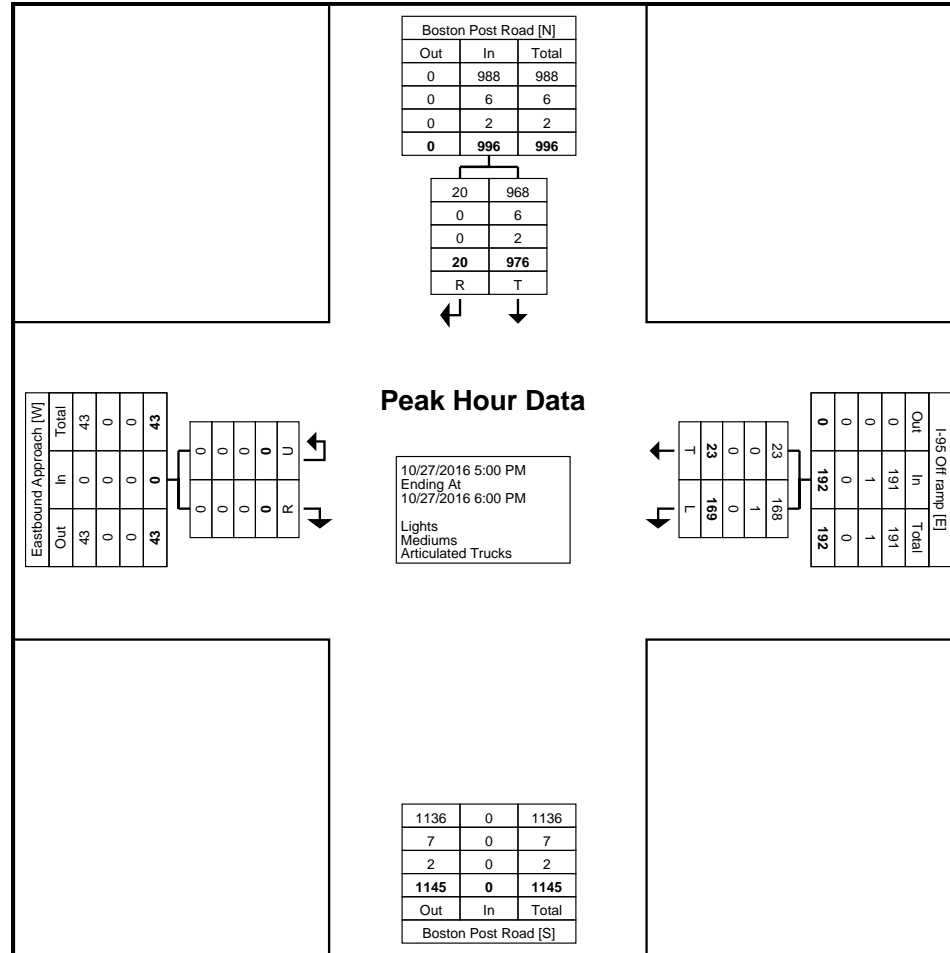
### Turning Movement Peak Hour Data (5:00 PM)

Start Time	Boston Post Road Southbound			I-95 Off ramp Westbound			Eastbound Approach Eastbound			Int. Total
	Right	Thru	App. Total	Thru	Left	App. Total	Right	U-Turn	App. Total	
5:00 PM	5	256	261	4	31	35	0	0	0	296
5:15 PM	6	234	240	6	40	46	0	0	0	286
5:30 PM	3	280	283	7	46	53	0	0	0	336
5:45 PM	6	206	212	6	52	58	0	0	0	270
Total	20	976	996	23	169	192	0	0	0	1188
Approach %	2.0	98.0	-	12.0	88.0	-	0.0	0.0	-	-
Total %	1.7	82.2	83.8	1.9	14.2	16.2	0.0	0.0	0.0	-
PHF	0.833	0.871	0.880	0.821	0.813	0.828	0.000	0.000	0.000	0.884
Lights	20	968	988	23	168	191	0	0	0	1179
% Lights	100.0	99.2	99.2	100.0	99.4	99.5	-	-	-	99.2
Mediums	0	6	6	0	1	1	0	0	0	7
% Mediums	0.0	0.6	0.6	0.0	0.6	0.5	-	-	-	0.6
Articulated Trucks	0	2	2	0	0	0	0	0	0	2
% Articulated Trucks	0.0	0.2	0.2	0.0	0.0	0.0	-	-	-	0.2

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Page No: 11



Turning Movement Peak Hour Data Plot (5:00 PM)

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Page No: 12



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Count Name: Darien- US 1 at I-95 Exit 13 SB  
On-Ramp  
Site Code:  
Start Date: 06/29/2016  
Page No: 1

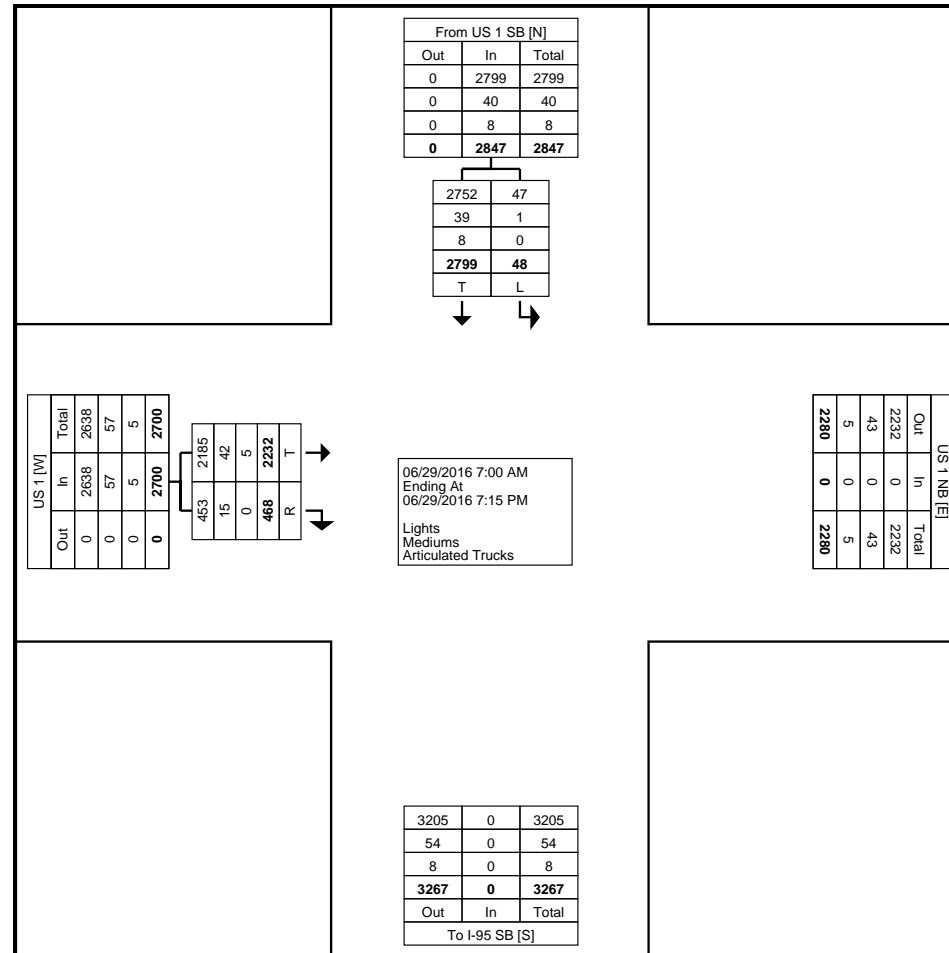
### Turning Movement Data

Start Time	From US 1 SB Southbound			US 1 Eastbound			Int. Total
	Thru	Left	App. Total	Right	Thru	App. Total	
7:00 AM	122	0	122	18	30	48	170
7:15 AM	145	4	149	21	30	51	200
7:30 AM	150	0	150	36	39	75	225
7:45 AM	147	3	150	28	41	69	219
Hourly Total	564	7	571	103	140	243	814
8:00 AM	154	2	156	43	56	99	255
8:15 AM	183	1	184	36	53	89	273
8:30 AM	199	0	199	38	80	118	317
8:45 AM	152	2	154	23	66	89	243
Hourly Total	688	5	693	140	255	395	1088
9:00 AM	0	0	0	0	0	0	0
*** BREAK ***	-	-	-	-	-	-	-
Hourly Total	0	0	0	0	0	0	0
4:00 PM	117	3	120	16	163	179	299
4:15 PM	119	5	124	12	141	153	277
4:30 PM	104	3	107	16	150	166	273
4:45 PM	149	4	153	21	156	177	330
Hourly Total	489	15	504	65	610	675	1179
5:00 PM	127	2	129	35	170	205	334
5:15 PM	139	5	144	19	185	204	348
5:30 PM	145	2	147	13	178	191	338
5:45 PM	125	5	130	17	177	194	324
Hourly Total	536	14	550	84	710	794	1344
6:00 PM	142	1	143	21	142	163	306
6:15 PM	122	2	124	24	137	161	285
6:30 PM	120	2	122	11	119	130	252
6:45 PM	138	2	140	20	119	139	279
Hourly Total	522	7	529	76	517	593	1122
7:00 PM	0	0	0	0	0	0	0
Grand Total	2799	48	2847	468	2232	2700	5547
Approach %	98.3	1.7	-	17.3	82.7	-	-
Total %	50.5	0.9	51.3	8.4	40.2	48.7	-
Lights	2752	47	2799	453	2185	2638	5437
% Lights	98.3	97.9	98.3	96.8	97.9	97.7	98.0
Mediums	39	1	40	15	42	57	97
% Mediums	1.4	2.1	1.4	3.2	1.9	2.1	1.7
Articulated Trucks	8	0	8	0	5	5	13
% Articulated Trucks	0.3	0.0	0.3	0.0	0.2	0.2	0.2

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Count Name: Darien- US 1 at I-95 Exit 13 SB  
On-Ramp  
Site Code:  
Start Date: 06/29/2016  
Page No: 2



Turning Movement Data Plot

Connecticut DOT  
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Count Name: Darien- US 1 at I-95 Exit 13 SB  
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Site Code:  
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Page No: 3

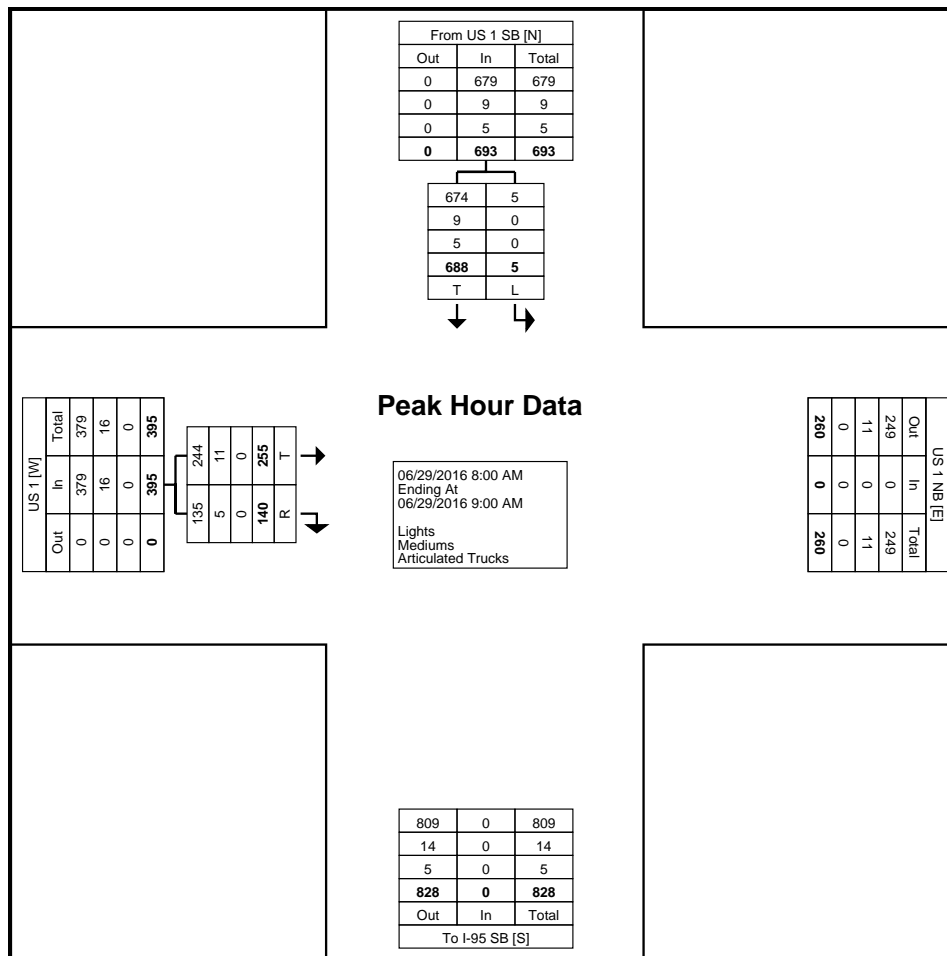
### Turning Movement Peak Hour Data (8:00 AM)

Start Time	From US 1 SB Southbound			US 1 Eastbound			Int. Total
	Thru	Left	App. Total	Right	Thru	App. Total	
8:00 AM	154	2	156	43	56	99	255
8:15 AM	183	1	184	36	53	89	273
8:30 AM	199	0	199	38	80	118	317
8:45 AM	152	2	154	23	66	89	243
Total	688	5	693	140	255	395	1088
Approach %	99.3	0.7	-	35.4	64.6	-	-
Total %	63.2	0.5	63.7	12.9	23.4	36.3	-
PHF	0.864	0.625	0.871	0.814	0.797	0.837	0.858
Lights	674	5	679	135	244	379	1058
% Lights	98.0	100.0	98.0	96.4	95.7	95.9	97.2
Mediums	9	0	9	5	11	16	25
% Mediums	1.3	0.0	1.3	3.6	4.3	4.1	2.3
Articulated Trucks	5	0	5	0	0	0	5
% Articulated Trucks	0.7	0.0	0.7	0.0	0.0	0.0	0.5

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On-Ramp  
Site Code:  
Start Date: 06/29/2016  
Page No: 4



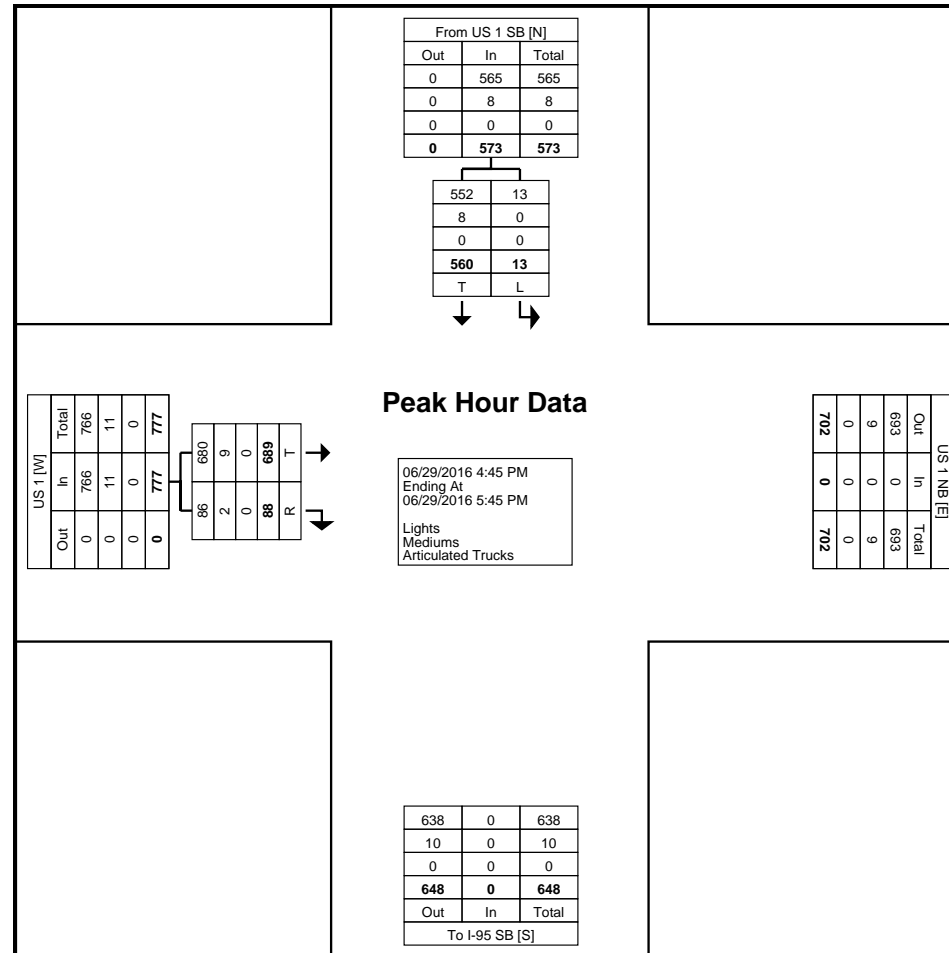
Turning Movement Peak Hour Data Plot (8:00 AM)



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Count Name: Darien- US 1 at I-95 Exit 13 SB  
On-Ramp  
Site Code:  
Start Date: 06/29/2016  
Page No: 6



Turning Movement Peak Hour Data Plot (4:45 PM)

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Count Name: Darien- US 1 at I-95 Exit 13 SB  
On-Ramp  
Site Code:  
Start Date: 06/29/2016  
Page No: 7





## **APPENDIX B**

### **Seasonal Adjustment Data**



CONNECTICUT DEPARTMENT OF TRANSPORTATION  
 BUREAU OF POLICY & PLANNING - ROADWAY INFORMATION SYSTEMS  
 TRAFFIC MONITORING & DATA ANALYSIS SECTION

FACTORS FOR EXPANDING 24-HOUR COUNTS TO  
 ANNUAL AVERAGE DAILY TRAFFIC VOLUMES  
 (BASED ON 2017 CONTINUOUS COUNT STATION DATA)

<b>GROUP - 4 ** URBAN **</b>					
STATION(S): 8, 9, 11, 15, 17, 22, 23, 28, 47, 48, 52					
	AVG.	WEEKDAY	FRIDAY	SATURDAY	SUNDAY
JANUARY	1.05	0.97	1.18	1.84	1.84
FEBRUARY	1.01	0.95	1.14	1.54	1.54
MARCH	1.00	0.94	1.16	1.41	1.41
APRIL	0.95	0.88	1.06	1.29	1.29
MAY	0.92	0.85	1.01	1.22	1.22
JUNE	0.89	0.83	1.00	1.19	1.19
JULY	0.95	0.87	1.08	1.27	1.27
AUGUST	0.94	0.89	1.10	1.30	1.30
SEPTEMBER	0.95	0.85	1.04	1.26	1.26
OCTOBER	0.93	0.84	1.01	1.29	1.29
NOVEMBER	0.94	0.94	1.07	1.30	1.30
DECEMBER	0.98	0.92	1.19	1.38	1.38



## **APPENDIX C**

### **Crash Summary**



### CRASH ANALYSIS

	I-95 Southbound Off-Ramp (Exit 13) at Boston Post Road (US Route 1)	I-95 Southbound On-Ramp at Boston Post Road (US Route 1)	Boston Post Road (US Route 1) at Site Driveway
<b>Year</b>			
2017	7	1	3
2018	3	2	0
2019	2	1	0
<i>Total</i>	<i>12</i>	<i>4</i>	<i>3</i>
<b>Type</b>			
Angle	5	0	1
Rear-end	5	1	1
Sideswipe	2	1	1
Head-on	0	0	0
Single-Vehicle	0	2	0
<i>Total</i>	<i>12</i>	<i>4</i>	<i>3</i>
<b>Severity</b>			
Property Damage	10	2	3
Personal Injury	2	2	0
Fatality	0	0	0
<i>Total</i>	<i>12</i>	<i>4</i>	<i>3</i>
<b>Weather</b>			
Clear	11	1	3
Cloudy	0	0	0
Fog	0	1	0
Rain	1	2	0
Snow	0	0	0
<i>Total</i>	<i>12</i>	<i>4</i>	<i>3</i>
<b>Time</b>			
7:00 AM to 9:00 AM	1	0	0
9:00 AM to 4:00 PM	6	2	2
4:00 PM to 6:00 PM	2	0	0
6:00 PM to 7:00 AM	3	2	1
<b>Total</b>	<b>12</b>	<b>4</b>	<b>3</b>





## **APPENDIX D**

### **Traffic Projection Model**



TRAFFIC PROJECTION MODEL

Weekday Morning Peak Hour  
Gas Station/Convenience Market  
Darien, CT

Intersection	Dir.	Turn	2016 Counted Volumes	Expansion to 2020 Volume (at 0.6% per year)	Existing Developments	2020 Projected Volumes	Volume Balancing	2020 Existing Volumes	Background Growth 2 yrs (at 1.0% per year)	2022 Background Volumes	New Project PERCENT ENTER	New Project Trips ENTER	New Project PERCENT EXIT	New Project Trips EXIT	New Project Trips TOTAL	Pass-by Trips	Redistributed Restaurant Trips	2022 Combined Volumes	HV	HV%	PHF
Boston Post Road (US Route 1) at Site Driveway <i>1.00</i>	EB	L	0	0	1	1		1	0	1		0		0	0			1	0	0%	0.92
		T	0	0	0	0		0	0	0		0		0	0			0	0	0%	0.92
	WB	R	0	0	1	1		1	0	1		0		0	0			1	0	0%	0.92
		L	0	0	54	54		54	0	54		0	20%	28	28	19	-54	47	0	0%	0.92
	NB	T	0	0	0	0		0	0	0		0		0	0			0	0	0%	0.92
		R	0	0	29	29		29	0	29		0	80%	110	110	15	-29	125	0	0%	0.92
	SB	L	0	0	1	1		1	0	1		0		0	0			1	0	0%	0.84
		T	395	10	0	405		405	9	414		0		0	0	-7		407	16	4%	0.84
	R	L	0	0	30	30		30	0	30	20%	28		0	28	7	-30	35	0	0%	0.84
		T	0	0	56	56		56	0	56	80%	112		0	112	27	-56	139	0	0%	0.93
R	T	752	18	0	770		770	16	786		0		0	0	-19		767	45	6%	0.93	
	R	0	0	1	1		1	0	1		0		0	0			1	0	0%	0.93	
Boston Post Road at I-95 SB On-Ramp <i>1.00</i>	EB	T	255	6	0	261	20	281	6	287		0	50%	69	69		-19	337	11	4%	0.84
		R	140	3	0	143	11	154	3	157		0	30%	41	41	8	-10	196	5	4%	0.84
	SB	L	5	0	0	5		5	0	5		0		0	0			5	0	0%	0.87
		T	688	17	0	705		705	16	721		0		0	0	-8		713	14	2%	0.87
Boston Post Road (US Route 1) NB at I-95 SB Off-Ramp <i>1.00</i>	WB	T	140	3	0	143		143	3	146	30%	42		0	42			188	5	4%	0.87
		R	30	1	0	31		31	1	32		0		0	0			32	1	3%	0.87
	NB	L	18	0	0	18	4	22	0	22		0		0	0			22	0	0%	0.83
		T	212	5	0	217	47	264	6	270		0	50%	69	69		-19	320	12	6%	0.83
Boston Post Road (US Route 1) SB at I-95 SB Off-Ramp <i>1.00</i>	EB	R	0	0	0	0		0	0	0		0		0	0			0	0	0%	0.92
		L	139	3	0	142	5	147	3	150	30%	42		0	42			192	7	5%	0.87
	SB	T	18	0	0	18		18	0	18		0		0	0			18	0	0%	0.87
		T	1306	32	0	1338	52	1390	29	1419	50%	70		0	70		-56	1433	52	4%	0.96
	R	24	0	0	24		24	0	24		0		0	0				24	1	4%	0.96

Peak Hour: 8:00 AM - 9:00 AM

TRAFFIC PROJECTION MODEL

Weekday Afternoon Peak Hour  
Gas Station/Convenience Market  
Darien, CT

Intersection	Dir.	Turn	2016 Counted Volumes	Expansion to 2020 Volume (at 0.6% per year)	Existing Developments	2020 Projected Volumes	Volume Balancing	2020 Existing Volumes	Background Growth 2 yrs (at 1.0% per year)	2022 Background Volumes	New Project PERCENT ENTER	New Project Trips ENTER	New Project PERCENT EXIT	New Project Trips EXIT	New Project Trips TOTAL	Pass-by Trips	Redistributed Restaurant Trips	2022 Combined Volumes	HV	HV%	PHF	
Boston Post Road (US Route 1) at Site Driveway <i>1.00</i>	EB	L	0	0	7	7		7	0	7		0		0	0			7	0	0%	0.92	
		T	0	0	0	0		0	0	0		0		0	0			0	0	0%	0.92	
		R	0	0	5	5		5	0	5		0		0	0			5	0	0%	0.92	
	WB	L	0	0	28	28		28	0	28		0	20%	23	23	16	-28	39	0	0%	0.92	
		T	0	0	0	0		0	0	0		0		0	0			0	0	0%	0.92	
		R	0	0	38	38		38	0	38		0	80%	92	92	12	-38	104	0	0%	0.92	
	NB	L	0	0	9	9		9	0	9		0		0	0			9	0	0%	0.97	
		T	794	19	0	813		813	18	831		0		0	0	-6			825	11	1%	0.97
		R	0	0	41	41		41	0	41	20%	23		0	23	6	-41	29	0	0%	0.97	
	SB	L	0	0	30	30	4	30	0	30	80%	92		0	92	22	-30	114	0	0%	0.83	
	T	595	14	0	609		613	13	626		0		0	0	-16			610	1	1%	0.83	
	R	0	0	6	6		6	0	6		0		0	0			6	0	0%	0.83		
Boston Post Road at I-95 SB On-Ramp <i>1.00</i>	EB	T	710	17	0	727	40	767	16	783		0	50%	57	57		-34	806	9	1%	0.97	
		R	84	2	0	86	5	91	2	93		0	30%	35	35	6	-4	130	2	2%	0.97	
	SB	L	14	0	0	14		14	0	14		0		0	0			14	0	0%	0.94	
		T	536	13	0	549		549	12	561		0		0	0	-6		555	8	1%	0.94	
Boston Post Road (US Route 1) NB at I-95 SB Off-Ramp <i>1.00</i>	WB	T	171	4	0	175		175	4	179	30%	35		0	35			214	1	1%	0.89	
		R	201	5	0	206		206	4	210		0		0	0			210	1	1%	0.89	
	NB	L	21	1	0	22	3	25	0	25		0		0	0			25	0	0%	0.97	
		T	655	16	0	671	85	756	16	772		0	50%	57	57		-34	795	11	2%	0.97	
Boston Post Road (US Route 1) SB at I-95 SB Off-Ramp <i>1.00</i>	EB	R	0	0	0	0		0	0	0		0		0	0			0	0	0%	0.92	
	WB	L	169	4	0	173	4	177	4	181	30%	35		0	35			216	1	1%	0.83	
		T	23	0	0	23		23	0	23		0		0	0			23	0	0%	0.83	
	SB	T	976	24	0	1000	35	1035	21	1056	50%	57		0	57		-30	1083	8	1%	0.88	
		R	20	0	0	20		20	0	20		0		0	0			20	0	0%	0.88	

Peak Hour: 5:00 PM - 6:00 PM

## **APPENDIX E**

### **Highway Capacity Manual Methodologies**



## CAPACITY/LEVEL-OF-SERVICE ANALYSES METHODOLOGY

The detailed capacity/level-of-service analysis contained in this traffic impact study was performed utilizing Synchro capacity analysis software. Analysis completed utilizing this tool are largely based on standard techniques contained in the *Highway Capacity Manual*.<sup>(1)</sup> By definition, capacity represents “the maximum rate of flow that can reasonably be expected to pass a point on a uniform section of a lane or roadway under prevailing roadway, traffic, and control conditions.” The level of functioning of an intersection or a uniform section of a lane or roadway can be expressed in terms of levels of service. Level of service (LOS) is defined as “a qualitative measure describing operational conditions within a traffic stream, and their perception by motorists and/or passengers”. Such measures include “speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety.”

At unsignalized intersections, a methodology for evaluating the relative functioning of intersections controlled by stop or yield signs has been developed, and is based on several assumptions, including:

- Major street flows are not affected by the minor (stop-sign controlled) street movements.
- Left turns from the major street to the minor street are influenced only by opposing major street through flow.
- Minor street left turns are impeded by all major street traffic plus opposing minor street traffic.
- Minor street through traffic is impeded by all major street traffic.
- Minor street right turns are impeded only by the major street traffic coming from the left.

The concept of stop-controlled or yield-controlled intersection analysis is based on the estimate of average total delay on minor streets. The methodology of analysis relies on three elements: the size and distribution of gaps in the major traffic stream, the usefulness of these gaps to the minor stream drivers, and the relative priority of the various traffic streams at the intersection. The results of the analysis provide an estimate of average total delay for the various critical movements at the unsignalized intersections. Correlation between average total delay and the respective levels of service are provided for unsignalized intersections as follows:

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(1) *Transportation Research Board, Highway Capacity Manual 6th Edition, published by the Transportation Research Board, Washington, DC, 2010.*

<i>Unsignalized Intersections</i>	
<b>Level of Service</b>	<b>Control Delay Per Vehicle (seconds)</b>
A	0 – 10
B	>10 – 15
C	>15 – 25
D	>25 – 35
E	>35 – 50
F	> 50

At signalized intersections, an additional element must be considered: time allocation. Level of service is based on the average delay per vehicle for various movements within the intersection. Volume/capacity relationships also affect the operations of signalized intersections. Thus, both volume/capacity and delay must be considered to evaluate the overall operation of a signalized intersection. Correlation between average delay per vehicle and the respective levels of service are provided for signalized intersections as follows:

<i>Signalized Intersections</i>	
<b>Level of Service</b>	<b>Control Delay Per Vehicle (seconds)</b>
A	$\leq 10$
B	>10 – 20
C	>20 – 35
D	>35 – 55
E	>55 – 80
F	> 80

Synchro provides two options for evaluating delay at a signalized intersection: Percentile Delay Method and HCM Method. Each have similar components to calculate delay at signalized intersections, but differ slightly in application. The Percentile Delay Method is recommended when analyzing actuated signals.



## **APPENDIX E**

### **2020 Existing Capacity/Level-of-Service Analysis**



7/11 Store - Darien, CT  
6: I-95 SB On-Ramp & Boston Post Rd (US Rte 1)

Weekday Morning Peak Hour  
2020 Existing



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗								↖↑	
Traffic Volume (vph)	0	281	154	0	0	0	0	0	0	5	705	0
Future Volume (vph)	0	281	154	0	0	0	0	0	0	5	705	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	16	12	12	12	12	12	12	11	11	11
Storage Length (ft)	0		80	0		0	0		0	0		0
Storage Lanes	0		1	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Fr <sub>t</sub>			0.850									
Fl <sub>t</sub> Protected												
Satd. Flow (prot)	0	3355	1760	0	0	0	0	0	0	0	3422	0
Fl <sub>t</sub> Permitted												
Satd. Flow (perm)	0	3355	1760	0	0	0	0	0	0	0	3422	0
Right Turn on Red			Yes			Yes			Yes	Yes		Yes
Satd. Flow (RTOR)			183								46	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		197			404			155			224	
Travel Time (s)		3.8			7.9			3.0			4.4	
Peak Hour Factor	0.84	0.84	0.84	0.92	0.92	0.92	0.92	0.92	0.92	0.87	0.87	0.87
Heavy Vehicles (%)	0%	4%	4%	0%	0%	0%	0%	0%	0%	0%	2%	0%
Adj. Flow (vph)	0	335	183	0	0	0	0	0	0	6	810	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	335	183	0	0	0	0	0	0	0	816	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		10			10			10			20	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	0.85	1.00	1.00	1.00	1.00	1.00	1.00	1.04	1.04	1.04
Turning Speed (mph)	20		9	20		9	20		9	20		9
Number of Detectors		1	0							1	1	
Detector Template										Left		
Leading Detector (ft)		86	0							20	30	
Trailing Detector (ft)		80	0							0	0	
Detector 1 Position(ft)		80	0							0	0	
Detector 1 Size(ft)		6	20							20	30	
Detector 1 Type		Cl+Ex	Cl+Ex							Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0							0.0	0.0	
Detector 1 Queue (s)		0.0	0.0							0.0	0.0	
Detector 1 Delay (s)		0.0	0.0							0.0	0.0	
Turn Type		NA	Free							Perm	NA	
Protected Phases		2									4	
Permitted Phases			Free							4		
Detector Phase		2								4	4	
Switch Phase												
Minimum Initial (s)		18.0								9.0	9.0	

7/11 Store - Darien, CT  
 6: I-95 SB On-Ramp & Boston Post Rd (US Rte 1)

Weekday Morning Peak Hour  
 2020 Existing

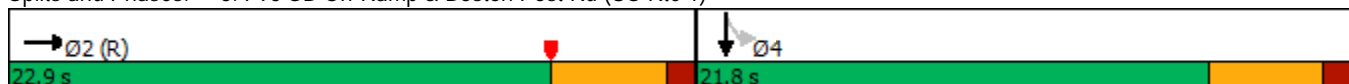


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)		22.9								13.8	13.8	
Total Split (s)		22.9								21.8	21.8	
Total Split (%)		51.2%								48.8%	48.8%	
Maximum Green (s)		18.0								17.0	17.0	
Yellow Time (s)		3.9								3.8	3.8	
All-Red Time (s)		1.0								1.0	1.0	
Lost Time Adjust (s)		0.0									0.0	
Total Lost Time (s)		4.9									4.8	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		2.5								2.5	2.5	
Recall Mode		C-Min								None	None	
Act Effect Green (s)		20.4	44.7									14.6
Actuated g/C Ratio		0.46	1.00									0.33
v/c Ratio		0.22	0.10									0.71
Control Delay		8.6	0.1									15.8
Queue Delay		0.0	0.0									0.0
Total Delay		8.6	0.1									15.8
LOS		A	A									B
Approach Delay		5.6										15.8
Approach LOS		A										B
Queue Length 50th (ft)		26	0									84
Queue Length 95th (ft)		45	0									117
Internal Link Dist (ft)		117				324			75			144
Turn Bay Length (ft)			80									
Base Capacity (vph)		1528	1760									1329
Starvation Cap Reductn		0	0									0
Spillback Cap Reductn		0	0									0
Storage Cap Reductn		0	0									0
Reduced v/c Ratio		0.22	0.10									0.61

Intersection Summary

Area Type: Other  
 Cycle Length: 44.7  
 Actuated Cycle Length: 44.7  
 Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow  
 Natural Cycle: 40  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.71  
 Intersection Signal Delay: 11.8  
 Intersection LOS: B  
 Intersection Capacity Utilization 42.7%  
 ICU Level of Service A  
 Analysis Period (min) 15

Splits and Phases: 6: I-95 SB On-Ramp & Boston Post Rd (US Rte 1)



Intersection												
Int Delay, s/veh	4.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	0	1	54	0	29	1	405	30	56	770	1
Future Vol, veh/h	1	0	1	54	0	29	1	405	30	56	770	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	84	84	84	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0	0	4	0	0	6	0
Mvmt Flow	1	0	1	59	0	32	1	482	36	60	828	1

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1467	1469	829	1451	1451	500	829	0	0	518	0	0
Stage 1	949	949	-	502	502	-	-	-	-	-	-	-
Stage 2	518	520	-	949	949	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	107	129	374	110	132	575	811	-	-	1058	-	-
Stage 1	315	342	-	555	545	-	-	-	-	-	-	-
Stage 2	544	535	-	315	342	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	93	115	374	101	118	575	811	-	-	1058	-	-
Mov Cap-2 Maneuver	93	115	-	101	118	-	-	-	-	-	-	-
Stage 1	314	306	-	554	544	-	-	-	-	-	-	-
Stage 2	513	534	-	281	306	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	29.5		66.5		0		0.6	
HCM LOS	D		F					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	811	-	-	149	142	1058	-	-
HCM Lane V/C Ratio	0.001	-	-	0.015	0.635	0.057	-	-
HCM Control Delay (s)	9.4	0	-	29.5	66.5	8.6	0	-
HCM Lane LOS	A	A	-	D	F	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	3.4	0.2	-	-

Intersection												
Int Delay, s/veh	3.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↻			↻↻				
Traffic Vol, veh/h	0	0	0	0	143	31	22	264	0	0	0	0
Future Vol, veh/h	0	0	0	0	143	31	22	264	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	2	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	87	87	87	83	83	83	92	92	92
Heavy Vehicles, %	0	0	0	0	4	3	0	6	0	0	0	0
Mvmt Flow	0	0	0	0	164	36	27	318	0	0	0	0

Major/Minor	Minor1	Major1			
Conflicting Flow All	-	372	159	0	0
Stage 1	-	372	-	-	-
Stage 2	-	0	-	-	-
Critical Hdwy	-	6.58	6.96	4.1	-
Critical Hdwy Stg 1	-	5.58	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	4.04	3.33	2.2	-
Pot Cap-1 Maneuver	0	552	855	-	0
Stage 1	0	612	-	-	0
Stage 2	0	-	-	-	0
Platoon blocked, %					-
Mov Cap-1 Maneuver	-	0	855	-	-
Mov Cap-2 Maneuver	-	0	-	-	-
Stage 1	-	0	-	-	-
Stage 2	-	0	-	-	-

Approach	WB	NB
HCM Control Delay, s	10.5	
HCM LOS	B	

Minor Lane/Major Mvmt	NBL	NBTWBLn1
Capacity (veh/h)	-	855
HCM Lane V/C Ratio	-	0.234
HCM Control Delay (s)	-	10.5
HCM Lane LOS	-	B
HCM 95th %tile Q(veh)	-	0.9

7/11 Store - Darien, CT  
 11: Boston Post Rd (US Rte 1) & Gas Station DW/I-95 SB Off-Ramp

Weekday Morning Peak Hour  
 2020 Existing

Intersection												
Int Delay, s/veh	5.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗		↖						↕↔	
Traffic Vol, veh/h	0	0	0	147	18	0	0	0	0	0	1390	24
Future Vol, veh/h	0	0	0	147	18	0	0	0	0	0	1390	24
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	87	87	87	92	92	92	96	96	96
Heavy Vehicles, %	0	0	0	5	0	0	0	0	0	0	4	4
Mvmt Flow	0	0	0	169	21	0	0	0	0	0	1448	25

Major/Minor	Minor2		Minor1			Major2		
Conflicting Flow All	-	-	737	724	1473	-	-	0
Stage 1	-	-	-	0	0	-	-	-
Stage 2	-	-	-	724	1473	-	-	-
Critical Hdwy	-	-	6.9	7.6	6.5	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	6.6	5.5	-	-	-
Follow-up Hdwy	-	-	3.3	3.55	4	-	-	-
Pot Cap-1 Maneuver	0	0	365	308	128	0	0	-
Stage 1	0	0	-	-	-	0	0	-
Stage 2	0	0	-	376	193	0	0	-
Platoon blocked, %	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	365	308	128	-	-	-
Mov Cap-2 Maneuver	-	-	-	308	128	-	-	-
Stage 1	-	-	-	-	-	-	-	-
Stage 2	-	-	-	376	193	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	45.8	0
HCM LOS	A	E	

Minor Lane/Major Mvmt	EBLn1WBLn1	SBT	SBR
Capacity (veh/h)	- 267	-	-
HCM Lane V/C Ratio	- 0.71	-	-
HCM Control Delay (s)	0 45.8	-	-
HCM Lane LOS	A E	-	-
HCM 95th %tile Q(veh)	- 4.9	-	-

7/11 Store - Darien, CT  
6: I-95 SB On-Ramp & Boston Post Rd (US Rte 1)

Weekday Afternoon Peak Hour  
2020 Existing



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗								↖↑	
Traffic Volume (vph)	0	767	91	0	0	0	0	0	0	14	549	0
Future Volume (vph)	0	767	91	0	0	0	0	0	0	14	549	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	16	12	12	12	12	12	12	11	11	11
Storage Length (ft)	0		80	0		0	0		0	0		0
Storage Lanes	0		1	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Fr <sub>t</sub>			0.850									
Fl <sub>t</sub> Protected											0.999	
Satd. Flow (prot)	0	3455	1794	0	0	0	0	0	0	0	3453	0
Fl <sub>t</sub> Permitted											0.999	
Satd. Flow (perm)	0	3455	1794	0	0	0	0	0	0	0	3453	0
Right Turn on Red			Yes			Yes			Yes	Yes		Yes
Satd. Flow (RTOR)			184								52	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		197			404			155			224	
Travel Time (s)		3.8			7.9			3.0			4.4	
Peak Hour Factor	0.97	0.97	0.97	0.92	0.92	0.92	0.92	0.92	0.92	0.94	0.94	0.94
Heavy Vehicles (%)	0%	1%	2%	0%	0%	0%	0%	0%	0%	0%	1%	0%
Adj. Flow (vph)	0	791	94	0	0	0	0	0	0	15	584	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	791	94	0	0	0	0	0	0	0	599	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		10			10			10			20	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	0.85	1.00	1.00	1.00	1.00	1.00	1.00	1.04	1.04	1.04
Turning Speed (mph)	20		9	20		9	20		9	20		9
Number of Detectors		1	0							1	1	
Detector Template										Left		
Leading Detector (ft)		86	0							20	30	
Trailing Detector (ft)		80	0							0	0	
Detector 1 Position(ft)		80	0							0	0	
Detector 1 Size(ft)		6	20							20	30	
Detector 1 Type		Cl+Ex	Cl+Ex							Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0							0.0	0.0	
Detector 1 Queue (s)		0.0	0.0							0.0	0.0	
Detector 1 Delay (s)		0.0	0.0							0.0	0.0	
Turn Type		NA	Free							Perm	NA	
Protected Phases		2									4	
Permitted Phases			Free							4		
Detector Phase		2								4	4	
Switch Phase												
Minimum Initial (s)		18.0								12.0	12.0	



7/11 Store - Darien, CT  
 6: I-95 SB On-Ramp & Boston Post Rd (US Rte 1)

Weekday Afternoon Peak Hour  
 2020 Existing

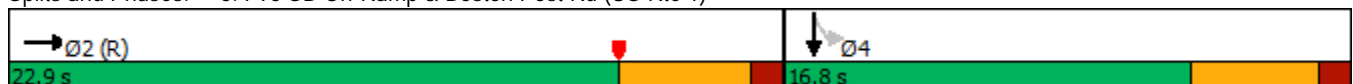


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)		22.9								16.8	16.8	
Total Split (s)		22.9								16.8	16.8	
Total Split (%)		57.7%								42.3%	42.3%	
Maximum Green (s)		18.0								12.0	12.0	
Yellow Time (s)		3.9								3.8	3.8	
All-Red Time (s)		1.0								1.0	1.0	
Lost Time Adjust (s)		0.0									0.0	
Total Lost Time (s)		4.9									4.8	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		2.5								2.5	2.5	
Recall Mode		C-Min								None	None	
Act Effect Green (s)		18.0	39.7									12.0
Actuated g/C Ratio		0.45	1.00									0.30
v/c Ratio		0.51	0.05									0.55
Control Delay		9.1	0.1									12.9
Queue Delay		0.0	0.0									0.0
Total Delay		9.1	0.1									12.9
LOS		A	A									B
Approach Delay		8.1										12.9
Approach LOS		A										B
Queue Length 50th (ft)		58	0									51
Queue Length 95th (ft)		93	0									87
Internal Link Dist (ft)		117				324			75			144
Turn Bay Length (ft)			80									
Base Capacity (vph)		1566	1794									1080
Starvation Cap Reductn		0	0									0
Spillback Cap Reductn		0	0									0
Storage Cap Reductn		0	0									0
Reduced v/c Ratio		0.51	0.05									0.55

Intersection Summary

Area Type: Other  
 Cycle Length: 39.7  
 Actuated Cycle Length: 39.7  
 Offset: 0 (0%), Referenced to phase 2:EBT and 6:, Start of Yellow  
 Natural Cycle: 40  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.55  
 Intersection Signal Delay: 10.1  
 Intersection Capacity Utilization 44.9%  
 Analysis Period (min) 15  
 Intersection LOS: B  
 ICU Level of Service A

Splits and Phases: 6: I-95 SB On-Ramp & Boston Post Rd (US Rte 1)



Intersection												
Int Delay, s/veh	3.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	7	0	5	28	0	38	9	813	41	30	613	6
Future Vol, veh/h	7	0	5	28	0	38	9	813	41	30	613	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	97	97	97	83	83	83
Heavy Vehicles, %	0	0	0	0	0	0	0	1	0	0	1	0
Mvmt Flow	8	0	5	30	0	41	9	838	42	36	739	7

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1713	1713	743	1694	1695	859	746	0	0	880	0	0
Stage 1	815	815	-	877	877	-	-	-	-	-	-	-
Stage 2	898	898	-	817	818	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	72	91	418	74	94	359	871	-	-	777	-	-
Stage 1	374	394	-	346	369	-	-	-	-	-	-	-
Stage 2	337	361	-	373	393	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	59	82	418	68	85	359	871	-	-	777	-	-
Mov Cap-2 Maneuver	59	82	-	68	85	-	-	-	-	-	-	-
Stage 1	367	363	-	339	362	-	-	-	-	-	-	-
Stage 2	292	354	-	339	362	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	50.5		64.1		0.1		0.5	
HCM LOS	F		F					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	871	-	-	92	128	777	-	-
HCM Lane V/C Ratio	0.011	-	-	0.142	0.56	0.047	-	-
HCM Control Delay (s)	9.2	0	-	50.5	64.1	9.9	0	-
HCM Lane LOS	A	A	-	F	F	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.5	2.8	0.1	-	-

Intersection												
Int Delay, s/veh	8.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↻			↻↻				
Traffic Vol, veh/h	0	0	0	0	175	206	25	756	0	0	0	0
Future Vol, veh/h	0	0	0	0	175	206	25	756	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	2	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	89	89	89	97	97	97	92	92	92
Heavy Vehicles, %	0	0	0	0	1	1	0	2	0	0	0	0
Mvmt Flow	0	0	0	0	197	231	26	779	0	0	0	0

Major/Minor	Minor1	Major1			
Conflicting Flow All	-	831	390	0	0
Stage 1	-	831	-	-	-
Stage 2	-	0	-	-	-
Critical Hdwy	-	6.52	6.92	4.1	-
Critical Hdwy Stg 1	-	5.52	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	4.01	3.31	2.2	-
Pot Cap-1 Maneuver	0	306	612	-	0
Stage 1	0	385	-	-	0
Stage 2	0	-	-	-	0
Platoon blocked, %					-
Mov Cap-1 Maneuver	-	0	612	-	-
Mov Cap-2 Maneuver	-	0	-	-	-
Stage 1	-	0	-	-	-
Stage 2	-	0	-	-	-

Approach	WB	NB
HCM Control Delay, s	23.4	
HCM LOS	C	

Minor Lane/Major Mvmt	NBL	NBTWBLn1
Capacity (veh/h)	-	612
HCM Lane V/C Ratio	-	0.699
HCM Control Delay (s)	-	23.4
HCM Lane LOS	-	C
HCM 95th %tile Q(veh)	-	5.6

7/11 Store - Darien, CT  
 11: Boston Post Rd (US Rte 1) & Gas Station DW/I-95 SB Off-Ramp

Weekday Afternoon Peak Hour  
 2020 Existing

Intersection												
Int Delay, s/veh	5.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗		↖						↕	↕
Traffic Vol, veh/h	0	0	0	177	23	0	0	0	0	0	1035	20
Future Vol, veh/h	0	0	0	177	23	0	0	0	0	0	1035	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	83	83	83	92	92	92	88	88	88
Heavy Vehicles, %	0	0	0	1	0	0	0	0	0	0	1	0
Mvmt Flow	0	0	0	213	28	0	0	0	0	0	1176	23

Major/Minor	Minor2		Minor1			Major2		
Conflicting Flow All	-	-	600	588	1199	-	-	0
Stage 1	-	-	-	0	0	-	-	-
Stage 2	-	-	-	588	1199	-	-	-
Critical Hdwy	-	-	6.9	7.52	6.5	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	6.52	5.5	-	-	-
Follow-up Hdwy	-	-	3.3	3.51	4	-	-	-
Pot Cap-1 Maneuver	0	0	449	395	187	0	0	-
Stage 1	0	0	-	-	-	0	0	-
Stage 2	0	0	-	465	261	0	0	-
Platoon blocked, %	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	449	395	187	-	-	-
Mov Cap-2 Maneuver	-	-	-	395	187	-	-	-
Stage 1	-	-	-	-	-	-	-	-
Stage 2	-	-	-	465	261	-	-	-

Approach	EB		WB		SB	
HCM Control Delay, s	0		35.2		0	
HCM LOS	A		E			

Minor Lane/Major Mvmt	EBLn1WBLn1		SBT	SBR
Capacity (veh/h)	- 350		-	-
HCM Lane V/C Ratio	- 0.688		-	-
HCM Control Delay (s)	0	35.2	-	-
HCM Lane LOS	A	E	-	-
HCM 95th %tile Q(veh)	- 4.9		-	-

## **APPENDIX F**

### **2022 Background Capacity/Level-of-Service Analysis**



7/11 Store - Darien, CT  
6: I-95 SB On-Ramp & Boston Post Rd (US Rte 1)

Weekday Morning Peak Hour  
2022 Background



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗								↖↑	
Traffic Volume (vph)	0	287	157	0	0	0	0	0	0	5	721	0
Future Volume (vph)	0	287	157	0	0	0	0	0	0	5	721	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	16	12	12	12	12	12	12	11	11	11
Storage Length (ft)	0		80	0		0	0		0	0		0
Storage Lanes	0		1	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Fr <sub>t</sub>			0.850									
Fl <sub>t</sub> Protected												
Satd. Flow (prot)	0	3355	1760	0	0	0	0	0	0	0	3422	0
Fl <sub>t</sub> Permitted												
Satd. Flow (perm)	0	3355	1760	0	0	0	0	0	0	0	3422	0
Right Turn on Red			Yes			Yes			Yes		Yes	Yes
Satd. Flow (RTOR)			187									46
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		197			404			155			224	
Travel Time (s)		3.8			7.9			3.0			4.4	
Peak Hour Factor	0.84	0.84	0.84	0.92	0.92	0.92	0.92	0.92	0.92	0.87	0.87	0.87
Heavy Vehicles (%)	0%	4%	4%	0%	0%	0%	0%	0%	0%	0%	2%	0%
Adj. Flow (vph)	0	342	187	0	0	0	0	0	0	6	829	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	342	187	0	0	0	0	0	0	0	835	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		10			10			10			20	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	0.85	1.00	1.00	1.00	1.00	1.00	1.00	1.04	1.04	1.04
Turning Speed (mph)	20		9	20		9	20		9	20		9
Number of Detectors		1	0							1	1	
Detector Template										Left		
Leading Detector (ft)		86	0							20	30	
Trailing Detector (ft)		80	0							0	0	
Detector 1 Position(ft)		80	0							0	0	
Detector 1 Size(ft)		6	20							20	30	
Detector 1 Type		Cl+Ex	Cl+Ex							Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0							0.0	0.0	
Detector 1 Queue (s)		0.0	0.0							0.0	0.0	
Detector 1 Delay (s)		0.0	0.0							0.0	0.0	
Turn Type		NA	Free							Perm	NA	
Protected Phases		2									4	
Permitted Phases			Free							4		
Detector Phase		2								4	4	
Switch Phase												
Minimum Initial (s)		18.0								9.0	9.0	

7/11 Store - Darien, CT  
 6: I-95 SB On-Ramp & Boston Post Rd (US Rte 1)

Weekday Morning Peak Hour  
 2022 Background

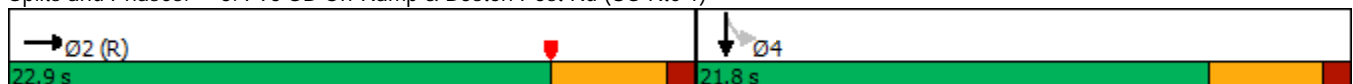


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)		22.9								13.8	13.8	
Total Split (s)		22.9								21.8	21.8	
Total Split (%)		51.2%								48.8%	48.8%	
Maximum Green (s)		18.0								17.0	17.0	
Yellow Time (s)		3.9								3.8	3.8	
All-Red Time (s)		1.0								1.0	1.0	
Lost Time Adjust (s)		0.0									0.0	
Total Lost Time (s)		4.9									4.8	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0								3.0	3.0	
Recall Mode		C-Min								None	None	
Act Effect Green (s)		19.8	44.7									15.2
Actuated g/C Ratio		0.44	1.00									0.34
v/c Ratio		0.23	0.11									0.70
Control Delay		8.8	0.1									15.3
Queue Delay		0.0	0.0									0.0
Total Delay		8.8	0.1									15.3
LOS		A	A									B
Approach Delay		5.8										15.3
Approach LOS		A										B
Queue Length 50th (ft)		27	0									85
Queue Length 95th (ft)		46	0									121
Internal Link Dist (ft)		117				324			75			144
Turn Bay Length (ft)			80									
Base Capacity (vph)		1489	1760									1329
Starvation Cap Reductn		0	0									0
Spillback Cap Reductn		0	0									0
Storage Cap Reductn		0	0									0
Reduced v/c Ratio		0.23	0.11									0.63

Intersection Summary

Area Type: Other  
 Cycle Length: 44.7  
 Actuated Cycle Length: 44.7  
 Offset: 4.7 (11%), Referenced to phase 2:EBT, Start of Yellow  
 Natural Cycle: 40  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.70  
 Intersection Signal Delay: 11.6  
 Intersection Capacity Utilization 43.2%  
 Analysis Period (min) 15  
 Intersection LOS: B  
 ICU Level of Service A

Splits and Phases: 6: I-95 SB On-Ramp & Boston Post Rd (US Rte 1)





Intersection												
Int Delay, s/veh	4.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	0	1	54	0	29	1	414	30	56	786	1
Future Vol, veh/h	1	0	1	54	0	29	1	414	30	56	786	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	84	84	84	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0	0	4	0	0	6	0
Mvmt Flow	1	0	1	59	0	32	1	493	36	60	845	1

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1495	1497	846	1479	1479	511	846	0	0	529	0	0
Stage 1	966	966	-	513	513	-	-	-	-	-	-	-
Stage 2	529	531	-	966	966	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	102	124	365	105	127	567	800	-	-	1048	-	-
Stage 1	309	336	-	548	539	-	-	-	-	-	-	-
Stage 2	537	529	-	309	336	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	88	110	365	96	113	567	800	-	-	1048	-	-
Mov Cap-2 Maneuver	88	110	-	96	113	-	-	-	-	-	-	-
Stage 1	308	300	-	547	538	-	-	-	-	-	-	-
Stage 2	506	528	-	275	300	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB		
HCM Control Delay, s	30.7		73.6		0		0.6		
HCM LOS	D		F						

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	800	-	-	142	135	1048	-	-
HCM Lane V/C Ratio	0.001	-	-	0.015	0.668	0.057	-	-
HCM Control Delay (s)	9.5	0	-	30.7	73.6	8.6	0	-
HCM Lane LOS	A	A	-	D	F	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	3.7	0.2	-	-

Intersection													
Int Delay, s/veh	3.9												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations					↻							↻↻	
Traffic Vol, veh/h	0	0	0	0	146	32	22	270	0	0	0	0	
Future Vol, veh/h	0	0	0	0	146	32	22	270	0	0	0	0	
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	
Sign Control	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None	
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-	
Veh in Median Storage, #	-	2	-	-	0	-	-	0	-	-	16965	-	
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-	
Peak Hour Factor	92	92	92	87	87	87	83	83	83	92	92	92	
Heavy Vehicles, %	0	0	0	0	4	3	0	6	0	0	0	0	
Mvmt Flow	0	0	0	0	168	37	27	325	0	0	0	0	

Major/Minor	Minor1		Major1	
Conflicting Flow All	-	379	163	0
Stage 1	-	379	-	-
Stage 2	-	0	-	-
Critical Hdwy	-	6.58	6.96	4.1
Critical Hdwy Stg 1	-	5.58	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	4.04	3.33	2.2
Pot Cap-1 Maneuver	0	547	850	-
Stage 1	0	608	-	-
Stage 2	0	-	-	-
Platoon blocked, %	-			
Mov Cap-1 Maneuver	-	0	850	-
Mov Cap-2 Maneuver	-	0	-	-
Stage 1	-	0	-	-
Stage 2	-	0	-	-

Approach	WB	NB
HCM Control Delay, s	10.6	
HCM LOS	B	

Minor Lane/Major Mvmt	NBL	NBTWBLn1
Capacity (veh/h)	-	850
HCM Lane V/C Ratio	-	0.241
HCM Control Delay (s)	-	10.6
HCM Lane LOS	-	B
HCM 95th %tile Q(veh)	-	0.9

7/11 Store - Darien, CT  
 11: Boston Post Rd (US Rte 1) & Gas Station DW/I-95 SB Off-Ramp

Weekday Morning Peak Hour  
 2022 Background

Intersection												
Int Delay, s/veh	5.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗		↖						↕	↕
Traffic Vol, veh/h	0	0	0	150	18	0	0	0	0	0	1419	24
Future Vol, veh/h	0	0	0	150	18	0	0	0	0	0	1419	24
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	87	87	87	92	92	92	96	96	96
Heavy Vehicles, %	0	0	0	5	0	0	0	0	0	0	4	4
Mvmt Flow	0	0	0	172	21	0	0	0	0	0	1478	25

Major/Minor	Minor2		Minor1			Major2		
Conflicting Flow All	-	-	752	739	1503	-	-	0
Stage 1	-	-	-	0	0	-	-	-
Stage 2	-	-	-	739	1503	-	-	-
Critical Hdwy	-	-	6.9	7.6	6.5	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	6.6	5.5	-	-	-
Follow-up Hdwy	-	-	3.3	3.55	4	-	-	-
Pot Cap-1 Maneuver	0	0	357	300	123	0	0	-
Stage 1	0	0	-	-	-	0	0	-
Stage 2	0	0	-	368	186	0	0	-
Platoon blocked, %	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	357	300	123	-	-	-
Mov Cap-2 Maneuver	-	-	-	300	123	-	-	-
Stage 1	-	-	-	-	-	-	-	-
Stage 2	-	-	-	368	186	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	50.3	0
HCM LOS	A	F	

Minor Lane/Major Mvmt	EBLn1WBLn1	SBT	SBR
Capacity (veh/h)	- 260	-	-
HCM Lane V/C Ratio	- 0.743	-	-
HCM Control Delay (s)	0 50.3	-	-
HCM Lane LOS	A F	-	-
HCM 95th %tile Q(veh)	- 5.3	-	-

7/11 Store - Darien, CT  
6: I-95 SB On-Ramp & Boston Post Rd (US Rte 1)

Weekday Afternoon Peak Hour  
2022 Background



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗								↖↑	
Traffic Volume (vph)	0	783	93	0	0	0	0	0	0	14	561	0
Future Volume (vph)	0	783	93	0	0	0	0	0	0	14	561	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	16	12	12	12	12	12	12	11	11	11
Storage Length (ft)	0		80	0		0	0		0	0		0
Storage Lanes	0		1	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Fr t			0.850									
Flt Protected											0.999	
Satd. Flow (prot)	0	3455	1794	0	0	0	0	0	0	0	3452	0
Flt Permitted											0.999	
Satd. Flow (perm)	0	3455	1794	0	0	0	0	0	0	0	3452	0
Right Turn on Red			Yes			Yes			Yes	Yes		Yes
Satd. Flow (RTOR)			184								52	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		197			404			155			224	
Travel Time (s)		3.8			7.9			3.0			4.4	
Peak Hour Factor	0.97	0.97	0.97	0.92	0.92	0.92	0.92	0.92	0.92	0.94	0.94	0.94
Heavy Vehicles (%)	0%	1%	2%	0%	0%	0%	0%	0%	0%	0%	1%	0%
Adj. Flow (vph)	0	807	96	0	0	0	0	0	0	15	597	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	807	96	0	0	0	0	0	0	0	612	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		10			10			10			20	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	0.85	1.00	1.00	1.00	1.00	1.00	1.00	1.04	1.04	1.04
Turning Speed (mph)	20		9	20		9	20		9	20		9
Number of Detectors		1	0							1	1	
Detector Template										Left		
Leading Detector (ft)		86	0							20	30	
Trailing Detector (ft)		80	0							0	0	
Detector 1 Position(ft)		80	0							0	0	
Detector 1 Size(ft)		6	20							20	30	
Detector 1 Type		Cl+Ex	Cl+Ex							Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0							0.0	0.0	
Detector 1 Queue (s)		0.0	0.0							0.0	0.0	
Detector 1 Delay (s)		0.0	0.0							0.0	0.0	
Turn Type		NA	Free							Perm	NA	
Protected Phases		2										4
Permitted Phases			Free							4		
Detector Phase		2								4	4	
Switch Phase												
Minimum Initial (s)		18.0								9.0	9.0	

7/11 Store - Darien, CT  
 6: I-95 SB On-Ramp & Boston Post Rd (US Rte 1)

Weekday Afternoon Peak Hour  
 2022 Background

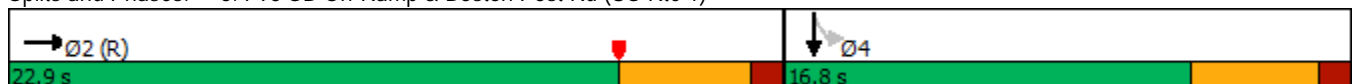


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)		22.9								13.8	13.8	
Total Split (s)		22.9								16.8	16.8	
Total Split (%)		57.7%								42.3%	42.3%	
Maximum Green (s)		18.0								12.0	12.0	
Yellow Time (s)		3.9								3.8	3.8	
All-Red Time (s)		1.0								1.0	1.0	
Lost Time Adjust (s)		0.0									0.0	
Total Lost Time (s)		4.9									4.8	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0								3.0	3.0	
Recall Mode		C-Min								None	None	
Act Effect Green (s)		19.1	39.7									10.9
Actuated g/C Ratio		0.48	1.00									0.27
v/c Ratio		0.49	0.05									0.62
Control Delay		8.6	0.1									14.3
Queue Delay		0.0	0.0									0.0
Total Delay		8.6	0.1									14.3
LOS		A	A									B
Approach Delay		7.6										14.3
Approach LOS		A										B
Queue Length 50th (ft)		58	0									54
Queue Length 95th (ft)		95	0									88
Internal Link Dist (ft)		117			324			75				144
Turn Bay Length (ft)			80									
Base Capacity (vph)		1658	1794									1079
Starvation Cap Reductn		0	0									0
Spillback Cap Reductn		0	0									0
Storage Cap Reductn		0	0									0
Reduced v/c Ratio		0.49	0.05									0.57

Intersection Summary

Area Type: Other  
 Cycle Length: 39.7  
 Actuated Cycle Length: 39.7  
 Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow  
 Natural Cycle: 40  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.62  
 Intersection Signal Delay: 10.3  
 Intersection Capacity Utilization 45.6%  
 Analysis Period (min) 15  
 Intersection LOS: B  
 ICU Level of Service A

Splits and Phases: 6: I-95 SB On-Ramp & Boston Post Rd (US Rte 1)



Intersection												
Int Delay, s/veh	3.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	7	0	5	28	0	38	9	831	41	30	626	6
Future Vol, veh/h	7	0	5	28	0	38	9	831	41	30	626	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	92	92	92	92	92	92	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0	0	1	0	0	1	0
Mvmt Flow	7	0	5	30	0	41	10	903	45	32	666	6

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1699	1701	669	1682	1682	926	672	0	0	948	0	0
Stage 1	733	733	-	946	946	-	-	-	-	-	-	-
Stage 2	966	968	-	736	736	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	74	93	461	76	95	329	928	-	-	732	-	-
Stage 1	415	429	-	317	343	-	-	-	-	-	-	-
Stage 2	309	335	-	414	428	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	60	85	461	70	86	329	928	-	-	732	-	-
Mov Cap-2 Maneuver	60	85	-	70	86	-	-	-	-	-	-	-
Stage 1	405	399	-	310	335	-	-	-	-	-	-	-
Stage 2	264	327	-	381	398	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB		
HCM Control Delay, s	49		64.1		0.1		0.5		
HCM LOS	E		F						

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	928	-	-	94	128	732	-	-
HCM Lane V/C Ratio	0.011	-	-	0.132	0.56	0.044	-	-
HCM Control Delay (s)	8.9	0	-	49	64.1	10.1	0	-
HCM Lane LOS	A	A	-	E	F	B	A	-
HCM 95th %tile Q(veh)	0	-	-	0.4	2.8	0.1	-	-

Intersection													
Int Delay, s/veh	8.7												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations					↶							↷	
Traffic Vol, veh/h	0	0	0	0	179	210	25	772	0	0	0	0	
Future Vol, veh/h	0	0	0	0	179	210	25	772	0	0	0	0	
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	
Sign Control	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None	
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-	
Veh in Median Storage, #	-	2	-	-	0	-	-	0	-	-	16965	-	
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-	
Peak Hour Factor	92	92	92	89	89	89	97	97	97	92	92	92	
Heavy Vehicles, %	0	0	0	0	1	1	0	2	0	0	0	0	
Mvmt Flow	0	0	0	0	201	236	26	796	0	0	0	0	

Major/Minor	Minor1	Major1										
Conflicting Flow All	-	848	398	0	0	-						
Stage 1	-	848	-	-	-	-						
Stage 2	-	0	-	-	-	-						
Critical Hdwy	-	6.52	6.92	4.1	-	-						
Critical Hdwy Stg 1	-	5.52	-	-	-	-						
Critical Hdwy Stg 2	-	-	-	-	-	-						
Follow-up Hdwy	-	4.01	3.31	2.2	-	-						
Pot Cap-1 Maneuver	0	299	604	-	-	0						
Stage 1	0	378	-	-	-	0						
Stage 2	0	-	-	-	-	0						
Platoon blocked, %	-											
Mov Cap-1 Maneuver	-	0	604	-	-	-						
Mov Cap-2 Maneuver	-	0	-	-	-	-						
Stage 1	-	0	-	-	-	-						
Stage 2	-	0	-	-	-	-						

Approach	WB	NB
HCM Control Delay, s	25	
HCM LOS	D	

Minor Lane/Major Mvmt	NBL	NBTWBLn1
Capacity (veh/h)	-	604
HCM Lane V/C Ratio	-	0.724
HCM Control Delay (s)	-	25
HCM Lane LOS	-	D
HCM 95th %tile Q(veh)	-	6.1

Intersection												
Int Delay, s/veh	6.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗		↖						↕	↕
Traffic Vol, veh/h	0	0	0	181	23	0	0	0	0	0	1056	20
Future Vol, veh/h	0	0	0	181	23	0	0	0	0	0	1056	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	83	83	83	92	92	92	88	88	88
Heavy Vehicles, %	0	0	0	1	0	0	0	0	0	0	1	0
Mvmt Flow	0	0	0	218	28	0	0	0	0	0	1200	23

Major/Minor	Minor2		Minor1			Major2		
Conflicting Flow All	-	-	612	600	1223	-	-	0
Stage 1	-	-	-	0	0	-	-	-
Stage 2	-	-	-	600	1223	-	-	-
Critical Hdwy	-	-	6.9	7.52	6.5	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	6.52	5.5	-	-	-
Follow-up Hdwy	-	-	3.3	3.51	4	-	-	-
Pot Cap-1 Maneuver	0	0	441	387	181	0	0	-
Stage 1	0	0	-	-	-	0	0	-
Stage 2	0	0	-	457	254	0	0	-
Platoon blocked, %								-
Mov Cap-1 Maneuver	-	-	441	387	181	-	-	-
Mov Cap-2 Maneuver	-	-	-	387	181	-	-	-
Stage 1	-	-	-	-	-	-	-	-
Stage 2	-	-	-	457	254	-	-	-

Approach	EB		WB		SB	
HCM Control Delay, s	0		38		0	
HCM LOS	A		E			

Minor Lane/Major Mvmt	EBLn1WBLn1		SBT	SBR
Capacity (veh/h)	- 343		-	-
HCM Lane V/C Ratio	- 0.717		-	-
HCM Control Delay (s)	0	38	-	-
HCM Lane LOS	A	E	-	-
HCM 95th %tile Q(veh)	- 5.3		-	-



## **APPENDIX G**

### **2022 Combined Capacity/Level-of-Service Analysis**



7/11 Store - Darien, CT  
6: I-95 SB On-Ramp & Boston Post Rd (US Rte 1)

Weekday Morning Peak Hour  
2022 Combined



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗								↖↑	
Traffic Volume (vph)	0	337	196	0	0	0	0	0	0	5	713	0
Future Volume (vph)	0	337	196	0	0	0	0	0	0	5	713	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	16	12	12	12	12	12	12	11	11	11
Storage Length (ft)	0		80	0		0	0		0	0		0
Storage Lanes	0		1	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Fr t			0.850									
Fl t Protected												
Satd. Flow (prot)	0	3355	1760	0	0	0	0	0	0	0	3422	0
Fl t Permitted												
Satd. Flow (perm)	0	3355	1760	0	0	0	0	0	0	0	3422	0
Right Turn on Red			Yes			Yes			Yes	Yes		Yes
Satd. Flow (RTOR)			233								46	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		197			404			155			224	
Travel Time (s)		3.8			7.9			3.0			4.4	
Peak Hour Factor	0.84	0.84	0.84	0.92	0.92	0.92	0.92	0.92	0.92	0.87	0.87	0.87
Heavy Vehicles (%)	0%	4%	4%	0%	0%	0%	0%	0%	0%	0%	2%	0%
Adj. Flow (vph)	0	401	233	0	0	0	0	0	0	6	820	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	401	233	0	0	0	0	0	0	0	826	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		10			10			10			20	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	0.85	1.00	1.00	1.00	1.00	1.00	1.00	1.04	1.04	1.04
Turning Speed (mph)	20		9	20		9	20		9	20		9
Number of Detectors		1	0							1	1	
Detector Template										Left		
Leading Detector (ft)		86	0							20	30	
Trailing Detector (ft)		80	0							0	0	
Detector 1 Position(ft)		80	0							0	0	
Detector 1 Size(ft)		6	20							20	30	
Detector 1 Type		Cl+Ex	Cl+Ex							Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0							0.0	0.0	
Detector 1 Queue (s)		0.0	0.0							0.0	0.0	
Detector 1 Delay (s)		0.0	0.0							0.0	0.0	
Turn Type		NA	Free							Perm	NA	
Protected Phases		2									4	
Permitted Phases			Free							4		
Detector Phase		2								4	4	
Switch Phase												
Minimum Initial (s)		18.0								9.0	9.0	

7/11 Store - Darien, CT  
 6: I-95 SB On-Ramp & Boston Post Rd (US Rte 1)

Weekday Morning Peak Hour  
 2022 Combined

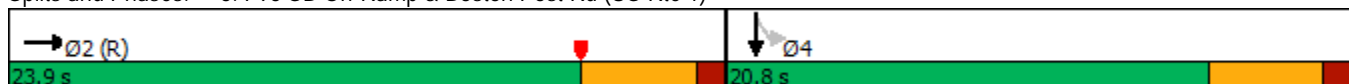


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)		22.9								13.8	13.8	
Total Split (s)		23.9								20.8	20.8	
Total Split (%)		53.5%								46.5%	46.5%	
Maximum Green (s)		19.0								16.0	16.0	
Yellow Time (s)		3.9								3.8	3.8	
All-Red Time (s)		1.0								1.0	1.0	
Lost Time Adjust (s)		0.0									0.0	
Total Lost Time (s)		4.9									4.8	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0								3.0	3.0	
Recall Mode		C-Min								None	None	
Act Effect Green (s)		19.9	44.7									15.1
Actuated g/C Ratio		0.45	1.00									0.34
v/c Ratio		0.27	0.13									0.70
Control Delay		9.0	0.2									15.3
Queue Delay		0.0	0.0									0.0
Total Delay		9.0	0.2									15.3
LOS		A	A									B
Approach Delay		5.8										15.3
Approach LOS		A										B
Queue Length 50th (ft)		32	0									84
Queue Length 95th (ft)		53	0									119
Internal Link Dist (ft)		117				324			75			144
Turn Bay Length (ft)			80									
Base Capacity (vph)		1526	1760									1284
Starvation Cap Reductn		0	0									0
Spillback Cap Reductn		0	0									0
Storage Cap Reductn		0	0									0
Reduced v/c Ratio		0.26	0.13									0.64

Intersection Summary

Area Type: Other  
 Cycle Length: 44.7  
 Actuated Cycle Length: 44.7  
 Offset: 14.1 (32%), Referenced to phase 2:EBT, Start of Yellow  
 Natural Cycle: 40  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.70  
 Intersection Signal Delay: 11.2  
 Intersection Capacity Utilization 42.9%  
 Analysis Period (min) 15  
 Intersection LOS: B  
 ICU Level of Service A

Splits and Phases: 6: I-95 SB On-Ramp & Boston Post Rd (US Rte 1)



**Intersection**

Int Delay, s/veh 14.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	0	1	47	0	125	1	407	35	139	767	1
Future Vol, veh/h	1	0	1	47	0	125	1	407	35	139	767	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	84	84	84	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0	0	4	0	0	6	0
Mvmt Flow	1	0	1	51	0	136	1	485	42	149	825	1

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1700	1653	826	1632	1632	506	826	0	0	527	0	0
Stage 1	1124	1124	-	508	508	-	-	-	-	-	-	-
Stage 2	576	529	-	1124	1124	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	74	99	375	82	102	570	813	-	-	1050	-	-
Stage 1	252	283	-	551	542	-	-	-	-	-	-	-
Stage 2	506	530	-	252	283	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	45	73	375	65	75	570	813	-	-	1050	-	-
Mov Cap-2 Maneuver	45	73	-	65	75	-	-	-	-	-	-	-
Stage 1	251	209	-	550	541	-	-	-	-	-	-	-
Stage 2	385	529	-	185	209	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	51.3		124.8		0		1.4	
HCM LOS	F		F					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	813	-	-	80	183	1050	-
HCM Lane V/C Ratio	0.001	-	-	0.027	1.022	0.142	-
HCM Control Delay (s)	9.4	0	-	51.3	124.8	9	0
HCM Lane LOS	A	A	-	F	F	A	A
HCM 95th %tile Q(veh)	0	-	-	0.1	8.6	0.5	-

Intersection													
Int Delay, s/veh	4.3												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations					↗							↖↗	
Traffic Vol, veh/h	0	0	0	0	188	32	22	320	0	0	0	0	
Future Vol, veh/h	0	0	0	0	188	32	22	320	0	0	0	0	
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	
Sign Control	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None	
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-	
Veh in Median Storage, #	-	2	-	-	0	-	-	0	-	-	16965	-	
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-	
Peak Hour Factor	92	92	92	87	87	87	83	83	83	92	92	92	
Heavy Vehicles, %	0	0	0	0	4	3	0	6	0	0	0	0	
Mvmt Flow	0	0	0	0	216	37	27	386	0	0	0	0	

Major/Minor	Minor1		Major1			
Conflicting Flow All	-	440	193	0	0	-
Stage 1	-	440	-	-	-	-
Stage 2	-	0	-	-	-	-
Critical Hdwy	-	6.58	6.96	4.1	-	-
Critical Hdwy Stg 1	-	5.58	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	4.04	3.33	2.2	-	-
Pot Cap-1 Maneuver	0	505	813	-	-	0
Stage 1	0	571	-	-	-	0
Stage 2	0	-	-	-	-	0
Platoon blocked, %						-
Mov Cap-1 Maneuver	-	0	813	-	-	-
Mov Cap-2 Maneuver	-	0	-	-	-	-
Stage 1	-	0	-	-	-	-
Stage 2	-	0	-	-	-	-

Approach	WB	NB
HCM Control Delay, s	11.4	
HCM LOS	B	

Minor Lane/Major Mvmt	NBL	NBTWBLn1
Capacity (veh/h)	-	813
HCM Lane V/C Ratio	-	0.311
HCM Control Delay (s)	-	11.4
HCM Lane LOS	-	B
HCM 95th %tile Q(veh)	-	1.3

7/11 Store - Darien, CT  
 11: Boston Post Rd (US Rte 1) & Gas Station DW/I-95 SB Off-Ramp

Weekday Morning Peak Hour  
 2022 Combined

Intersection												
Int Delay, s/veh	10.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗		↖						↕	↕
Traffic Vol, veh/h	0	0	0	192	18	0	0	0	0	0	1433	24
Future Vol, veh/h	0	0	0	192	18	0	0	0	0	0	1433	24
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	87	87	87	92	92	92	96	96	96
Heavy Vehicles, %	0	0	0	5	0	0	0	0	0	0	4	4
Mvmt Flow	0	0	0	221	21	0	0	0	0	0	1493	25

Major/Minor	Minor2		Minor1			Major2		
Conflicting Flow All	-	-	759	747	1518	-	-	0
Stage 1	-	-	-	0	0	-	-	-
Stage 2	-	-	-	747	1518	-	-	-
Critical Hdwy	-	-	6.9	7.6	6.5	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	6.6	5.5	-	-	-
Follow-up Hdwy	-	-	3.3	3.55	4	-	-	-
Pot Cap-1 Maneuver	0	0	353	296	120	0	0	-
Stage 1	0	0	-	-	-	0	0	-
Stage 2	0	0	-	364	183	0	0	-
Platoon blocked, %	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	353	296	120	-	-	-
Mov Cap-2 Maneuver	-	-	-	296	120	-	-	-
Stage 1	-	-	-	-	-	-	-	-
Stage 2	-	-	-	364	183	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	77.6	0
HCM LOS	A	F	

Minor Lane/Major Mvmt	EBLn1WBLn1	SBT	SBR
Capacity (veh/h)	- 263	-	-
HCM Lane V/C Ratio	- 0.918	-	-
HCM Control Delay (s)	0 77.6	-	-
HCM Lane LOS	A F	-	-
HCM 95th %tile Q(veh)	- 8.3	-	-

Intersection												
Int Delay, s/veh	6.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕		↕			↕	
Traffic Vol, veh/h	1	0	1	47	0	125	1	407	35	139	767	1
Future Vol, veh/h	1	0	1	47	0	125	1	407	35	139	767	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	84	84	84	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0	0	4	0	0	6	0
Mvmt Flow	1	0	1	51	0	136	1	485	42	149	825	1

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	1700	1653	826	1632	1632	506	826	0	0	527	0	0
Stage 1	1124	1124	-	508	508	-	-	-	-	-	-	-
Stage 2	576	529	-	1124	1124	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	74	99	375	82	102	570	813	-	-	1050	-	-
Stage 1	252	283	-	551	542	-	-	-	-	-	-	-
Stage 2	506	530	-	252	283	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	45	73	375	65	75	570	813	-	-	1050	-	-
Mov Cap-2 Maneuver	45	73	-	65	75	-	-	-	-	-	-	-
Stage 1	251	209	-	550	541	-	-	-	-	-	-	-
Stage 2	385	529	-	185	209	-	-	-	-	-	-	-

Approach	EB		WB		NB			SB		
HCM Control Delay, s	51.3		53.4		0			1.4		
HCM LOS	F		F							

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	813	-	-	80	65	570	1050	-	-
HCM Lane V/C Ratio	0.001	-	-	0.027	0.786	0.238	0.142	-	-
HCM Control Delay (s)	9.4	0	-	51.3	160.2	13.3	9	0	-
HCM Lane LOS	A	A	-	F	F	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	3.6	0.9	0.5	-	-



7/11 Store - Darien, CT  
 6: I-95 SB On-Ramp & Boston Post Rd (US Rte 1)

Weekday Afternoon Peak Hour  
 2022 Combined



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗								↖↑	
Traffic Volume (vph)	0	806	130	0	0	0	0	0	0	14	555	0
Future Volume (vph)	0	806	130	0	0	0	0	0	0	14	555	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	16	12	12	12	12	12	12	11	11	11
Storage Length (ft)	0		80	0		0	0		0	0		0
Storage Lanes	0		1	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00
Fr t			0.850									
Flt Protected											0.999	
Satd. Flow (prot)	0	3455	1794	0	0	0	0	0	0	0	3453	0
Flt Permitted											0.999	
Satd. Flow (perm)	0	3455	1794	0	0	0	0	0	0	0	3453	0
Right Turn on Red			Yes			Yes			Yes	Yes		Yes
Satd. Flow (RTOR)			184								52	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		197			404			155			224	
Travel Time (s)		3.8			7.9			3.0			4.4	
Peak Hour Factor	0.97	0.97	0.97	0.92	0.92	0.92	0.92	0.92	0.92	0.94	0.94	0.94
Heavy Vehicles (%)	0%	1%	2%	0%	0%	0%	0%	0%	0%	0%	1%	0%
Adj. Flow (vph)	0	831	134	0	0	0	0	0	0	15	590	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	831	134	0	0	0	0	0	0	0	605	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		10			10			10			20	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	0.85	1.00	1.00	1.00	1.00	1.00	1.00	1.04	1.04	1.04
Turning Speed (mph)	20		9	20		9	20		9	20		9
Number of Detectors		1	0							1	1	
Detector Template										Left		
Leading Detector (ft)		86	0							20	30	
Trailing Detector (ft)		80	0							0	0	
Detector 1 Position(ft)		80	0							0	0	
Detector 1 Size(ft)		6	20							20	30	
Detector 1 Type		Cl+Ex	Cl+Ex							Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0							0.0	0.0	
Detector 1 Queue (s)		0.0	0.0							0.0	0.0	
Detector 1 Delay (s)		0.0	0.0							0.0	0.0	
Turn Type		NA	Free							Perm	NA	
Protected Phases		2									4	
Permitted Phases			Free							4		
Detector Phase		2								4	4	
Switch Phase												
Minimum Initial (s)		18.0								9.0	9.0	

7/11 Store - Darien, CT  
 6: I-95 SB On-Ramp & Boston Post Rd (US Rte 1)

Weekday Afternoon Peak Hour  
 2022 Combined

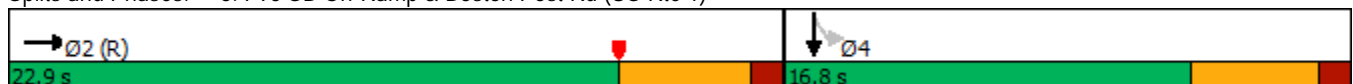


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)		22.9								13.8	13.8	
Total Split (s)		22.9								16.8	16.8	
Total Split (%)		57.7%								42.3%	42.3%	
Maximum Green (s)		18.0								12.0	12.0	
Yellow Time (s)		3.9								3.8	3.8	
All-Red Time (s)		1.0								1.0	1.0	
Lost Time Adjust (s)		0.0									0.0	
Total Lost Time (s)		4.9									4.8	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0								3.0	3.0	
Recall Mode		C-Min								None	None	
Act Effect Green (s)		19.1	39.7									10.9
Actuated g/C Ratio		0.48	1.00									0.27
v/c Ratio		0.50	0.07									0.61
Control Delay		8.7	0.1									14.2
Queue Delay		0.0	0.0									0.0
Total Delay		8.7	0.1									14.2
LOS		A	A									B
Approach Delay		7.5										14.2
Approach LOS		A										B
Queue Length 50th (ft)		60	0									53
Queue Length 95th (ft)		99	0									88
Internal Link Dist (ft)		117				324			75			144
Turn Bay Length (ft)			80									
Base Capacity (vph)		1662	1794									1080
Starvation Cap Reductn		0	0									0
Spillback Cap Reductn		0	0									0
Storage Cap Reductn		0	0									0
Reduced v/c Ratio		0.50	0.07									0.56

Intersection Summary

Area Type: Other  
 Cycle Length: 39.7  
 Actuated Cycle Length: 39.7  
 Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow  
 Natural Cycle: 40  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.61  
 Intersection Signal Delay: 10.1  
 Intersection Capacity Utilization 46.1%  
 Analysis Period (min) 15  
 Intersection LOS: B  
 ICU Level of Service A

Splits and Phases: 6: I-95 SB On-Ramp & Boston Post Rd (US Rte 1)



Intersection												
Int Delay, s/veh	20.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	7	0	5	39	0	104	9	825	29	114	610	6
Future Vol, veh/h	7	0	5	39	0	104	9	825	29	114	610	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	92	92	92	92	92	92	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0	0	1	0	0	1	0
Mvmt Flow	7	0	5	42	0	113	10	897	32	121	649	6

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1884	1843	652	1830	1830	913	655	0	0	929	0	0
Stage 1	894	894	-	933	933	-	-	-	-	-	-	-
Stage 2	990	949	-	897	897	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	55	76	471	60	77	334	942	-	-	744	-	-
Stage 1	338	362	-	322	348	-	-	-	-	-	-	-
Stage 2	299	342	-	337	361	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	29	55	471	47	56	334	942	-	-	744	-	-
Mov Cap-2 Maneuver	29	55	-	47	56	-	-	-	-	-	-	-
Stage 1	331	269	-	315	340	-	-	-	-	-	-	-
Stage 2	193	334	-	248	269	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	104.3		226.8		0.1		1.7	
HCM LOS	F		F					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	942	-	-	48	125	744	-
HCM Lane V/C Ratio	0.01	-	-	0.258	1.243	0.163	-
HCM Control Delay (s)	8.9	0	-	104.3	226.8	10.8	0
HCM Lane LOS	A	A	-	F	F	B	A
HCM 95th %tile Q(veh)	0	-	-	0.9	9.8	0.6	-

Intersection													
Int Delay, s/veh	11.2												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations					↻							↻↻	
Traffic Vol, veh/h	0	0	0	0	214	210	25	795	0	0	0	0	
Future Vol, veh/h	0	0	0	0	214	210	25	795	0	0	0	0	
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	
Sign Control	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None	
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-	
Veh in Median Storage, #	-	2	-	-	0	-	-	0	-	-	16965	-	
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-	
Peak Hour Factor	92	92	92	89	89	89	97	97	97	92	92	92	
Heavy Vehicles, %	0	0	0	0	1	1	0	2	0	0	0	0	
Mvmt Flow	0	0	0	0	240	236	26	820	0	0	0	0	

Major/Minor	Minor1	Major1				
Conflicting Flow All	-	872	410	0	0	-
Stage 1	-	872	-	-	-	-
Stage 2	-	0	-	-	-	-
Critical Hdwy	-	6.52	6.92	4.1	-	-
Critical Hdwy Stg 1	-	5.52	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	4.01	3.31	2.2	-	-
Pot Cap-1 Maneuver	0	289	594	-	-	0
Stage 1	0	369	-	-	-	0
Stage 2	0	-	-	-	-	0
Platoon blocked, %						-
Mov Cap-1 Maneuver	-	0	594	-	-	-
Mov Cap-2 Maneuver	-	0	-	-	-	-
Stage 1	-	0	-	-	-	-
Stage 2	-	0	-	-	-	-

Approach	WB	NB
HCM Control Delay, s	31.1	
HCM LOS	D	

Minor Lane/Major Mvmt	NBL	NBTWBLn1
Capacity (veh/h)	-	594
HCM Lane V/C Ratio	-	0.802
HCM Control Delay (s)	-	31.1
HCM Lane LOS	-	D
HCM 95th %tile Q(veh)	-	7.9

Intersection												
Int Delay, s/veh	10.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗		↖						↕	↕
Traffic Vol, veh/h	0	0	0	216	23	0	0	0	0	0	1083	20
Future Vol, veh/h	0	0	0	216	23	0	0	0	0	0	1083	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	83	83	83	92	92	92	88	88	88
Heavy Vehicles, %	0	0	0	1	0	0	0	0	0	0	1	0
Mvmt Flow	0	0	0	260	28	0	0	0	0	0	1231	23

Major/Minor	Minor2		Minor1			Major2		
Conflicting Flow All	-	-	627	616	1254	-	-	0
Stage 1	-	-	-	0	0	-	-	-
Stage 2	-	-	-	616	1254	-	-	-
Critical Hdwy	-	-	6.9	7.52	6.5	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	6.52	5.5	-	-	-
Follow-up Hdwy	-	-	3.3	3.51	4	-	-	-
Pot Cap-1 Maneuver	0	0	431	377	173	0	0	-
Stage 1	0	0	-	-	-	0	0	-
Stage 2	0	0	-	447	246	0	0	-
Platoon blocked, %	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	431	377	173	-	-	-
Mov Cap-2 Maneuver	-	-	-	377	173	-	-	-
Stage 1	-	-	-	-	-	-	-	-
Stage 2	-	-	-	447	246	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	53.9	0
HCM LOS	A	F	

Minor Lane/Major Mvmt	EBLn1WBLn1	SBT	SBR
Capacity (veh/h)	- 339	-	-
HCM Lane V/C Ratio	- 0.849	-	-
HCM Control Delay (s)	0 53.9	-	-
HCM Lane LOS	A F	-	-
HCM 95th %tile Q(veh)	- 7.7	-	-

Intersection												
Int Delay, s/veh	8.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕		↕			↕	
Traffic Vol, veh/h	7	0	5	39	0	104	9	825	29	114	610	6
Future Vol, veh/h	7	0	5	39	0	104	9	825	29	114	610	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	92	92	92	92	92	92	94	94	94
Heavy Vehicles, %	0	0	0	0	0	0	0	1	0	0	1	0
Mvmt Flow	7	0	5	42	0	113	10	897	32	121	649	6

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1884	1843	652	1830	1830	913	655	0	0	929	0	0
Stage 1	894	894	-	933	933	-	-	-	-	-	-	-
Stage 2	990	949	-	897	897	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	55	76	471	60	77	334	942	-	-	744	-	-
Stage 1	338	362	-	322	348	-	-	-	-	-	-	-
Stage 2	299	342	-	337	361	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	29	55	471	47	56	334	942	-	-	744	-	-
Mov Cap-2 Maneuver	29	55	-	47	56	-	-	-	-	-	-	-
Stage 1	331	269	-	315	340	-	-	-	-	-	-	-
Stage 2	193	334	-	248	269	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	104.3		80.1		0.1		1.7	
HCM LOS	F		F					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	942	-	-	48	47	334	744	-	-
HCM Lane V/C Ratio	0.01	-	-	0.258	0.902	0.338	0.163	-	-
HCM Control Delay (s)	8.9	0	-	104.3	237.2	21.2	10.8	0	-
HCM Lane LOS	A	A	-	F	F	C	B	A	-
HCM 95th %tile Q(veh)	0	-	-	0.9	3.7	1.5	0.6	-	-

## **APPENDIX I**

### **Capacity/Level-of-Service Analysis Summary**

