

TRAFFIC IMPACT STUDY

PROPOSED THE LEARNING EXPERIENCE Township of South Orange Village Essex County, New Jersey

Prepared For: The Learning Experience

Stonefield Engineering & Design, LLC April 12, 2019 S-19051

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INTRODUCTION

This Traffic Impact Study was prepared to investigate the potential impacts of the proposed The Learning Experience childcare center on the adjacent roadway network. The subject property is located at 109 and 115 South Orange Avenue in the Township of South Orange Village, Essex County, New Jersey. The site location is shown on appended **Figure 1**.

The subject property is designated as Block 1904, Lots 16 and 17 as depicted on the Township of South Orange Village Tax Map. The site has approximately 110 feet of frontage along South Orange Avenue. The existing site is occupied by a Michelin Automotive Tires retail store. Access is presently provided via one (I) full-movement driveway along South Orange Avenue. Under the proposed development program, the existing structure would be razed and a 16,327-square-foot, two (2)-story The Learning Experience childcare center would be constructed. The existing full-movement driveway along South Orange Avenue is proposed to remain as is.

METHODOLOGY

Stonefield Engineering & Design, LLC has prepared this Traffic Impact Study in accordance with the recommended guidelines and practices outlined by the Institute of Transportation Engineers (ITE) within Transportation Impact Analyses for Site Development. A detailed field investigation was performed to assess the existing conditions of the adjacent roadway network. A data collection effort was completed to identify the existing traffic volumes at the study intersections to serve as a base for the traffic analyses. Capacity analysis, a procedure used to estimate the traffic-carrying ability of roadway facilities over a range of defined operating conditions, was performed using the Highway Capacity Manual, 6th Edition (HCM) and the Highway Capacity Software (HCS 7) for all study conditions to assess the roadway operations.

For an unsignalized intersection, Level of Service (LOS) A indicates operations with delay of less than 10 seconds per vehicle, while LOS F describes operations with delay in excess of 50 seconds per vehicle. For a signalized intersection, LOS A indicates operations with delay of less than 10 seconds per vehicle, while LOS F describes operations with delay in excess of 80 seconds per vehicle. The Technical Appendix contains the Highway Capacity Analysis Detail Sheets for the study intersections analyzed in this assessment.

2019 EXISTING CONDITION

2019 EXISTING ROADWAY CONDITIONS

The proposed The Learning Experience childcare center is located at 109 and 115 South Orange Avenue in the Township of South Orange Village, Essex County, New Jersey. The subject property is designated as

Block 1904, Lots 16 and 17 as depicted on the Township of South Orange Village Tax Map. The site has approximately 110 feet of frontage along South Orange Avenue. Land uses in the area are a mix of residential, commercial, and educational uses.

South Orange Avenue (County Route 510) is classified as an Urban Principal Arterial roadway with a general east-west orientation and is under the jurisdiction of Essex County. Along the site frontage, the roadway generally provides one (I) lane of travel in each direction, intermittently separated by a two-way left-turn median and has a posted speed limit of 30 mph. Curb and sidewalk are provided along both sides of the roadway, shoulders are not provided, and metered on-street parking is provided along both sides of the roadway. South Orange Avenue provides east-west mobility within Essex County and provides access to the Garden State Parkway and NJSH Route 21 to the east and NJSH Route 24 to the west for a mix of residential and commercial uses along its length.

Church Street is a local roadway with a general north-south orientation and is under the jurisdiction of the Township of South Orange Village. In the vicinity of the site, the roadway provides one (I) lane of travel in each direction. Curb and sidewalk are provided along both sides of the roadway, shoulders are not provided, and on-street parking is permitted along the easterly side of the roadway with a two (2)-hour parking restriction in effect weekdays from 8:00 a.m. to 6:00 p.m. Church Street serves predominantly residential uses along its length.

South Orange Avenue and Church Street intersect to form an unsignalized T-intersection with the northbound approach of Church Street operating under stop control. The eastbound approach of South Orange Avenue provides one (I) shared through/right-turn lane and the westbound approach of South Orange Avenue provides one (I) exclusive left-turn lane and one (I) exclusive through lane. The northbound approach of Church Street provides one (I) shared left-turn/right-turn lane. Crosswalk is provided across the easterly and southerly legs of the intersection.

South Orange Avenue and the existing site driveway intersect to form an unsignalized T-intersection with the southbound approach of the site driveway operating under stop control. The eastbound approach of South Orange Avenue provides one (I) shared left-turn/through lane and the westbound approach of South Orange Avenue provides one (I) shared through/right-turn lane. The southbound approach of the site driveway provides one (I) shared left-turn/right-turn lane. Sidewalk is provided across the site driveway approach to accommodate pedestrian traffic along South Orange Avenue, and a crosswalk is provided across the westerly leg of the intersection.

2019 EXISTING TRAFFIC VOLUMES

Manual turning movement counts were collected during the typical weekday morning and weekday evening time periods to evaluate existing traffic conditions and identify the specific hours when traffic activity on the adjacent roadways is at a maximum and could be potentially impacted by the development of the site. Turning movement counts were collected at the intersection of South Orange Avenue and Church Street, and at the existing Michelin Automotive Tires driveway on Wednesday, March 27, from 7:00 a.m. to 9:00 a.m. and from 4:00 p.m. to 7:00 p.m.

The study time periods were chosen as they are representative of the peak periods of both the adjacent roadway network and the proposed development. The traffic volume data was collected and analyzed to identify the design peak hour in accordance with HCM and ITE guidelines. Based on the review of the count data the weekday morning peak hour occurred from 7:45 a.m. to 8:45 a.m. and the weekday evening peak hour occurred from 5:45 p.m. to 6:45 p.m. The Technical Appendix contains a summary of the turning movement count data. The 2019 Existing weekday morning and weekday evening peak-hour volumes are summarized on appended **Figure 2**.

2019 EXISTING LOS/CAPACITY ANALYSIS

A Level of Service and Volume/Capacity analysis was conducted for the 2019 Existing Condition during the weekday morning and weekday evening peak hours at the study intersection and site driveway. Under the existing condition, turning movements at the intersection of South Orange Avenue and Church Street are calculated to operate at Level of Service C or better during the weekday morning and weekday evening peak hours. Turning movements at the site driveway are calculated to operate at Level of Service C or better during the weekday morning and weekday evening peak hours.

2021 NO-BUILD CONDITION

BACKGROUND GROWTH

The 2019 Existing Condition traffic volume data was grown to a future horizon year of 2021, which is a conservative estimate for when the proposed The Learning Experience childcare center is expected to be fully constructed. In accordance with industry guidelines, the existing traffic volumes at the study intersections were increased by 2.00% annually for two (2) years. The 2.00% background growth rate was obtained from the New Jersey Department of Transportation (NJDOT) Annual Background Growth Rate Table.

OTHER PLANNED DEVELOPMENT PROJECTS

To evaluate the future traffic conditions, it is important to consider the potential site-generated traffic of other projects that could influence the traffic volume at the study intersections. Other planned development projects include those that are either in the entitlement process or have recently been approved for building permits in proximity to the proposed development. Based on consultations with the South Orange Village Engineer, Salvatore Renda, there are no planned development projects within the area of the subject site. As such, the application of the background growth rate would be adequate to account for background traffic growth.

2021 NO-BUILD TRAFFIC VOLUMES

The background growth rate was applied to the 2019 Existing Traffic Volumes to calculate the 2021 No-Build Traffic Volumes for the weekday morning and weekday evening peak hours. These volumes are summarized on appended **Figure 3**.

2021 NO-BUILD LOS/CAPACITY ANALYSIS

A Level of Service and Volume/Capacity analysis was also conducted for the 2021 No-Build Condition during the weekday morning and weekday evening peak periods at the study intersection and site driveway. Turning movements at the intersection of South Orange Avenue and Church Street are calculated to operate at acceptable Level of Service D or better during the weekday morning peak hour and generally consistently with the findings of the Existing Condition during the weekday evening peak hour. Turning movements at the site driveway are calculated to operate generally consistently with the Existing condition for the weekday morning and weekday evening peak hours.

2021 BUILD CONDITION

The site-generated traffic volume of the proposed The Learning Experience childcare center was estimated to identify the potential impacts of the project. For the purpose of this analysis, a complete project "build out" is assumed within two (2) years of the preparation of this study.

TRIP GENERATION

Trip generation projections for the proposed The Learning Experience childcare center were prepared utilizing the ITE's <u>Trip Generation Manual</u>, 10th Edition. Trip generation rates associated with Land Use 565 "Day Care Center" were cited for the proposed 16,327-square-foot The Learning Experience childcare center. **Table I** provides the weekday morning and weekday evening trip generation volumes associated with the proposed development.

TABLE I - PROPOSED TRIP GENERATION

		day Mo	•	Weekday Evening Peak Hour					
Land Use	Enter	Exit	Total	Enter	Exit	Total			
16,327 SF Day Care Center ITE Land Use 565	95	85	180	86	96	182			

It is important to note that the existing site is presently developed with a 12,253-square-foot Michelin Automotive Tires retail store that generates trips prior to the development of the proposed childcare center. As such, the anticipated increase of site-generated trips would be less than the ITE rates would suggest. **Table** 2 provides the net trip increase during the weekday morning and weekday evening peak periods.

TABLE 2 - NET TRIP GENERATION INCREASE

		day Mo	_	Weekday Evening Peak Hour					
Land Use	Enter	Exit	Total	Enter	Exit	Total			
Existing 12,253 SF Tire Store As Counted	5	3	8	1	3	4			
Proposed 16,327 SF Day Care Center ITE Land Use 565	95	85	180	86	96	182			
Net Trip Increase	+90	+82	+172	+85	+93	+178			

As shown in Table 2, a net trip increase of 172 trips is anticipated during the weekday morning peak hour and a net trip increase of 178 trips is anticipated during the weekday evening peak hour.

TRIP ASSIGNMENT/DISTRIBUTION

The trips generated by the proposed childcare center were distributed based on the geometry of the surrounding roadway network, existing traffic patterns, and the access management plan of the site. The Net Increase in Site-Generated Traffic Volumes are illustrated on **Figure 4**.

2021 BUILD TRAFFIC VOLUMES

The site-generated trips were added to the 2021 No-Build Traffic Volumes to calculate the 2021 Build Traffic Volumes and are shown on appended **Figure 5**.

2021 BUILD LOS/CAPACITY ANALYSIS

A Level of Service and Volume/Capacity analysis was also conducted for the 2021 Build Condition during the weekday morning and weekday evening peak hours at the study intersection and proposed site driveway. **Tables 3** to 6 compare the Existing, No-Build, and Build Conditions Level of Service and delay values. Turning

movements at the intersection of South Orange Avenue and Church Street are calculated to operate generally consistently with the No-Build Condition at Level of Service D during the weekday morning peak hour and at Level of Service D or better during the weekday evening peak hour. Turning movements at the site driveway are calculated to operate generally consistently with the No-Build Condition at Level of Service C during the weekday morning peak hour and at Level of Service C or better during the weekday evening peak hour.

COMPARATIVE LEVEL OF SERVICE (DELAY) TABLES

SOUTH ORANGE AVENUE & CHURCH STREET

WB (Westbound) approach is the South Orange Avenue approach NB (Northbound) approach is the Church Street approach X (n) = Level of Service (seconds of delay)

TABLE 3 - WEEKDAY MORNING PEAK HOUR

Lane Group	2019 Existing	2021 No-Build	2021 Build
WB Left	A (8.8)	A (8.9)	A (9.1)
NB Left/Right	C (23.7)	D (26.1)	D (30.1)

TABLE 4 - WEEKDAY EVENING PEAK HOUR

Lane Group	2019 Existing	2021 No-Build	2021 Build
WB Left	A (9.1)	A (9.2)	A (9.4)
NB Left/Right	C (21.1)	C (22.8)	D (25.4)

SOUTH ORANGE AVENUE & SITE DRIVEWAY

EB (Eastbound) approach is the South Orange Avenue approach SB (Southbound) approach is the site driveway approach

X (n) = Level of Service (seconds of delay)

TABLE 5 - WEEKDAY MORNING PEAK HOUR

Lane Group	2019 Existing	2021 No-Build	-2021 Build
EB Left/Through	A (9.1)	A (9.2)	A (9.7)
SB Left/Right	C (16.3)	C (16.9)	C (22.8)

TABLE 6 - WEEKDAY EVENING PEAK HOUR

Lane Group	2019 Existing	2021 No-Build	2021 Build
EB Left/Through	A (8.9)	A (9.0)	A (9.4)
SB Left/Right	B (11.6)	B (11.8)	C (23.7)

SITE CIRCULATION/PARKING SUPPLY

A review was conducted of the proposed The Learning Experience childcare center using the Site Plan prepared by Jarmel Kizel Architects & Engineers, Inc., dated January 17, 2019. In completing this review, particular attention was focused on the site access, circulation, and parking supply.

The existing access is proposed to remain via the one (I) full-movement driveway along South Orange Avenue. Two-way vehicular circulation throughout the site and parking maneuvers would be facilitated via 24-foot-wide drive aisles. The proposed The Learning Experience childcare center would be located in the southeasterly portion of the property with the parking area located to the west and north of the building. The trash enclosure would be provided in the northwesterly corner of the property.

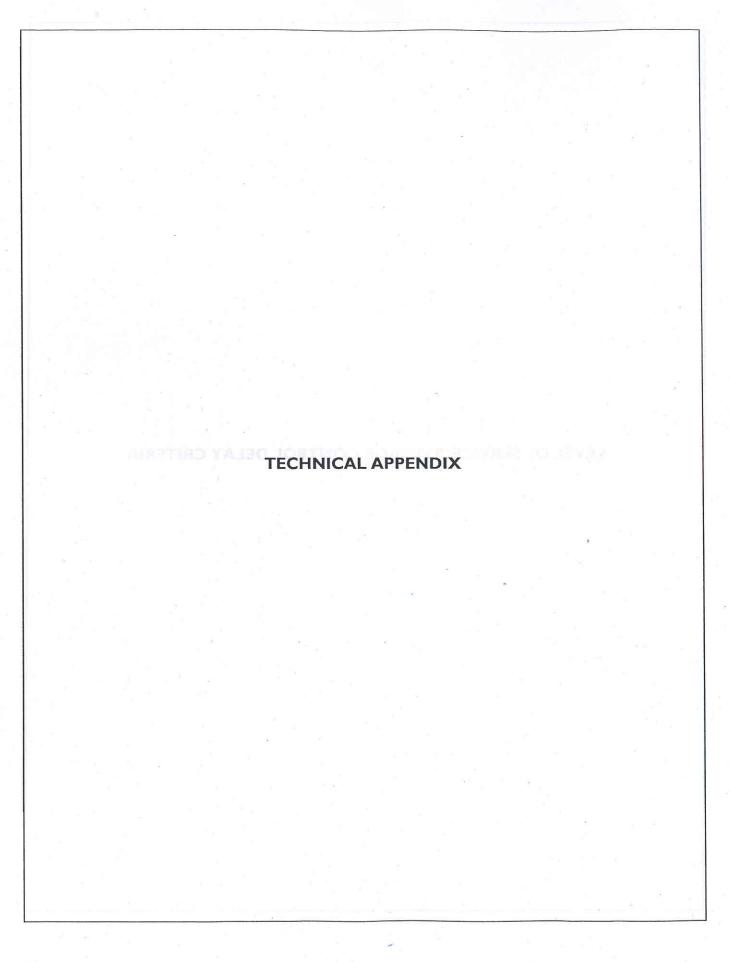
Regarding student drop-off, parents would park within the lot and walk their child into the building. Similarly, for student pick-up, parents would park within the lot and enter the building and walk their child back to their vehicle. Vehicles would not stack or queue on-site as part of the pick-up/drop-off process.

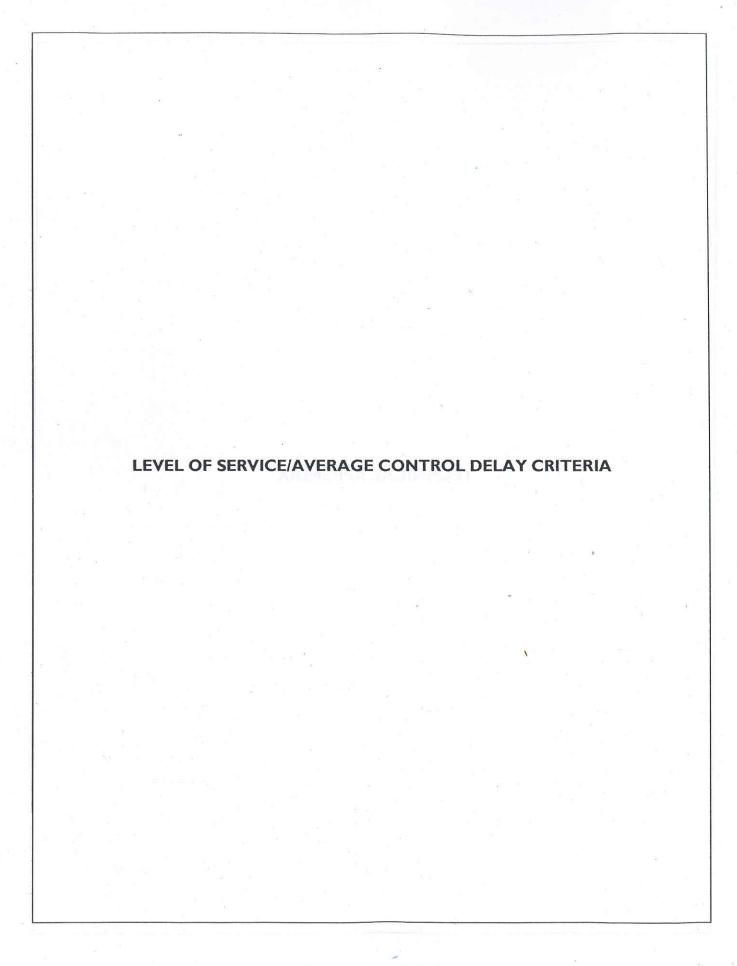
Regarding the parking requirement for the proposed The Learning Experience childcare center, the Township of South Orange Village Ordinance requires one (I) space per 800 square-feet for day care centers. For the proposed 16,327-square-foot childcare center, this equates to 21 required spaces. The site would provide 24 total parking spaces, inclusive of one (I) ADA accessible parking space, which meets the parking requirement and would be sufficient to support this project's parking demand. The spaces would be nine (9) feet wide by 18 feet deep in accordance with industry standards.

CONCLUSIONS

This report was prepared to examine the potential traffic impact of the proposed The Learning Experience childcare center. The analysis findings, which have been based on industry-standard guidelines, indicate that the proposed development would not have a significant impact on the traffic operations of the adjacent roadway network. The site driveways and on-site layout have been designed to provide for effective access to and from the subject property and the parking supply would be sufficient to support this project.

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LEVEL OF SERVICE /AVERAGE CONTROL DELAY CRITERIA

The ability of a roadway to effectively accommodate traffic demand is determined through an assessment of the volume-to-capacity ratio, delay and Level of Service of the lane group and/or intersection. The volume-to-capacity ratio is the ratio of traffic flow rate to capacity for a given transportation facility. As defined within the <u>Highway Capacity Manual</u>, 6th Edition (HCM), intersection delay is the total additional travel time experienced by drivers, passengers, or pedestrians as a result of control measures and interaction with other users of the facility, divided by the volume departing from the corresponding cross section of the facility. Level of service is a qualitative measure describing operational conditions within a traffic stream, based on service measures such as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience.

For an unsignalized intersection, LOS A indicates operations with delay less than 10 seconds per vehicle, while LOS F describes operations with delay in excess of 50 seconds per vehicle. For a signalized intersection, LOS A indicates operations with delay less than 10 seconds per vehicle and LOS F denotes operations with delay in excess of 80 seconds per vehicle.

Level Of Service (LOS)	Signalized Delay Range (average control delay in sec/veh)	Unsignalized Delay Range (average control delay in sec/veh)
A	<=10	<=10
В	>10 and <=20	>10 and <=15
С	>20 and <=35	>15 and <=25
D	>35 and <=55	>25 and <=35
E	>55 and <=80	>35 and <=50
F	>80	>50

Source: Highway Capacity Manual, 6th Edition

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Intersection of South Orange Avenue (E/W)

& Church Street (N/S)

Township of South Orange Village. Essex County, New Jersey

Wednesday, March 27, 2019

File Name : S-19051.01

Site Code : 00019051

Start Date: 3/27/2019

Page No : 1

Groups Printed- Auto - HV - B/SB

	Sou	th Orai	nge Avo	enue	Sou	th Oran Westl	-	enue		Church North	Street						
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	- Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	58	12	70	0	95	0	95	3	0	2	5	0	0	0	0	170
07:15 AM	0	124	29	153	5	122	0	127	3	0	2	5	0 :	0	0	0	285
07:30 AM	0	73	8	81	9	163	0	172	6	0	2	8	0	. 0	0	0	261
07:45 AM	0	104	30	134	8	161	0	169	14	0	6	20	0	0	0	0.	323
Total	0	359	79	438	22	541	0	563	26	0	12	38	. 0	0	0	0	1039
08:00 AM	0	93	26	119	19	172	0	191	29	0	18	47	0	0	0	0	357
08:15 AM	0	126	40	166	11	160	0	171	19	0	13	32	0	0	0	0	369
08:30 AM	0	116	16	132	- 1	149	0	150	6	0	6	12	0	0	0	0	294
08:45 AM	. 0	125	17	142	3	139	0	142	5	0	4	9	0	0	0	0	293
Total	0	460	99	559	34	620	0	654	59	0	41	100	0	0	0	0	1313
*** BREAK ***																	
04:00 PM	0	147	8	155	6	133	0	139	6	0	8	14	0	0	0	0	308
04:15 PM	0	130	10	140	7	111	o	118	1	0	6	7	0	0	0	0	265
04:30 PM	0	127	9	136	I	112	0	113	2	0	3	5	0	0	0	0	254
04:45 PM	0	141	13	154	4	117	0	121	3	0	8	11	0	0	0	0	286
Total	0	545	40	585	18	473	0	491	12	0 .	25	37	0	0	0	0	1113
05:00 PM	0	143	7	150	5	121	0	126	4	0	10	14	0	0	0	0	290
05:15 PM	0	146	11	157	6	139	0	145	6	0	11	17	0	0	0	0	319
05:30 PM	0	140	14	154	7	123	0	130	5	0	10	15	0	0	0	0	299
05:45 PM	0	145	17	162	6	164	0	170	7	0	12	- 19	0	0	0	0	351
Total	0	574	49	623	24	547	0	571	22	0	43	65	0	0	0	0	1259
06:00 PM	0	128	8	136	13	148	0	161	9	0	13	22	0	0	0	0	319
06:15 PM	0	140	24	164	9	163	. 0	172	21	0	12	33	0	0	0	0	369
06:30 PM	0	133	23	156	12	139	0	151	8	0	8	16	0	0	0	0	323
06:45 PM	0	132	13	145	7	112	0	119	6	0	13	19	0	0	0	0	283
Total	0	533	68	601	41	562	0	603	44	0	46	90	0	0	0	. 0	1294
Grand Total	0	2471	335	2806	139	2743	0	2882	163	0	167	330	0	0	0	0	6018
Apprch %	0	88.1	11.9	V.	4.8	95.2	0		49.4	0	50.6		0	0	0		
Total %	0	41.1	5.6	46.6	2.3	45.6	0	47.9	2.7	0	2.8	5.5	0	0	0	0	
Auto	0	2459	333	2792	139	2724	0	2863	163	0	166	329	0	. 0	0	0	5984
% Auto	0	99.5	99.4	99.5	100	99.3	0	99.3	100	0	99.4	99.7	0	0	0	0	99.4
HV	0	4	0	4	0	3	0	3	0	0	1	1	0	0	0	0	8
% HV	0	0.2	0	0.1	0	0.1	0	0.1	0	0	0.6	0.3	0	0	0	0	0.1
B/SB	0	8	2	10	0	16	0	16	0	0	0	0	0	0	0	0	26
% B/SB	0	0.3	0.6	0.4	0	0.6	0	0.6	0	0	0	0	0	. 0	0	0	0.4

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	Sou	th Oran Easth	nge Ave	enue	South Orange Avenue Westbound					Church North	Street bound	ad :		1.7			
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis Fron															1.1		14.1;0=00
Peak Hour for En	tire Inter	rsection	Begins a	t 07:45 AM				* * .				. 0					
07:45 AM	0	104	30	134	8	161	0	169	14	0	6	20	0	0	0	0	323
MA 00:80	0	93	26	119	19	172	0	191	29	0	18	47	0	0	0	0	357
08:15 AM	0	126	40	166	11	160	0	171	19	0	13	32	0	0	0	0	369
08:30 AM	0	116	. 16	132	ı	149	0	150	6	0	6	12	0	0	0	0	294
Total Volume	0	439	112	551	39	642	0	681	68	0	43	111	0	0	0	0	1343
% App. Total	0	79.7	20.3		5.7	94.3	0		61.3	0	38.7		0	0	0		
PHF	.000	.871	.700	.830	.513	.933	.000	.891	.586	.000	.597	.590	.000	.000	.000	.000	.910
Auto	0	437	111	548	39	632	0	671	68	0	43	111	0	0	0	0	1330
% Auto	0	99.5	99.1	99.5	100	98.4	0	98.5	100	0	. 100	100	0	0	. 0	0	99.0
HV	0	0	0	0	0	2	0	2	0	0	0	. 0	0	0	0	0	2
% HV	0	0	0	0	0	0.3	0	0.3	0	0	0	0	0	. 0	0	0	0.1
B/SB	0	2	1	3	0	8	0	8	0	0	0	0	0	0	0	0	11
% B/SB	0	0.5	0.9	0.5	0	1.2	. 0	1.2	0	0	0	0	0	0	0	0	0.8
Peak Hour Analys	sis From	04:00 Pf	1 to 06:	45 PM - Pea	ak I of I												
Peak Hour for En	tire Inte	rsection	Begins a	t 05:45 PM													
05:45 PM	0	145	17	162	6	164	0	170	7	0	12	19	0	0	0	0	351
06:00 PM	0	128	8	136	13	148	0	161	9	0	13	22	0	0	0	0	319
06:15 PM	0	140	24	164	9	163	0	172	21	0	12	33	0	.0	0	0	369
06:30 PM	0	133	23	156	12	139	0	151	8	0	8	16	0	0	0	0	323
Total Volume	0	546	72	618	40	614	0	654	45	0	45	90	0	0	0	0	1362
% App. Total	0	88.3	11.7		6.1	93.9	0		50	0	50		0	0	0		
PHF	.000	.941	.750	.942	.769	.936	.000	.951	.536	.000	.865	.682	.000	.000	.000	.000	.923
Auto	0	543	71	614	40	614	0	654	45	0	44	89	0	0	0	0	1357
% Auto	0	99.5	98.6	99.4	100	100	0	100	100	0	97.8	98.9	0	0	0	0	99.6
	0	ı	0	- 1	0	0	. 0	0	0	0	1	1	0	0	0	0	2
HV	0	0.2	0	0.2	0	0	0	0	0	0	2.2	1.1	0	0	0	0	0.
HV % HV	U																
10000	0	2	1	3	0	0	0	0	0	0	0	0	0	0	0	0	3

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Intersection of South Orange Avenue (E/W)

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Groups Printed- Auto - HV - B/SB

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	300		nge Ave ound	enue	South Orange Avenue Westbound					North	hound						
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	bound Right	App. Total	Int. Total
07:00 AM	0	60	0	60	0	94	0	94	0	0	0	0	1	0	I I	2	156
07:15 AM		125	0	126	0	126	1	127	0	. 0	0	0	0	0	1	1	254
07:30 AM	1	74	0	75	0	170	2	172	0	0	0	0	0	0	2	2	249
07:45 AM	2	108	0	110	0	168	0	168	0	0	0	0	0	0	ī	ī	279
Total	4	367	. 0	371	0	558	3	561	0	0	0	0	. 1.	0	5	6	938
08:00 AM	0	111	0	111	0	191	0	191	0	0	0	0	0	0	0	0	302
08:15 AM	2	137	. 0	139	0	171	0	171	0	0	0	0	2	. 0	0	2	312
08:30 AM	1	121	0	122	0	150	0	150	0	0	0	0	0	0	0	0	272
08:45 AM	0	129	0	129	0	142	0	142	0	0	0	0	0	0	0	0	271
Total	3	498	0	501	0	654	0	654	0	0	. 0	0	2	0	0	2	1157
*** BREAK ***																	
04:00 PM	0	155	0	155	0	139	0	139	0	0	0	0	1	0	0	1	295
04:15 PM	0	136	0	136	0	118	1	119	0	0	0	0	0	0	0	0	255
04:30 PM	0	130	0	130	0	113	0	113	0	0	0	0	0	0	0	0	243
04:45 PM	0	149	0	149	0	120	0	120	0	0	0	0	0	0	- 1	1	270
Total	0	570	0	570	0	490	ı	491	0	0	0	0	1	0	1	2	1063
05:00 PM	1	152	0	153	0	126	0	126	0	0	0	0	0	0	0	0	279
05:15 PM	0	157	0	157	0	145	0	145	0	0	0	0	0	0	0	0	302
05:30 PM	0	150	0	150	0	130	2	132	0	0	0	0	0	0	0	0	282
05:45 PM	- 1	156	0	157	0	165	0	165	0	0	0	- 0	0	0	3	3	325
Total	2	615	0	617	0	566	2	568	0	0	0	0	0	0	3	3	1188
06:00 PM	0	141	0	141	0	162	0	162	0	0	0	0	0	0	0	0	303
06:15 PM	0	152	0	152	0	172	. 0	172	0	0	0	0	0	0	0	0	324
06:30 PM	0	141	0	141	0	152	0	152	0	0	0	0	0	0	0	0	293
06:45 PM	0	145	0	145	0	118	0	118	0	0	0	0	0	0	- 1	1	264
Total	0	579	0	579	0	604	0	604	0	0	0	0	0	, , 0	1	I	1184
Grand Total	9	2629	0	2638	0	2872	6	2878	0	0	0	0	4	0	10	14	5530
Apprch %	0.3	99.7	0		0	99.8	0.2		0	0	0		28.6	0	71.4		
Total %	0.2	47.5	0	47.7	0	51.9	0.1	52	0	0	0	0	0.1	0	0.2	0.3	
Auto	9	2616	0	2625	0	2853	6	2859	0	0	0	0	4	0	10	14	5498
% Auto	100	99.5	0	99.5	0	99.3	100	99.3	0	0	0	0	100	0	100	100	99.4
HV	0	5	0	5	0	3	0	3	0	0	0	0	0	0	0	0	8
% HV	0	0.2	0	0.2	0	0.1	0	0.1	0	0	0	0	0	0	0	0	0.1
B/SB	0	8	0	8	0	16	0	16	0	0	0	0	0.	0	0	0	24
% B/SB	0	0.3	0	0.3	0	0.6	0	0.6	0	0	0	0	0	0	0	0	0.4

Stonefield Engineering & Design, LLC 92 Park Avenue, Rutherford, NJ 07070

201.340.4468 t. 201.340.4472 f.

Intersection of South Orange Avenue (E/W)

& Site Driveway (N/S)

Township of South Orange Village, Essex County, New Jersey

Wednesday, March 27, 2019

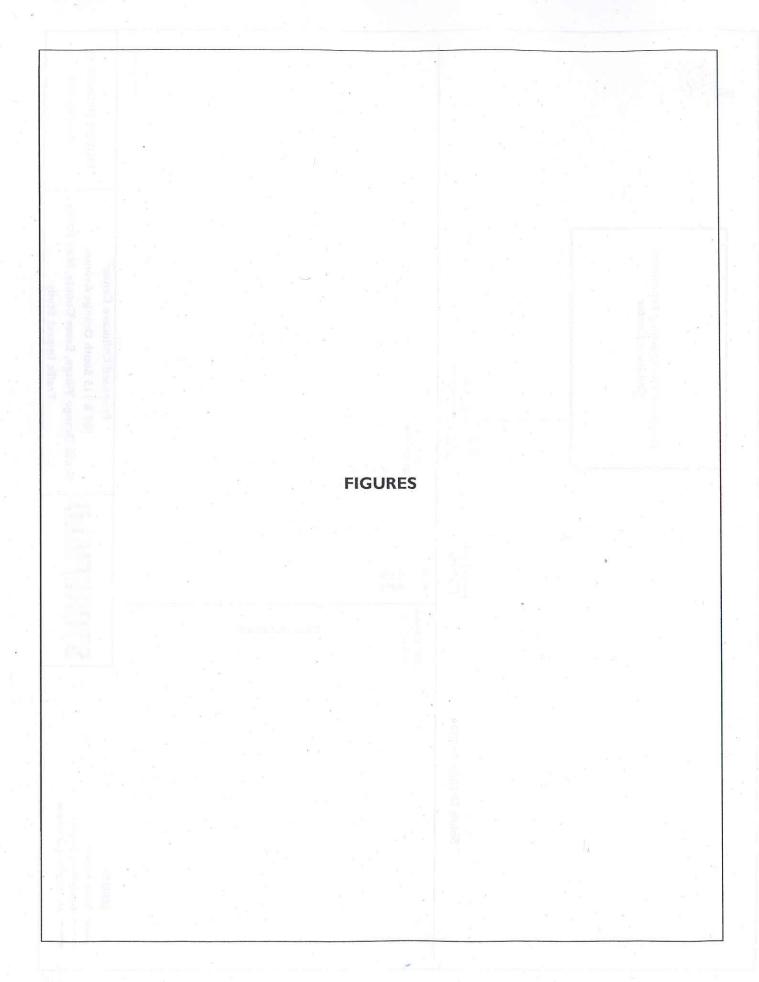
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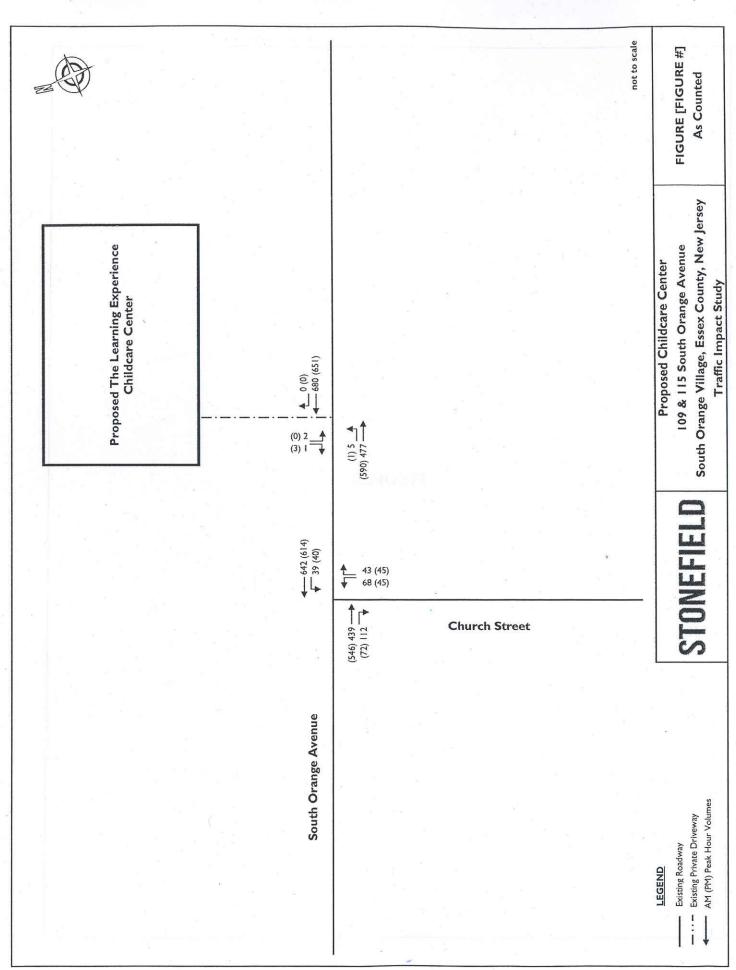
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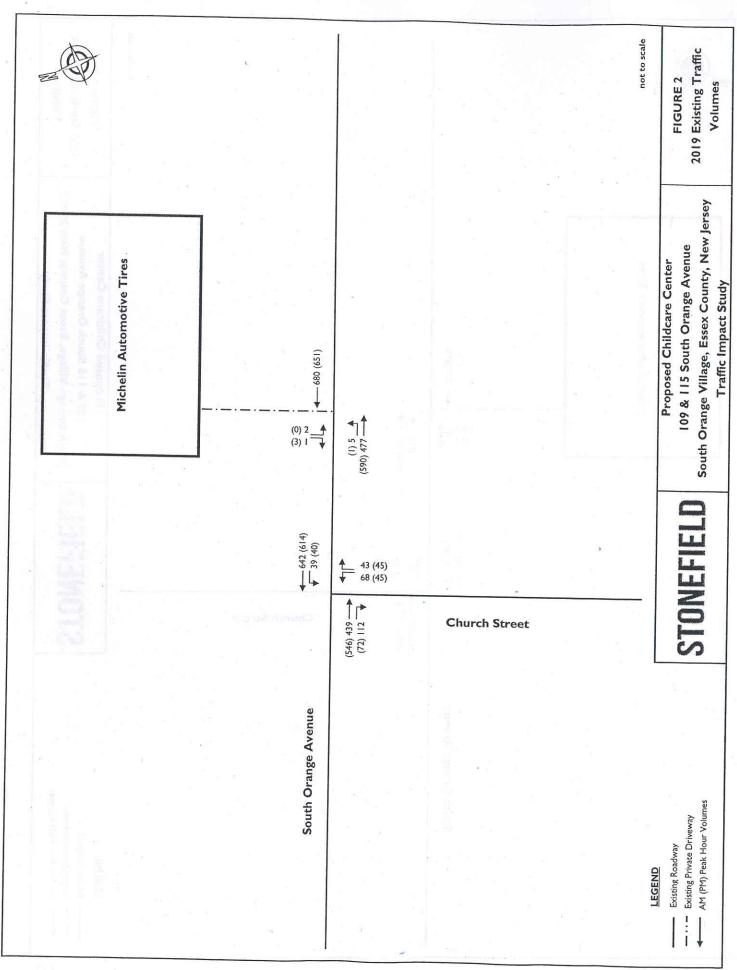
Start Date: 3/27/2019

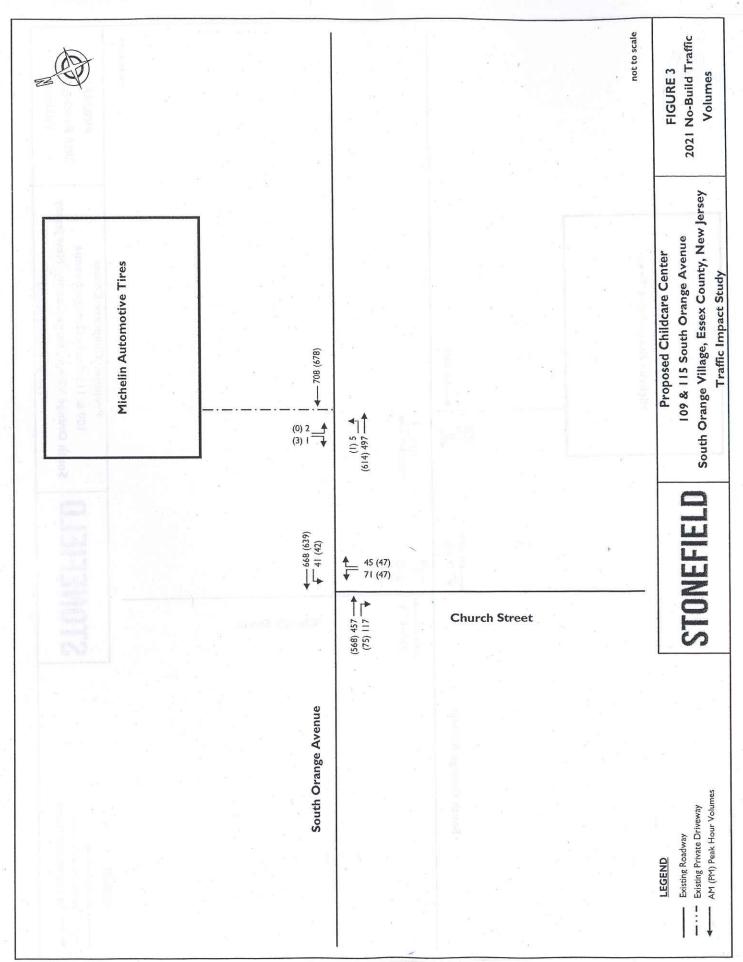
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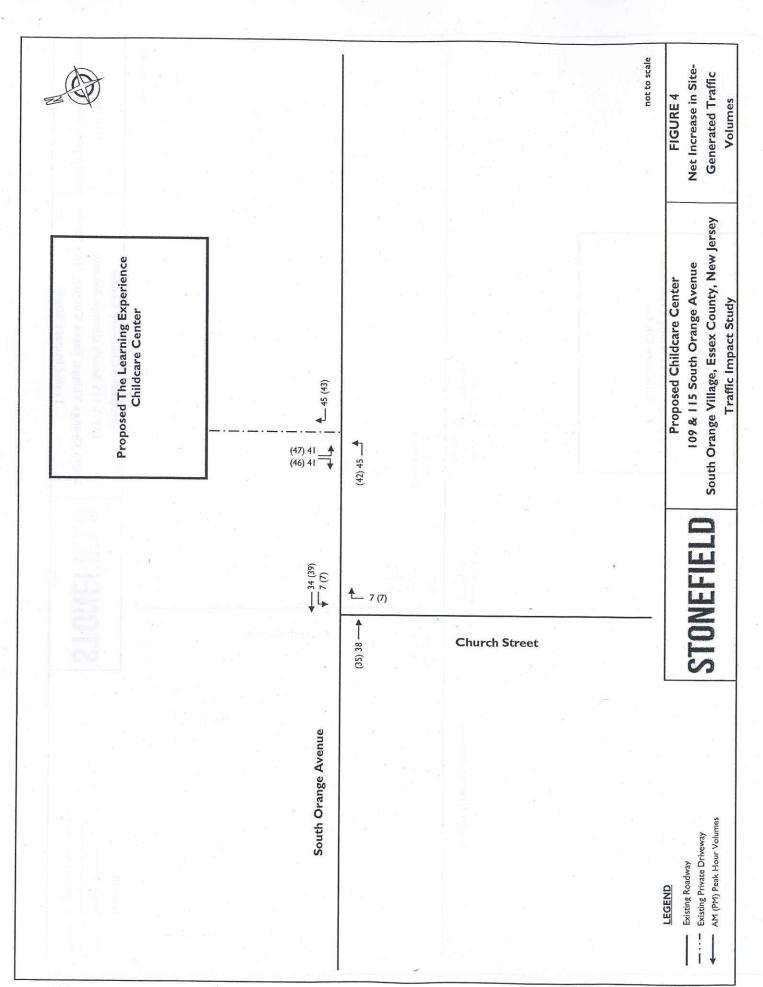
	Sou	th Orar Eastb	-	nue	Sou	th Oran Westl	-	enue	1	North	bound	34°	7.7	Site Dr South			
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
eak Hour Analysis From	07:00 AM	to 08:45 A	M - Peak I	of I											10		N. IV
eak Hour for En																	
07:45 AM	2	108	0	110	0	168	0	168	0	0	0	0	0	0	- 1	1	279
08:00 AM	0	111	0	111	0	191	0	191	0	0	0	0	0	0	0	0	302
08:15 AM	2	137	0	139	0	171	0	171	0	0	0	0	2	0	0	2	312
08:30 AM	1	121	0	122	0	150	0	150	0	0	0	0	0	0	0	0	272
Total Volume	5	477	0	482	0	680	0	680	0	0	0	0	2	. 0	- 1	3	1165
% App. Total	1	99	0		0	100	0		0	0	0	E. 18	66.7	0	33.3		
PHF	.625	.870	.000	.867	.000	.890	.000	.890	.000	.000	.000	.000	.250	.000	.250	.375	.933
Auto	. 5	475	0	480	0	670	0	670	0	0	0	0	2	0	1	3	1153
% Auto	100	99.6	0	99.6	0	98.5	0	98.5	0	0	0	0	100	0	100	100	99.0
HV	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	
% HV	0	0	0	0	0	0.3	0	0.3	0	0	0	0	0	0	0	0	0.3
B/SB	0	2	0	2	0	8	0	8	0	0	0	0	0	0	0	0	10
% B/SB	0	0.4	0	0.4	0	1.2	0	1.2	0	0	0	0	0	0	0	0	0.5
eak Hour Analys																	
05:45 PM	1	156	0	157	0	165	0	165	0	0	0	0	0	0	3	3	325
06:00 PM	0	141	. 0	141	0	162	0	162	0	0	0	0	0	0	0	0	303
06:15 PM	0	152	0	152	0	172	0	172	0	0	0	0	0	*0	0	0	324
	0	141	0	141	0	152	0	152	0	0	0	0	0	0	0	0	
06:30 PM																	293
The second secon	- 1	590	0	591	0	651	0	651	0	0	0	0	0	0	3	3	293 1245
Total Volume	0.2	.590 99.8	0	200	0.7%	803039		651	861	0	0	0	0	0	3 100	3	Sill Mickey
The second secon		VIELENS	0.552	200	0	651	0	.946	0			.000	9 1	100		.250	Sill Chicken
Total Volume % App. Total	0.2	99.8	0	591	0	651 100	0		0	0	0		0	0	100		.95
Total Volume % App. Total PHF	0.2	99.8 .946	.000	.941	0 0 .000	651 100 .946	0 000.	.946	0 0 .	.000	.000	.000	.000	.000	100 .250	.250	.95 124
Total Volume % App. Total PHF Auto	0.2 .250	99.8 .946 586	.000	.941 587	0 0 .000	651 100 .946 651	0 0 .000	.946 651	.000	.000	.000	.000	.000	.000	.250 3	.250	.95 124 99.
Total Volume % App. Total PHF Auto % Auto	0.2 .250 I 100	99.8 .946 586 99.3	0 .000 0 0	.941 .587 .99.3	0 0 .000 0	651 100 .946 651 100	0 0 .000 0	.946 651 100	0 0 .000 0	.000 .000 0	0 .000. 0 0	.000	0 .000 0	0 .000 0 0	.250 3 100	.250 3 100	.95 124 99.
Total Volume % App. Total PHF Auto % Auto HV	0.2 .250 I 100 0	99.8 .946 586 99.3 2	0 .000 0 0	.941 587 99.3 2	0 0 .000 0 0	651 100 .946 651 100 0	0 0 .000 0 0	.946 651 100 0	0 0 .000 0 0	.000 .000 0 0	0 .000 0 0	.000	0 .000 0 0	0 .000 0 0	100 .250 3 100 0	.250 3 100 0	124

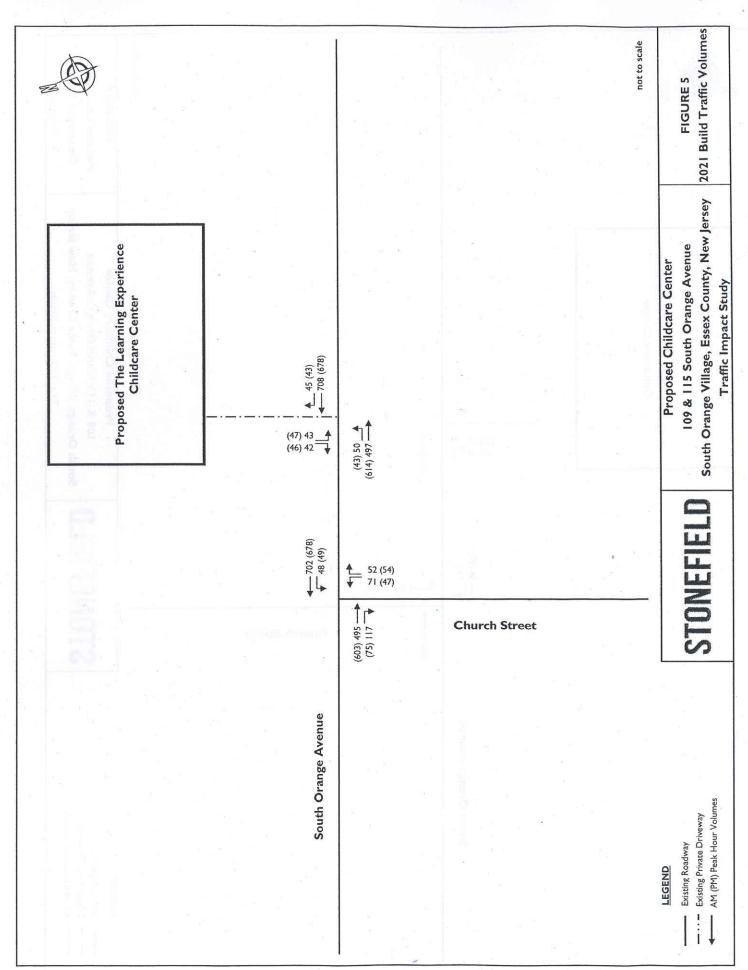


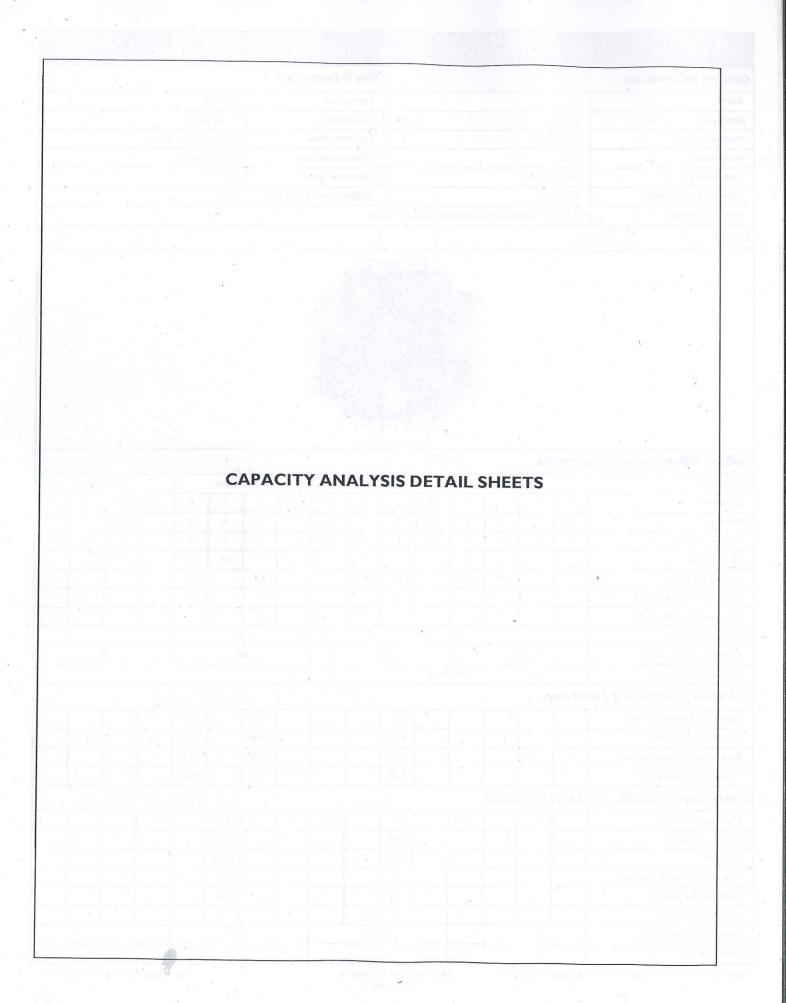




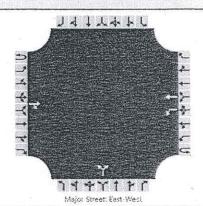








General Information		Site Information						
Analyst	CP	Intersection	1EXAM					
Agency/Co.	SE&D	Jurisdiction	Essex County					
Date Performed	3/27/2019	East/West Street	South Orange Avenue					
Analysis Year	2019	North/South Street	Church Street					
Time Analyzed	Existing AM	Peak Hour Factor	0.91					
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25					
Project Description	S-19051 The Learning Experie	nce Childcare Center						



Vehicle Volumes and Ad	iustments
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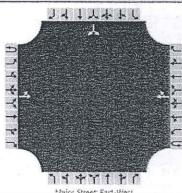
Approach	1	East	oound			West	bound			North	bound			South	bound	
Movement	U	L	Т	R	U	, L	Т	R	· U	L	T	R	U	L	Т	R
Priority	10	1	2	3	4U	4	5	6	Asser at the	7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	1	1	0		0	1	0		0	0	0
Configuration				TR		L	Т				LR	1				
Volume, V (veh/h)			439	112		39	642			68	11	43	***			
Percent Heavy Vehicles (%)						0				0		0				
Proportion Time Blocked		T No									-					11
Percent Grade (%)											0					
Right Turn Channelized		1	10			1	No			١	lo		. 4.	- N	lo	Į,
Median Type/Storage				Undi	vided								Acceptance			

Critical and Follow-up Headways

Base Critical Headway (sec)	4.1	6.1	5.2	9,000
Critical Headway (sec)	4.10	5.40	5.20	
Base Follow-Up Headway (sec)	2.2	3.5	3.3	
Follow-Up Headway (sec)	2.20	3.50	3.30	

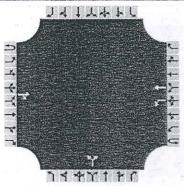
Delay, Queue Length, and Level of Se	ervice		
Flow Rate, v (veh/h)	43	122	
Capacity, c (veh/h)	983	313	
v/c Ratio	0.04	0.39	
95% Queue Length, Q ₉₅ (veh)	0.1	1.8	
Control Delay (s/veh)	8.8	23.7	
Level of Service, LOS	I I A I I		
Approach Delay (s/veh)	0.5	23.7	
Approach LOS		C	

	HCS7 Two	-Way Stop-Control Report						
General Information		Site Information						
Analyst	CP CP	Intersection	2EXAM					
Agency/Co.	SE&D	Jurisdiction	Essex County					
Date Performed	3/27/2019	East/West Street	South Orange Avenue					
Analysis Year	2019	North/South Street	Site Driveway					
Time Analyzed	Existing AM	Peak Hour Factor	0.93					
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25					
Project Description	S-19051 The Learning Experie	nce Childcare Center						



					Majo	Street: E	ast-West									
Vehicle Volumes and Adj	ustme	nts														
Approach		Eastl	oound			West	bound			North	bound		T	South	bound	
Movement	U	L	T	R	U	L	T	R	U	L	E T	R	U	L	Т	R
Priority	10	1	2	3	40	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR	-				1		LR	
Volume, V (veh/h)		5	477				680	0						2		1
Percent Heavy Vehicles (%)		0												0		. 0
Proportion Time Blocked												W. S. S.		100		
Percent Grade (%)									0							
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															
Critical and Follow-up H	eadwa	ys														
Base Critical Headway (sec)		4.1										T	T	6.1		5.2
Critical Headway (sec)		4.10	60.0				9-75			11/				5.40		5.2
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)	1.42-10-	2.20						do re			in a final	Lile i		3.50		3.3
Delay, Queue Length, an	d Leve	l of S	ervice													
Flow Rate, v (veh/h)		5										Ī			3	
Capacity, c (veh/h)		883	11			24/01	nuaria.	1334		1252		Colonia		allia p	321	124
v/c Ratio		0.01			4				-		-				0.01	
95% Queue Length, Q ₉₅ (veh)		0.0	08. sa		1000			119			140			11.62.10	0.0	Dish
Control Delay (s/veh)		9.1					1 =		-		1				16.3	
Level of Service, LOS	441.3	Α		e de la comp			[]		Hinton.			- 3		la de la constante de la const	С	
Approach Delay (s/veh)		C).2	Parent and Parents		***************************************		la a management		A	do	-Company		1	6.3	-
Approach LOS									1,5	~~~~					С	11.37

	HCS7 Two	-Way Stop-Control Report						
General Information		Site Information						
Analyst	СР	Intersection	1EXPM					
Agency/Co.	SE&D J. W. J.	Jurisdiction	Essex County					
Date Performed	3/27/2019	East/West Street	South Orange Avenue					
Analysis Year	2019	North/South Street	Church Street					
Time Analyzed	Existing PM	Peak Hour Factor	0.92					
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25					
Project Description	S-19051 The Learning Experie	nce Childcare Center						



Major Street: East-West

Approach		East	oound			West	bound			North	bound			South	bound	
Movement	U	L	Τ,	R	U	L	T	R	U	L	Т	R	U	L	Т	R
Priority	10	1	2	3	40	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	11	1	0		0	1	0		0	0	0
Configuration				TR		L	Т				LR					
Volume, V (veh/h)			546	72		40	614	7.5		45		45				44.00
Percent Heavy Vehicles (%)						0				0		2				
Proportion Time Blocked											-				io Promisi	70 70 H 5 10 H 2 H
Percent Grade (%)		······································				- The second second				THE REAL PROPERTY.	0					-

Tereene Grade (76)				
Right Turn Channelized	No	No	No	No
Median Type/Storage	Unc	divided		

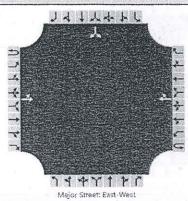
Critical and Follow-up Headways

Vehicle Volumes and Adjustments

Base Critical Headway (sec)	4.1	6.1	5.2	
Critical Headway (sec)	4.10	5.40	5.22	Wanta Cali
Base Follow-Up Headway (sec)	2.2	3.5	3.3	
Follow-Up Headway (sec)	2.20	3.50	3,32	

Delay, Queue Length, and L	evel of Service			
Flow Rate, v (veh/h)		43	98	
Capacity, c (veh/h)	Company of the country of the countr	928	321	
v/c Ratio		0.05	0.30	
95% Queue Length, Q ₉₅ (veh)		0.1	1.3	
Control Delay (s/veh)		9.1	21.1	
Level of Service, LOS		A THE	c	
Approach Delay (s/veh)		0.6	21.1	
Approach LOS			C	The state of the s

	FICS/ TWO:	-Way Stop-Control Report	
General Information		Site Information	
Analyst	СР	Intersection	2EXPM
Agency/Co.	SE&D	Jurisdiction	Essex County
Date Performed	3/27/2019	East/West Street	South Orange Avenue
Analysis Year	2019	North/South Street	Site Driveway
Time Analyzed	Existing PM	Peak Hour Factor	0.95
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	S-19051 The Learning Experie	nce Childcare Center	



venicie volumes and Adju	istments
Approach	E-

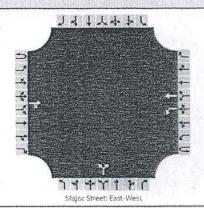
Approach		Eastl	oound			West	bound			North	bound			South	bound	
Movement	U	L	T	R	U	- L	T	R	- U	L	T	R	U	L-1	T	R
Priority	10	1_	2	3	- 4U	4	5	6		7	8	9	1	10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0	Landana Vandana	0	1	0
Configuration		LT						TR							LR	
Volume, V (veh/h)	A S	1	590	6.15			651	0		1.5				0		3
Percent Heavy Vehicles (%)		0	1				-					-1-11		0		0
Proportion Time Blocked		(B.S.	THE SE		la de la composición dela composición de la composición de la composición dela composición dela composición dela composición de la composición de la composición dela composición de la composición de la composición dela c							Tests				7
Percent Grade (%)								_			-	2			0	A. C.
Right Turn Channelized		1	Vo			Hya E 1	No	1		١	No			1	Vo	
Median Type/Storage				Und	ivided								*			lyda an ale

Critical and Follow-up Headways

Base Critical Headway (sec)	4.1							6.1		5.2
Critical Headway (sec)	4.10					100		5.40		5.20
Base Follow-Up Headway (sec)	2.2			-				3.5		3.3
Follow-Up Headway (sec)	2.20	a juliar a		1.142.141			Marie III	3.50	al case	3.30

Delay, Queue Length, and	Level of Service							
Flow Rate, v (veh/h)				1			3	-
Capacity, c (veh/h)	918	industrial		Hat		Anna An Like	546	
v/c Ratio	0.00		-1-			= ==	0.01	
95% Queue Length, Q ₉₅ (veh)	0.0	institute and the	ELLO ELMINO				0.0	
Control Delay (s/veh)	8.9						11.6	
Level of Service, LOS	A	100 to 10					В	
Approach Delay (s/veh)	0.0						11.6	
Approach LOS							B	

	HC21 IMO-	Way Stop-Control Report	
General Information		Site Information	
Analyst	CP	Intersection	1NBAM
Agency/Co.	SE&D	Jurisdiction	Essex County
Date Performed	3/27/2019	East/West Street	South Orange Avenue
Analysis Year	2019	North/South Street	Church Street
Time Analyzed	No-Build AM	Peak Hour Factor	0.91
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	S-19051 The Learning Experier	nce Childcare Center	



					12 To 1 To	
-	1 1 2 1	20			A	ustments
	IQPIFII	2 1/0		ana	445	HISTITIONIS
00/4	C3 5 5 C 2 4	- 40	100111000	M114 M	4.300	1000011101100

Approach		East	bound			West	bound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	Т	R	U	L	T	R	U	L	Т	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	1	1	0		0	1	0		0	0	0
Configuration				TR		L	Т				LR		-			
Volume, V (veh/h)			457	117		41	668			71		45				
Percent Heavy Vehicles (%)						0				0		0	- 5			
Proportion Time Blocked														104		
Percent Grade (%)								- 1			0					
Right Turn Channelized			No				Vo			- 1	No	HEET.		N	10	ly earl
Median Type/Storage				Undi	vided											

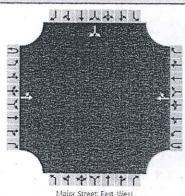
Critical and Follow-up Headways

Base Critical Headway (sec)	4.1	6.1	5.2	
Critical Headway (sec)	4.10	5.40	5.20	12.1104
Base Follow-Up Headway (sec)	2.2	3.5	3.3	
Follow-Up Headway (sec)	2.20	3.50	3,30	

Delay, Queue Length, and Level of Service

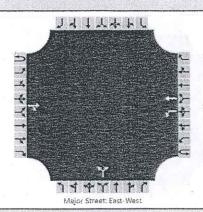
. 45	127		
961	295		
0.05	0.43		
0.1	2.1		
8.9	26.1		
A	D D		
0.5	26.1		
	D		
	45 961 0.05 0.1 8.9 A	45 127	45 127

HCS7 Two-Way Stop-Control Report									
General Information		Site Information							
Analyst	CP CP	Intersection	2NBAM						
Agency/Co.	SE&D	Jurisdiction	Essex County						
Date Performed	3/27/2019	East/West Street	South Orange Avenue						
Analysis Year	2019	North/South Street	Site Driveway						
Time Analyzed	No-Build AM	Peak Hour Factor	0.93						
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25						
Project Description	S-19051 The Learning Experier	nce Childcare Center							



					Majo	ir Street. E	ast-West									
Vehicle Volumes and Ad	justme	nts														
Approach		Eastl	bound			West	bound			North	bound		Southbound			
Movement	U	L	Т	R	U	L	Т	R	U	L	T.	R	U	L	Т	R
Priority	10	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0	4-4-1	0	1 1	0
Configuration		LT						TR							LR	
Volume, V (veh/h)	1	5	497			1813	708	0		19.5			diado	2		1
Percent Heavy Vehicles (%)		0												0		0
Proportion Time Blocked	I I i i i i			111101	1400						*	Aud	美集)		9.7%	1957
Percent Grade (%)		**************	-	<u> </u>		I				1	I			A CONTRACTOR	0 ,	
Right Turn Channelized		1	Vo .			1	Vo.		122	N	lo	.2.U. 17.	South	N	10	ENG
Median Type/Storage		T		Undi	vided											
Critical and Follow-up H	eadwa	ys														
Base Critical Headway (sec)		4.1					1							6.1		5.2
Critical Headway (sec)		4.10					(E)(V.)	1	EVyore of				2000	5.40	海火料	5.20
Base Follow-Up Headway (sec)		2.2						· Lan						3.5		• 3.3
Follow-Up Headway (sec)		2.20	1872 T			Yeur.	100		A STATE OF			J. Shi A		3.50	有些研究 。	3.30
Delay, Queue Length, an	d Level	of Se	ervice													
Flow Rate, v (veh/h)		5												-	3	
Capacity, c (veh/h)		860					N/E				NAME &	Bar Lin	(STANGE)	-szamul s	305	1.10
v/c Ratio		0.01													0.01	
95% Queue Length, Q ₉₅ (veh)		0.0			-111					-bUp	ellinas je mi		100	(\$115. ₁₁₆).	0.0	10000
Control Delay (s/veh)		9.2									-				16.9	
Level of Service, LOS		Α					U.E.		4			12-4-41	6.51		С	MSE
Approach Delay (s/veh)		0	.2				1			L				16	5.9	
Approach LOS				70.53					37777				-		-2 3	

	HCS7 Two-	Way Stop-Control Report	in her en
General Information		Site Information	
Analyst	CP	Intersection	1NBPM
Agency/Co.	SE&D	Jurisdiction	Essex County
Date Performed	3/27/2019	East/West Street	South Orange Avenue
Analysis Year	2019	North/South Street	Church Street
Time Analyzed	No-Build PM	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	S-19051 The Learning Experier	nce Childcare Center	



	Vehicle	Volumes	and Ad	justments
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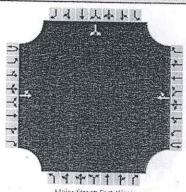
Terror Contract Contr																
Approach		Eastl	oound	-		West	bound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	Т	R	·U	L	Т	R	U	L	Т	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	1	1	0		0	1	0		0	0	0
Configuration			7	TR		L	Т				LR					1111
Volume, V (veh/h)			568	75		42	639			47		47	*		77 03.	
Percent Heavy Vehicles (%)				-		0	1			0		2				
Proportion Time Blocked													TE		15 27	HEC 18
Percent Grade (%)							***************************************	*			0					
Right Turn Channelized			Vo.				No			V	10			N	10	
Median Type/Storage				Undi	ivided				3, 2					72	You :	
Critical and Follow-up H	eadwa	ys														
Base Critical Headway (sec)	1					4.1				6.1		5.2				
Critical Headway (sec)						4.10			7111111	5.40		5.22			with in the	lando qui
B			1		1	1 22	1	i	1	7.5	1	1 22	1	1	1	1

Base Critical Headway (sec)	4.1	6.1	5.2	
Critical Headway (sec)	4.10	5.40	5.22	
Base Follow-Up Headway (sec)	2.2	3.5	3.3	
Follow-Up Headway (sec)	2.20	3.50	3.32	

Delay Queue Length and Level of Service

Delay, Quede Length, and Level of Se	al vice		
Flow Rate, v (veh/h)	46	102	
Capacity, c (veh/h)	907	303	
v/c Ratio	0.05	0.34	
95% Queue Length, Q ₉₅ (veh)	0.2	1.4	
Control Delay (s/veh)	9.2	22.8	
Level of Service, LOS	A		
Approach Delay (s/veh)	0.6	22,8	
Approach LOS		C C	

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General Information		Site Information	
Analyst	CP	Intersection	2NBPM
Agency/Co.	SE&D	Jurisdiction	Essex County
Date Performed	3/27/2019	East/West Street	South Orange Avenue
Analysis Year	2019	North/South Street	Site Driveway
Time Analyzed	No-Build PM	Peak Hour Factor	0.95
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	S-19051 The Learning Experien		1 29.65 FEW PROPERTY OF THE PR



Major Street: East-West

Approach Approach		East	bound			West	bound	***************************************		North	bound		T	South	bound	
Movement	U	L	T	R	U	L	T	R	U	L	Т	R	U		Т	D
Priority	. 10	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0	-	-		12
Configuration		LT				2000	est ness	TR	Miles es	- Vest	0	0		0	1 1 1	0
Volume, V (veh/h)	1	1	614			, 583	678	0							LR	
Percent Heavy Vehicles (%)		0	111			1000000	0,0		783-3-	4.4		setrod)	Virginia.	0	Carpellage Live	3
Proportion Time Blocked			To the second	C-118				100000	ATT STREET					0		0
Percent Grade (%)				3/	1000000					_L			700-00	i walio di	SERVE C	SKIN SKIN

Median Type/Storage	Und	ivided		
	No	J No	No No	No
Right Turn Channelized				0
reiteilt Grade (%)				0

Critical	ana	FOIR	ow-ur	He	adwa	VS
				1000		10000
~	-					

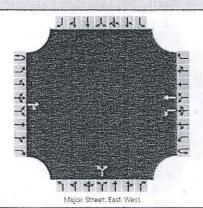
Vehicle Volumes and Adjustments

Base Critical Headway (sec)	18.21	4.1				I	T	T	T	T	T	T T		
Critical Headway (sec)				-	-		-						6.1	5.2
		4.10						1000					5.40	 5.20
Base Follow-Up Headway (sec)	1.8	2.2					1	1	1	†			3.5	2.2
Follow-Up Headway (sec)	- 12	2.20	of Maring	100000		Ummile.	100000						3.5	 3.3
	10000	2,20				2.2					1000	100	3.50	3.30

Delay, Queue Length, and Level of Service

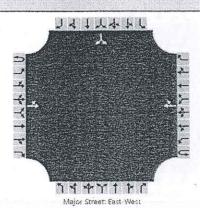
Flow Rate, v (veh/h)	1 1	T			T	Т			1		
Capacity, c (veh/h)	896		15.75.80 5.55	130							3
v/c Ratio	0.00		100	1 25 0	1000000		- 116		100		530
95% Queue Length, Q ₉₅ (veh)										150	0.01
	0.0			\$ E.E.			- 4				0.0
Control Delay (s/veh)	9.0										11.8
Level of Service, LOS	A									1122	В
Approach Delay (s/veh)	0.0	***************************************						***************************************	-		11.8
Approach LOS				,							n 21300

c		les i a						
General Information		Site Information						
Analyst	CP	Intersection	1BAM					
Agency/Co.	TSE&D	Jurisdiction	Essex County					
Date Performed	3/27/2019	East/West Street	South Orange Avenue					
Analysis Year	2019	North/South Street	Church Street					
Time Analyzed	Build AM	Peak Hour Factor	0.91					
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25					
Project Description	S-19051 The Learning Experie	ence Childcare Center	Radional Company of the Company of t					



Approach		Eastl	oound			West	oound			North	oound	2	Southbound					
Movement	U	L	T	R	U	L	Т	R	U	L	T	R	U	L	T	R		
Priority	10	1	2	3	4U	4	- 5	6		7	8	9	-	10	11	12		
Number of Lanes	0	0	1	0	0	1	1	0		0	1	0	Milita	0	0	0		
Configuration				TR	178	L	Т	***************************************			LR							
Volume, V (veh/h)			495	117		48	702			71		52	a Najere	e ballina	1.1200	1,7		
Percent Heavy Vehicles (%)			7.7			0				0	_ 70 e	0		147				
Proportion Time Blocked													47 de 181			A		
Percent Grade (%)			***************************************			A		*		()			£				
Right Turn Channelized	9.5	1	No.	NAMES.		1	lo			N	o	4. 4. 4.	No					
Median Type/Storage				Undi	vided			Late	ing			*****************	C		AGIL T			
Critical and Follow-up H	eadwa	ys									H.							
Base Critical Headway (sec)						4.1				6.1		5.2		111211	-winter)			
Critical Headway (sec)			7.3			4.10				5.40		5.20		27 (1)	1241	Li		
Base Follow-Up Headway (sec)						2.2				3.5		3.3		-1 (35	Half g			
Follow-Up Headway (sec)						2.20				3.50		3.30	40.40					
Delay, Queue Length, an	d Leve	l of S	ervice															
Flow Rate, v (veh/h)					7.5	53					135					1 0		
Capacity, c (veh/h)		7.7			J# 1	928					275	Dura Lije		1121	, Hall, E			
v/c Ratio						0.06					0.49							
95% Queue Length, Q ₉₅ (veh)				112		0.2		11111			2.5				1244			
Control Delay (s/veh)						9.1					30.1		1.7		UC,			
Level of Service, LOS	1-1-1	y i	1		13	Α				lares I	D			12.2				
Approach Delay (s/veh)							.6	h		30	30.1			-S				
Approach LOS	-	427							D							1		

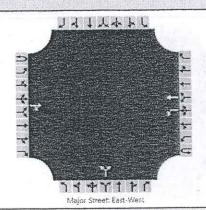
	HCS7 Two	-Way Stop-Control Report	THE ALL PLANTS AND A THE PARTY OF THE PARTY
General Information		Site Information	
Analyst	CP	Intersection	2BAM
Agency/Co.	SE&D	Jurisdiction	Essex County
Date Performed	3/27/2019	East/West Street	South Orange Avenue
Analysis Year	2019	North/South Street	Site Driveway
Time Analyzed	Build AM	Peak Hour Factor	0.93
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	S-19051 The Learning Experie	ence Childcare Center	



1 . 1 . 2		11-1			Adius		4-	
/eni	CIE	voiur	nesc	Ind A	40IUS	unen		

Approach	Eastbound					West	bound			North	bound		Southbound				
Movement	V	L	т	R	U	L	T	R	U	lat.	T	R	U	L	T	R	
Priority	1U	1	2	3	4U	4	5	- 6		- 7	8	9		10	11	12	
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0	
Configuration	-,	LT						TR		+					LR		
Volume, V (veh/h)		50	497				708	45					Harris	43		42	
Percent Heavy Vehicles (%)	-	0	-							-				0		0	
Proportion Time Blocked							2 - 10 - 1 C						10-11				
Percent Grade (%)															0 -		
Right Turn Channelized		1	No	Santa.			Vo			N	10				lo	Vicil	
Median Type/Storage		ivided															
Critical and Follow-up H	eadwa	ys															
Base Critical Headway (sec)	1	4.1					T		-			-		6.1		5.2	
Critical Headway (sec)		4.10										1		5.40		5.20	
Base Follow-Up Headway (sec)	- 11-5	2.2	-											3.5		3.3	
Follow-Up Headway (sec)		2.20				i i i i i i i i i i i i i i i i i i i	. 15				1021112			3.50		3.30	
Delay, Queue Length, an	d Leve	l of S	ervice														
Flow Rate, v (veh/h)	-	54													91		
Capacity, c (veh/h)		825				Hites					i Lasti				292	lya:	
v/c Ratio		0.07													0.31		
95% Queue Length, Q ₉₅ (veh)	a system	0.2	SEE SE	41								Here.	15000	Arian	1.3	5-3-	
Control Delay (s/veh)		9.7										-			22.8		
Level of Service, LOS		Α	111111111										i i i i		С	141	
Approach Delay (s/veh)	1.7						and the same of the same	Commercial		vel na mana				2.	2.8	-	
Approach LOS											Line Line	HER			C	177	

	HCS/ Iwo	-Way Stop-Control Report	
General Information		Site Information	
Analyst	CP	Intersection	1BPM
Agency/Co.	SE&D	Jurisdiction	Essex County
Date Performed	3/27/2019	East/West Street	South Orange Avenue
Analysis Year	2019	North/South Street	Church Street
Time Analyzed	Build PM	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	S-19051 The Learning Experi	ence Childcare Center	- Company and a substant



Vehicle Vo	lumes a	nd Ad	ustments
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Approach		oound	1 = 1	West	oound			North	oound			South	bound					
Movement	U	L	T	R	U	L	Т	R	U	L	Т	R	U	L	T	R		
Priority	10	1	2	3	4U	4	5	6		7	8	9		10	11	12		
Number of Lanes	0	0	1	0	0	1	1	0		0	1	0	39.533	0	0	0		
Configuration				TR		L	T				LR							
Volume, V (veh/h)	1		603	75		49	678			47		54				3.0		
Percent Heavy Vehicles (%)	-					0				0		2	1					
Proportion Time Blocked				in the same														
Percent Grade (%)						*		()									
Right Turn Channelized		No								٨	lo		No No					
Median Type/Storage				Und	ivided													
Critical and Follow-up H	eadwa	ys																
Base Critical Headway (sec)						4.1				6.1		5.2						
Critical Headway (sec)						4.10				5.40		5.22						
Base Follow-Up Headway (sec)						2.2				3.5		3.3						
Follow-Up Headway (sec)						2.20				3.50		3.32						
Delay, Queue Length, ar	d Leve	l of S	ervice															
Flow Rate, v (veh/h)				T	T	53	T				110				-			
Capacity, c (veh/h)						878	- T				285	-			37534			
v/c Ratio	-				T	0.06					0.39							
95% Queue Length, Q ₈₅ (veh)			1 5 75			0.2					1.7				7.5%			
Control Delay (s/veh)						9.4					25.4					_		
Level of Service, LOS					1 10 10 10 10 10 10 10 10 10 10 10 10 10	A			17		D			100				

Approach Delay (s/veh)

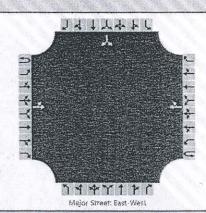
Approach LOS

0.6

25.4

D

	HCS7 Two-	Way Stop-Control Report	
General Information		Site Information	
Analyst	CP	Intersection	2BPM
Agency/Co.	SE&D	Jurisdiction	Essex County
Date Performed	3/27/2019	East/West Street	South Orange Avenue
Analysis Year	2019	North/South Street	Site Driveway
Time Analyzed	Build PM	Peak Hour Factor	0.95
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	S-19051 The Learning Experien	ce Childcare Center	



Approach		Eastb	oound			Westl	oound			North	bound			South	bound			
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R		
Priority	10	- 1	2	3	4U	4	5	6		7	8	9	4	10	11	12		
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0		
Configuration	- 23	LT						TR			77, 1	7.5		97,6	LR			
Volume, V (veh/h)		43	614				678	43		f.et.				47		46		
Percent Heavy Vehicles (%)		0									The second	47.9		0		0		
Proportion Time Blocked													100					
Percent Grade (%)								Marily.							0	-		
Right Turn Channelized		1	No			١	lo			1	Vo O		No					
Median Type/Storage				Und	ivided					1 1 16	A VALLE	i ali						
Critical and Follow-up H	eadwa	ys																
Base Critical Headway (sec)		4.1										1		6.1		5.2		
Critical Headway (sec)		4.10												5.40		5.20		
Base Follow-Up Headway (sec)		2.2												3.5		3.3		
Follow-Up Headway (sec)		2.20	#1						7,513					3.50	15 (5.4)	3.30		
Delay, Queue Length, an	d Leve	l of S	ervice															
Flow Rate, v (veh/h)		45		5			1121								98			
Capacity, c (veh/h)		862				1									289			
v/c Ratio		0.05					-								0.34			
95% Queue Length, Q ₉₅ (veh)		0.2							7.7						1.5			
Control Delay (s/veh)		9.4	+11							-	1.				23.7			
Level of Service, LOS		А											i i		С			
Approach Delay (s/veh)		1	1.3							The second			23.7					
Approach LOS					100								C					

