

Traffic Engineering, Transportation Planning & Design

277 White Horse Pike, Suite 203, Atco, NJ 08004
P: 609-714-0400 F: 609-714-9944 www.sallc.org

David R. Shropshire, PE, PP
A. Andrew Feranda, PE, PTOE, CME
Randal C. Barranger, PE
Nathan B. Mosley, PE, CME

January 29, 2021

Mr. Joseph McElwee
Capitol Seniors Housing
1275 Pennsylvania Avenue
NW 2nd Floor
Washington, DC 20004

(via email: joe.mcelwee@cshpe.com)

Re: **Traffic Engineering Assessment**
CSH Assisted Living – West Orange
West Orange Township, Essex County, NJ
SA Project No. 20178

Dear Mr. McElwee:

In response to your request, Shropshire Associates LLC has prepared a traffic engineering assessment to evaluate the impact of the traffic to be generated by the proposed 85-unit assisted living facility with up to 100 beds. The proposed residence is located along westbound Eagle Rock Avenue west of the Eagle Rock Avenue/Conforti Avenue/Forest Avenue signalized intersection in West Orange Township, Essex County, New Jersey (Figure 1). Access to the development is proposed via one (1) full-movement driveway along westbound Eagle Rock Avenue Road. Currently the site is developed with the vacant former Atrium Country Club facility.

Existing Conditions

A field reconnaissance was conducted in the vicinity of the site to determine the features of the adjacent roadway network within the study area. A description of the roadways and intersections are provided below.

In the vicinity of the site, **Eagle Rock Avenue (CR 611)** is a four-lane roadway that is under the jurisdiction of Essex County and is classified¹ as an Urban Minor Arterial. Eagle Rock Avenue consists of two lanes in each direction and has an approximate cartway width of 40'. The posted speed limit along Eagle Rock Avenue is 35 MPH. For the purpose of this study, Eagle Rock Avenue is assumed to extend in a general east-west direction.

In the vicinity of the site, **Conforti Avenue** is a two-lane local roadway that consists of one lane in each direction and has an approximate cartway width of 34'. The posted speed limit along Conforti Avenue is 25 MPH. For the purpose of this study, Conforti Avenue is assumed to extend in a general north-south direction.

¹ NJDOT Straight Line Diagrams



In the vicinity of the site, **Forest Avenue** is a two-lane local roadway that consists of one lane in each direction and has an approximate cartway width of 30'. The posted speed limit along Forest Avenue is 25 MPH. For the purpose of this study, Forest Avenue is assumed to extend in a general north-south direction.

In the vicinity of the site, **Mann Avenue** is a two-lane local roadway that consists of one lane in each direction and has an approximate cartway width of 30'. The posted speed limit along Mann Avenue is 25 MPH. For the purpose of this study, Mann Avenue is assumed to extend in a general north-south direction.

The **Eagle Rock Avenue/Conforti Avenue/Forest Avenue** signalized intersection is controlled by a three-phase pretimed traffic signal with a 90-second background cycle length during the weekday AM and weekday PM peak periods. The eastbound and westbound Eagle Rock Avenue approaches consist of one shared left-turn/through lane and one shared through/right-turn lane. The northbound Conforti Avenue and southbound Forest Avenue approaches consist of one shared left-turn/through/right-turn lane.

The **Eagle Rock Avenue/Mann Avenue** intersection is a T-shaped intersection that is stop-controlled along the northbound Mann Avenue approach. The eastbound Eagle Rock Avenue approach consists of one through lane and one shared through/right-turn lane. The westbound Eagle Rock Avenue approach consists of one shared left-turn/through lane and one through lane. The northbound Mann Avenue approach consists of one shared left-turn/right-turn lane.

Traffic Counts

To determine the amount of traffic on the adjacent roadway network, manual turning movement counts (MTMC) were conducted at the study intersections on Wednesday, November 4, 2020 during the weekday AM (7:00 AM - 9:00 AM) and weekday PM (2:00 PM – 6:00 PM) peak periods. A summary of the traffic counts can be found in the appendix to this assessment and the existing volumes are illustrated on Figure 2.

Future Conditions

As indicated above, the proposal is to construct an 85-unit/100-bed assisted living facility on the site. The development is expected to be fully built-out and occupied by 2022. It can be expected that the traffic volumes along the adjacent roadway network will increase as a result of other developments in the area of the site and general area traffic growth. Based on the *Annual Background Growth Table* prepared by the New Jersey Department of Transportation (NJDOT), a 2.00% annual traffic growth is projected along Eagle Rock Avenue and a 1.50% annual traffic growth is projected along Conforti Avenue, Forest Avenue, and Mann Avenue. By applying a 2.00% and 1.50% annual growth rate to the respective 2020 roadway volumes, the 2022 No-Build volumes were estimated and are indicated on Figure 3.



Trip Generation

The amount of traffic to be generated by the proposed assisted living development can best be estimated based on data published by the Institute of Transportation Engineers (ITE). ITE has compiled data from thousands of studies for various land uses, independent variables and study periods, and published the results in *Trip Generation, 10th Edition*. The proposed development is most similar to ITE Land Use 254: Assisted Living. It should be noted that the trip generation is based upon the number of beds in the facility, which is anticipated to be approximately 100-beds.

Table 1 below indicates the total traffic to be generated by the development based on the ITE trip generation data (the trip generation worksheets are attached for reference). It should be noted that the former Atrium Country Club facility would have generated significantly more critical peak hour and daily traffic than the proposed assisted living residence. As a result, the area roadway network experienced more traffic intensity with the former use as compared to the proposed use.

Table 1						
ITE Trip Generation – Assisted Living						
Land Use	Weekday AM Peak			Weekday PM Peak		
	In	Out	Total	In	Out	Total
Assisted Living (100 beds)	12	7	19	10	16	26

The traffic to be generated by the proposed development during the peak hours must then be distributed to the adjacent street network in a manner which the employees and residents can reasonably be expected to travel. The site traffic was assigned to the street network based on the existing distribution of traffic along the adjacent street network, as illustrated on Figure 4. The resulting site traffic assignment is illustrated on Figure 5. The site traffic was then added to the 2022 No-Build traffic volumes (Figure 3) to project the 2022 Build traffic volumes, which are illustrated on Figure 6.

Operational Analysis

In order to measure the quality of the traffic flow for the adjacent roadway, capacity analysis for the study locations were performed based upon the methods outlined in the *Highway Capacity Manual*. Capacity analysis is a procedure used to estimate the ability of the roadway network to carry traffic. Capacity analyses are performed based on a Level of Service methodology. Level of Service (LOS) is a qualitative measure that characterizes the operational conditions of a roadway or intersection based on the perceptions by motorists and passengers. Levels of Service are defined for each type of facility (i.e. freeways, highways, signalized intersections, unsignalized intersections). These Levels of Service range from LOS A to LOS F, with a LOS A representing the best operating conditions and a LOS F representing the worst operating conditions.



The Level of Service for an unsignalized intersection is determined based on the average control delay associated with each minor movement (i.e. yielding left-turn movements from the major roads and stop-controlled movements from the minor approaches). The Levels of Service for signalized intersections are classified in terms of delay, which is based on the extent of driver discomfort and frustration, fuel consumption and lost travel time. The delay experienced by a motorist consists of many factors that relate to control, geometrics, and traffic. Some of these factors include the quality of progression, traffic signal cycle length, the green ratio, and the volume-to-capacity ratio. The Level of Service criteria for unsignalized and signalized intersections is summarized in Table 3.

Table 3		
Level of Service Criteria		
Level of Service	Unsignalized Delay (sec)	Signalized Delay (sec)
A	≤ 10	≤ 10
B	> 10 and ≤ 15	> 10 and ≤ 20
C	> 15 and ≤ 25	> 20 and ≤ 35
D	> 25 and ≤ 35	> 35 and ≤ 55
E	> 35 and ≤ 50	> 55 and ≤ 80
F	> 50	> 80

The operating conditions at the study intersections and the proposed site access were evaluated using the above-described methodology and the latest Synchro software. The Existing, No-Build, and Build Levels of Service are illustrated on Figures 7, 8 and 9; respectively. The detailed capacity analyses worksheets for the intersection analyses are attached to this assessment with a description of the operating conditions summarized below.

Eagle Rock Avenue (CR 611) and Conforti Avenue and Forest Avenue Intersection

Under the existing conditions, the Eagle Rock Avenue/Conforti Avenue/Forest Avenue signalized intersection operates with an overall LOS B during the weekday AM and weekday PM peak hours. Both the eastbound Eagle Rock Avenue shared left-turn/through movements and shared through/right-turn movements operate with a LOS B during the weekday AM and weekday PM peak hours. Both the westbound Eagle Rock Avenue shared left-turn/through movements and shared through/right-turn movements operate with a LOS B during the weekday AM and weekday PM peak hours. Both the northbound Conforti Avenue shared left-turn/through/right-turn movements operate with a LOS C during the weekday AM and weekday PM peak hours.

Under the future No-Build conditions, the intersection will continue to operate with an overall LOS B during the weekday AM and weekday PM peak hours. All individual movements at the intersection will continue to operate with existing levels of service.

Under future Build conditions, the intersection will continue to operate with an overall LOS B during the weekday AM and weekday PM peak hours. All individual movements at the intersection will continue to operate with existing levels of service. It should be noted that under the Build conditions, the traffic generated by the proposed site accounts for approximately 1.78% of the total volume at the intersection during the weekday AM peak hour and approximately 1.61% of the total volume at the intersection during the weekday PM peak hour.



Eagle Rock Avenue and Mann Avenue and Site Driveway Intersection

Under the existing conditions, the westbound Eagle Rock Avenue left-turn movements operate with a LOS A during the weekday AM and weekday PM peak hours. The northbound Mann Avenue shared left-turn/right-turn movements operate with a LOS B during the weekday AM and weekday PM peak hours.

Under the No-Build conditions, all individual movements at the intersection will continue to operate with existing levels of service with the exception of the northbound Mann Avenue shared left-turn/right-turn movements which will operate with a LOS C during the weekday PM peak hour.

Under the Build conditions, access to the future assisted living facility residence will be provided via one (1) new full-movement driveway along westbound Eagle Rock Avenue creating a fourth leg to the existing Eagle Rock Avenue/Mann Avenue intersection. This driveway will be stop-controlled at its intersection with Eagle Rock Avenue and consist of single inbound and outbound lanes providing for all permitted movements. The eastbound Eagle Rock Avenue left-turn movements will operate with a LOS A during the weekday AM and weekday PM peak hours. The southbound Site Driveway shared left-turn/right-turn movements will operate with a LOS B during the weekday AM and weekday PM peak hours. All other movements at the intersection will continue to operate with No-Build levels of service. Final review and approval for this driveway is required from Essex County.

Conclusion

The traffic generated by the proposed assisted living facility development will have an insignificant impact on the adjacent street network based upon the following results from this traffic engineering assessment:

- Based upon the current ITE trip generation rates, the proposed assisted living facility development will generate approximately 19 total trips during the weekday AM peak hour and approximately 26 total trips during the weekday PM peak hour.
- The traffic resulting from the proposed assisted living facility development will cause no changes to the individual levels of service at the Eagle Rock Avenue/Conforti Avenue/Forest Avenue signalized intersection. The traffic generated from the proposed site will account for approximately 1.78% of the total traffic at the intersection during the weekday AM peak hour and approximately 1.61% of the total traffic at the intersection during the weekday PM peak hour.
- The traffic resulting from the proposed assisted living facility development will cause no changes in the future levels of service at the Eagle Rock Avenue/Mann Avenue study location during the weekday AM and weekday PM peak hours.



Should you have any questions or require any additional information, please feel free to contact us.

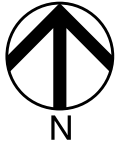
Sincerely,
Shropshire Associates LLC

A handwritten signature in black ink, appearing to read 'David R. Shropshire', is written over a horizontal line.

David R. Shropshire, P.E., P.P.
Professional Engineer
N.J. License No. 33943

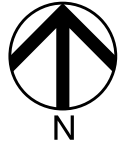
DRS/jab
Attachments

cc:	Joseph Zadlo	(via email: jazarch@aol.com)
	Dave Ennis	(via email: dave.ennis@cshpe.com)
	Jim May	(via email: jim.may@cshpe.com)
	Dan King	(via email: dking@meyerdesigninc.com)
	Bob Podvey	(via email: rpodvey@connellfoley.com)
	Daniel Sehnal	(via email: dsehnal@dynamicec.com)
	Ed Snieckus, Jr.	(via email: es@burgis.com)



CSH – West Orange

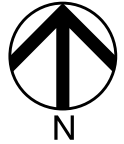
West Orange Township, Essex County, New Jersey
January 2021



CSH – West Orange

West Orange Township, Essex County, New Jersey
January 2021

 TRAFFIC SIGNAL
AM/PM PEAK HOUR

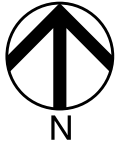


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January 2021

 TRAFFIC SIGNAL
AM/PM PEAK HOUR

FIGURE 4
TRIP DISTRIBUTION

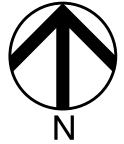


CSH - West Orange

West Orange Township, Essex County, New Jersey
January 2021

 TRAFFIC SIGNAL
AM/PM PEAK HOUR

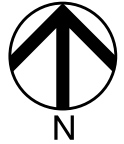
FIGURE 5
SITE TRAFFIC



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January 2021

 TRAFFIC SIGNAL
AM/PM PEAK HOUR

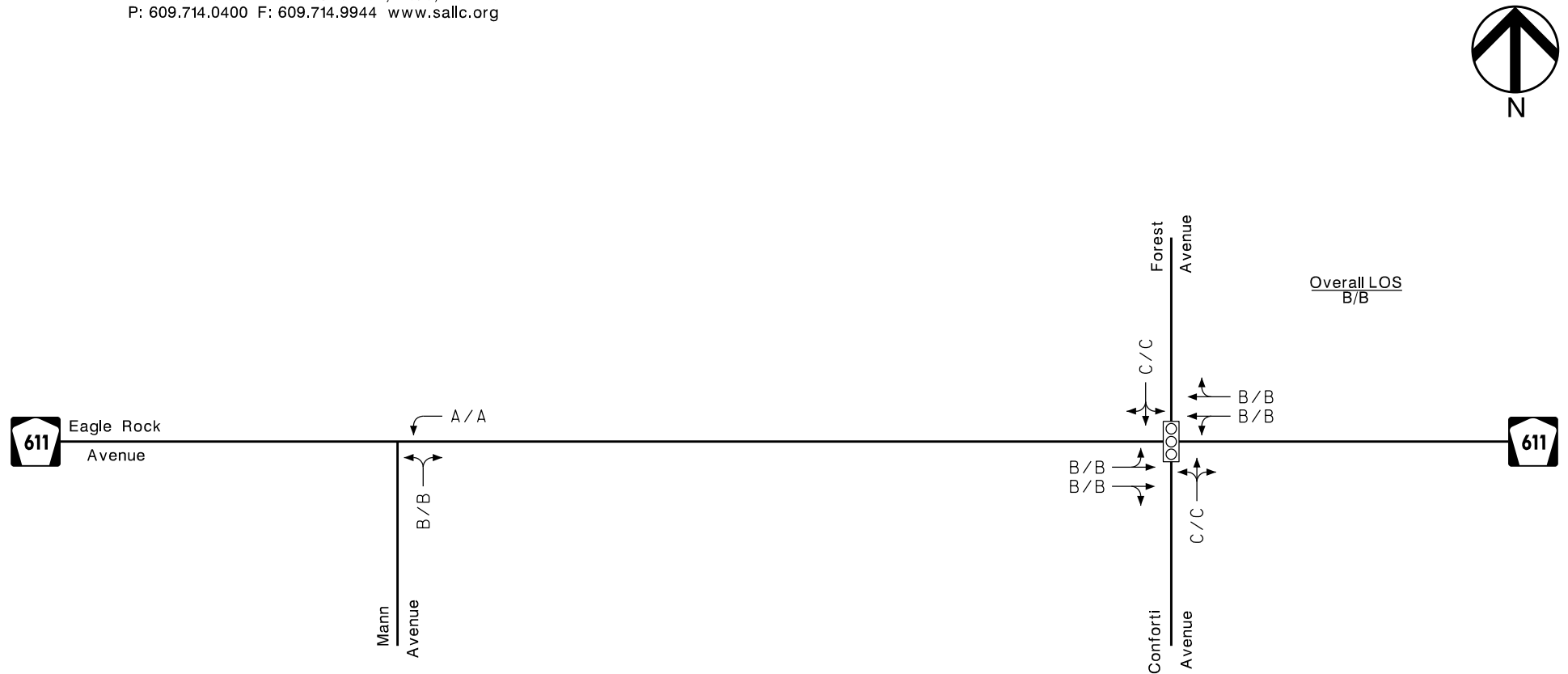


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West Orange Township, Essex County, New Jersey
January 2021

TRAFFIC SIGNAL
AM/PM PEAK HOUR

FIGURE 7
EXISTING LEVELS OF SERVICE

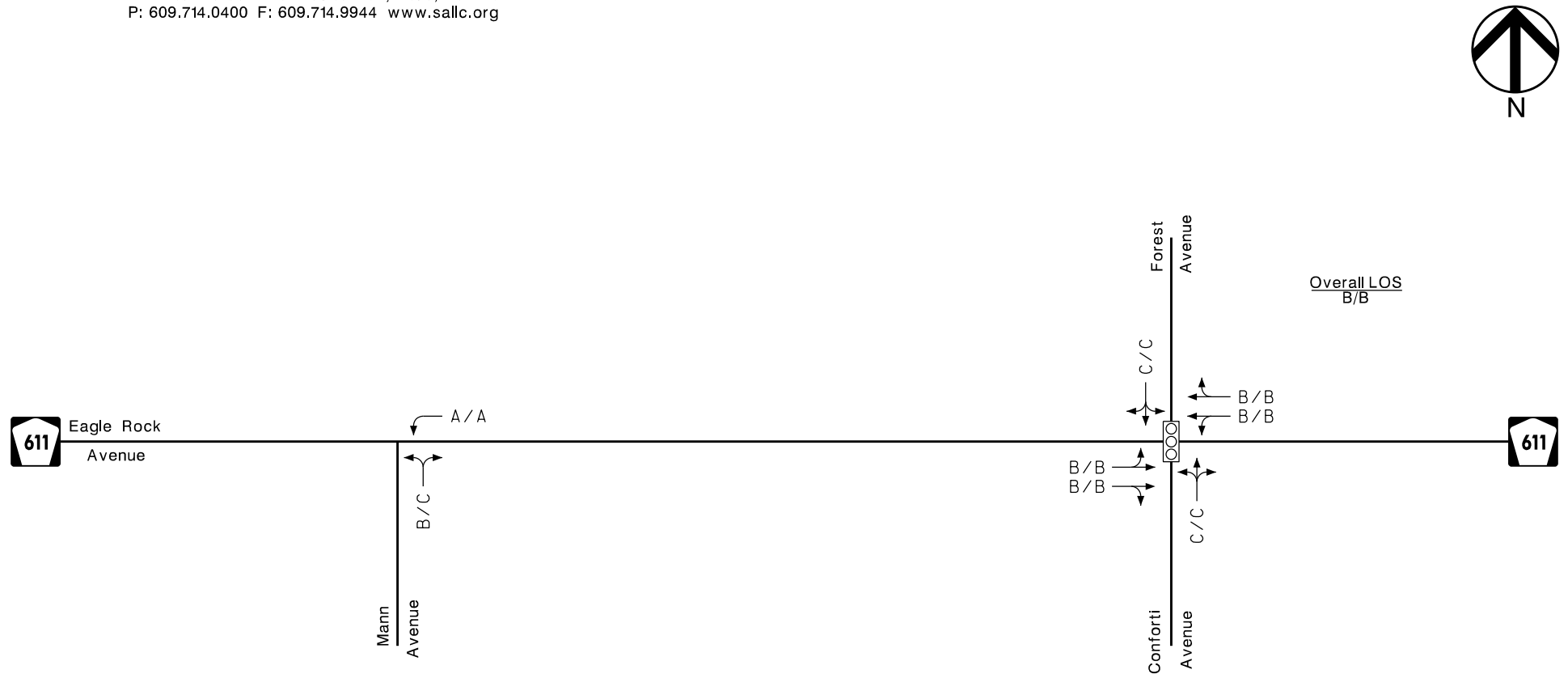


CSH – West Orange

West Orange Township, Essex County, New Jersey
January 2021

 TRAFFIC SIGNAL
AM/PM PEAK HOUR

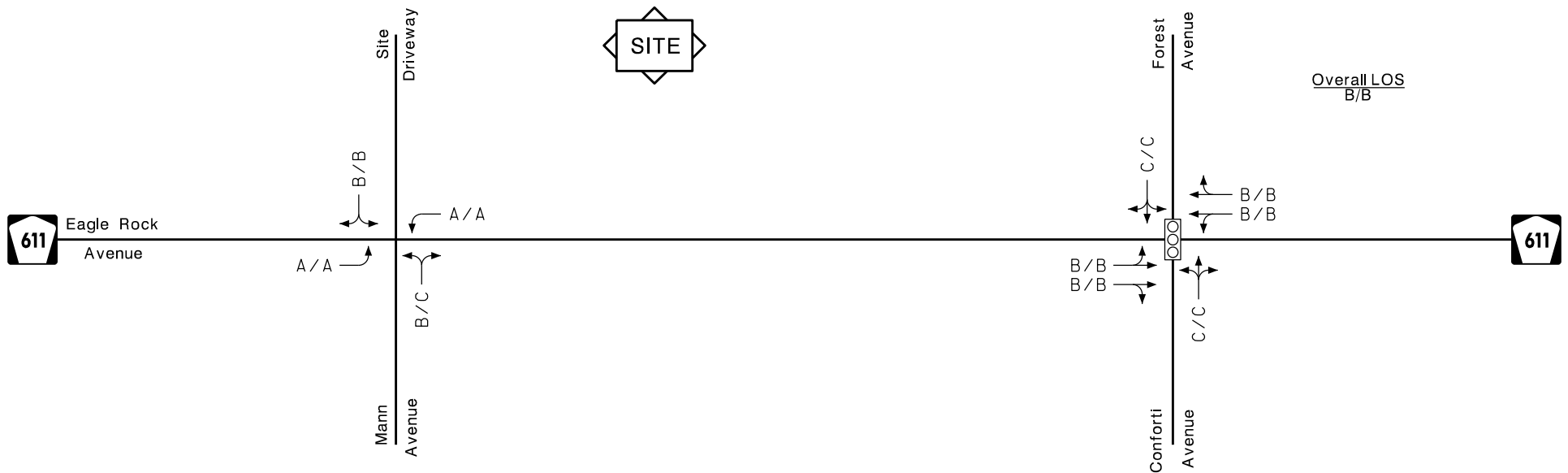
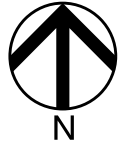
FIGURE 8
NO-BUILD LEVELS OF SERVICE



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West Orange Township, Essex County, New Jersey
January 2021

TRAFFIC SIGNAL
AM/PM PEAK HOUR



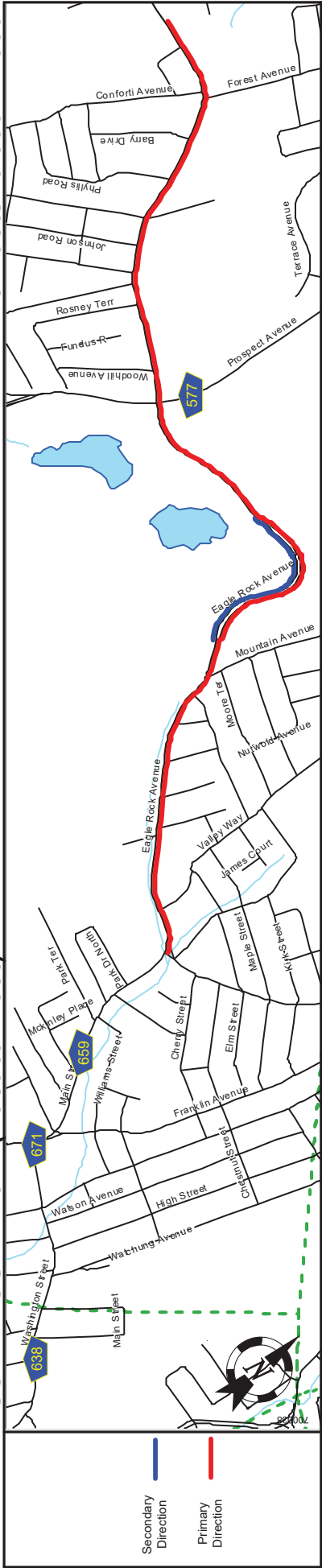
CSH – West Orange

West Orange Township, Essex County, New Jersey
January 2021

 TRAFFIC SIGNAL
AM/PM PEAK HOUR

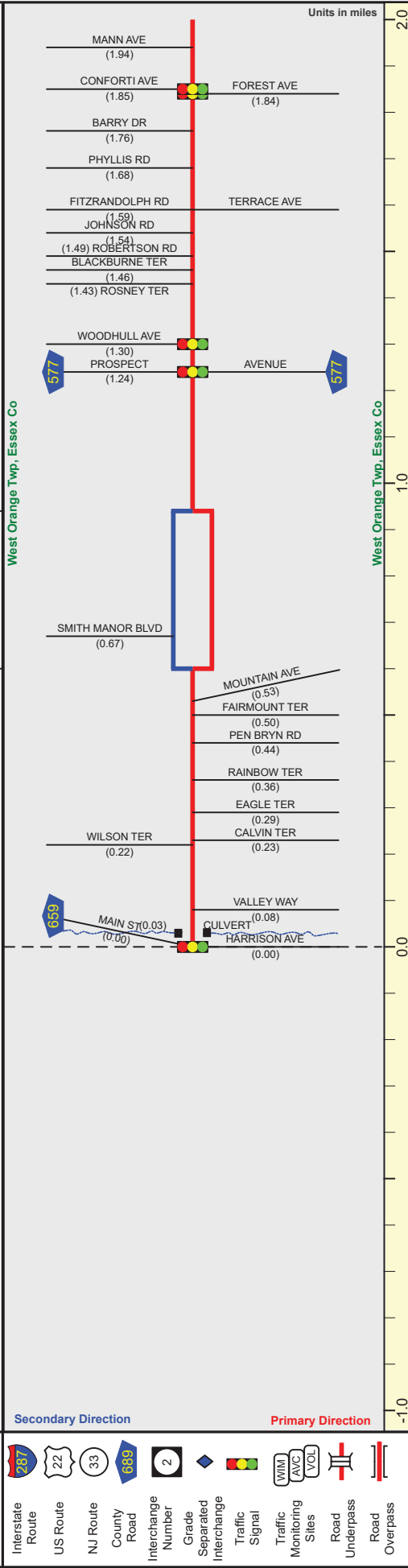
Mile Posts: 0.000 - 2.000

ESSEX COUNTY 611 (East to West)



Pavement	20
Shoulder	0
Number of Lanes	2
Speed Limit	35
Street Name	Eagle Rock Avenue

West Orange Twp, Essex Co



Street Name	Eagle Rock Avenue
Jurisdiction	County
Functional Class	Urban Minor Arterial
Federal Aid - NHS Sy	STP
Control Section	
Speed Limit	35
Number of Lanes	2
Med. Type	Positive
Med. Width	2
Pavement	20
Shoulder	0
Traffic Volume	
Traffic Sta. ID	
Structure No.	
Enlarged Views	

Date last inventoried: April 2011

SRI = 07000611

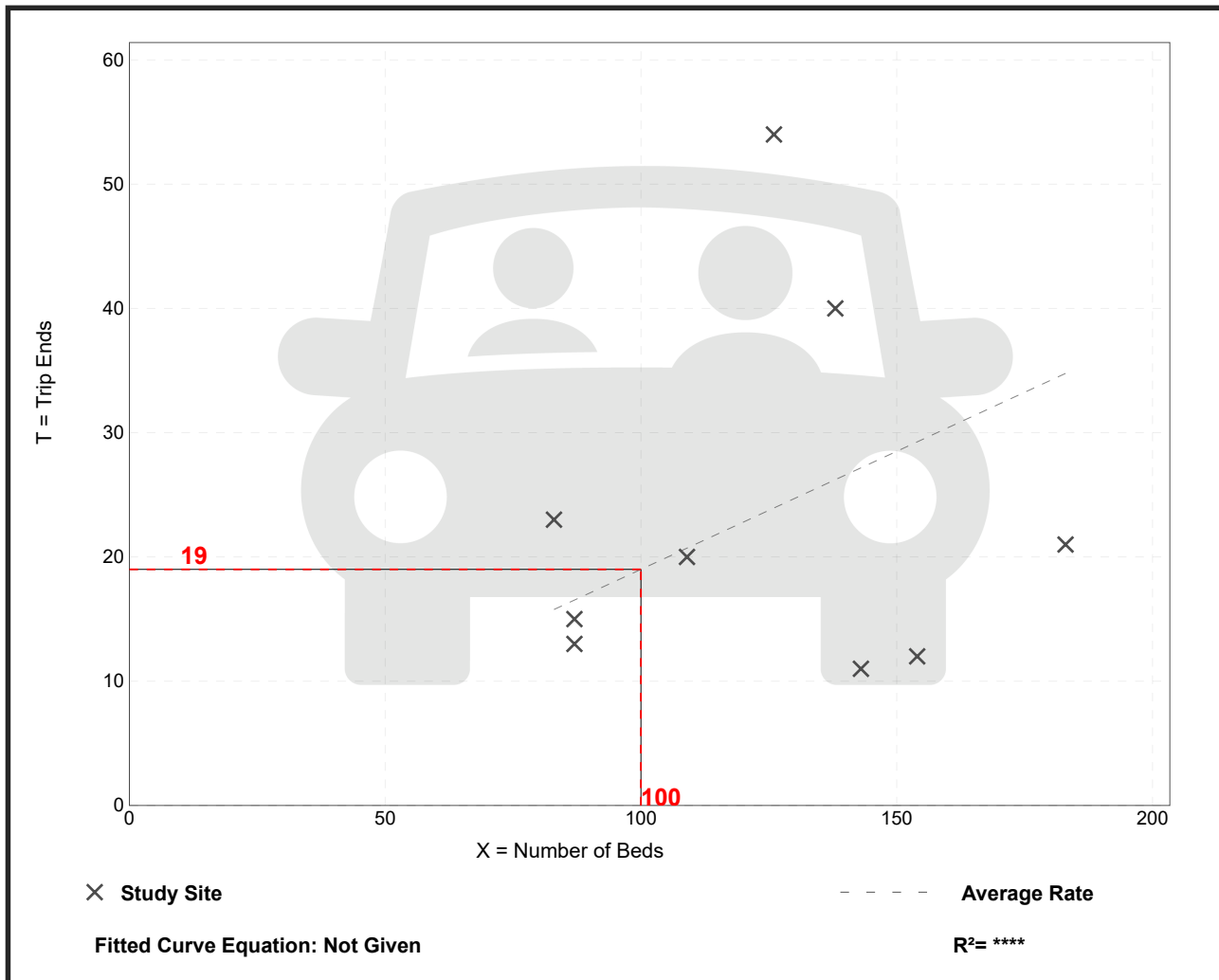
Assisted Living (254)

Vehicle Trip Ends vs: Beds
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: General Urban/Suburban
 Number of Studies: 9
 Avg. Num. of Beds: 123
 Directional Distribution: 63% entering, 37% exiting

Vehicle Trip Generation per Bed

Average Rate	Range of Rates	Standard Deviation
0.19	0.08 - 0.43	0.12

Data Plot and Equation



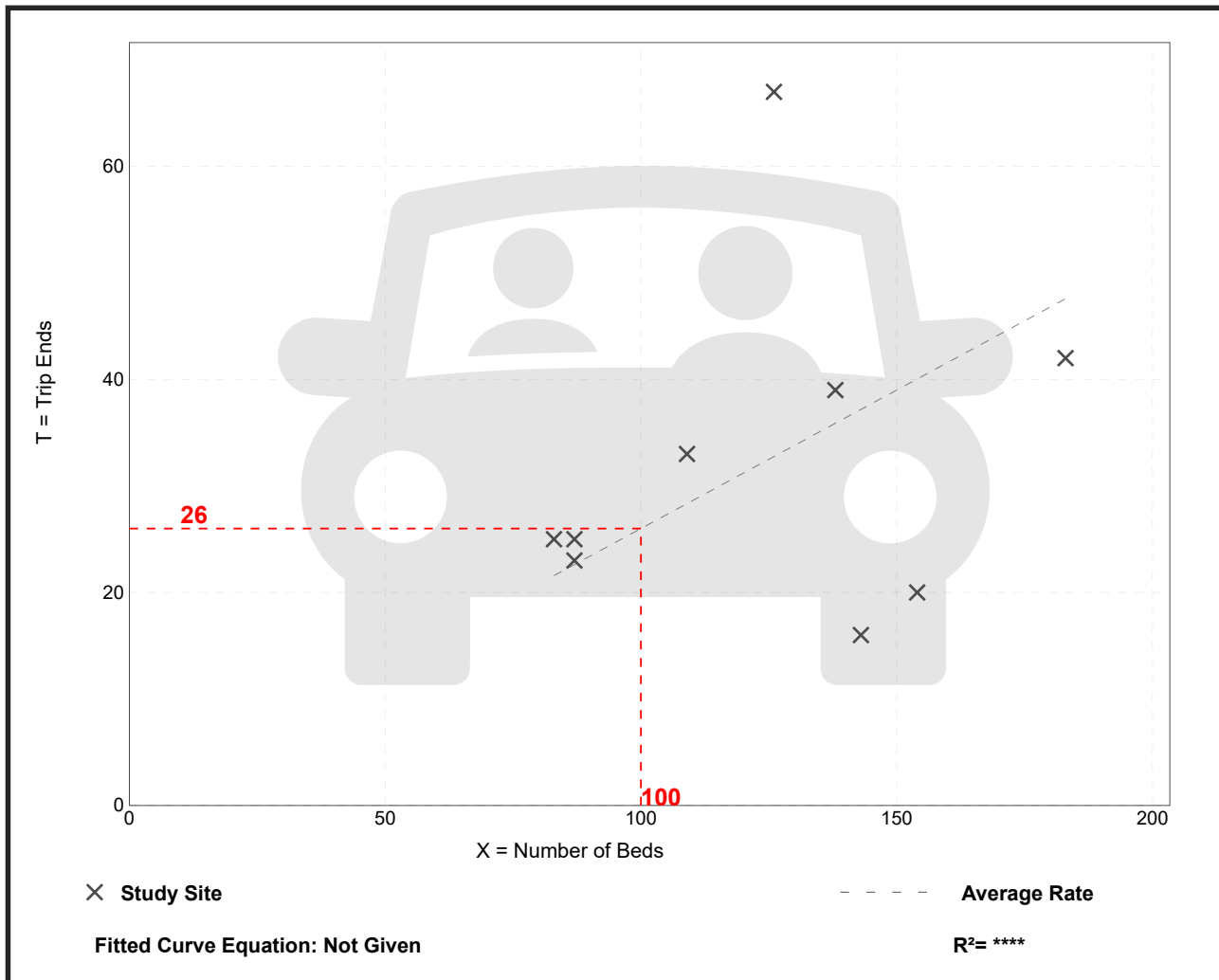
Assisted Living (254)

Vehicle Trip Ends vs: Beds
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: General Urban/Suburban
 Number of Studies: 9
 Avg. Num. of Beds: 123
 Directional Distribution: 38% entering, 62% exiting

Vehicle Trip Generation per Bed

Average Rate	Range of Rates	Standard Deviation
0.26	0.11 - 0.53	0.13

Data Plot and Equation



Shropshire Associates LLC

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N/S Route: Forest Ave./Conforti Ave.
E/W Route: Eagle Rock Ave.
West Orange Twp/Essex County/NJ
Wed/Clear/BP/D4-2584

File Name : 20178001
Site Code : 20178001
Start Date : 11/4/2020
Page No : 1

Groups Printed- Unshifted

	Forest Ave. Southbound				Eagle Rock Ave. Westbound				Conforti Ave. Northbound				Eagle Rock Ave. Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
07:00 AM	6	0	3	9	4	20	1	25	1	2	1	4	2	29	1	32	70
07:15 AM	4	2	4	10	1	33	3	37	4	3	4	11	1	21	1	23	81
07:30 AM	9	0	4	13	6	43	0	49	4	2	0	6	1	34	2	37	105
07:45 AM	7	0	4	11	3	60	1	64	4	3	0	7	1	68	5	74	156
Total	26	2	15	43	14	156	5	175	13	10	5	28	5	152	9	166	412
08:00 AM	10	3	1	14	3	53	3	59	2	2	2	6	2	54	6	62	141
08:15 AM	9	3	11	23	6	68	2	76	2	6	0	8	3	44	4	51	158
08:30 AM	5	3	10	18	2	46	2	50	3	6	4	13	1	43	4	48	129
08:45 AM	6	4	6	16	2	60	6	68	3	5	1	9	2	48	3	53	146
Total	30	13	28	71	13	227	13	253	10	19	7	36	8	189	17	214	574
*** BREAK ***																	
02:00 PM	4	0	9	13	3	61	1	65	4	5	3	12	1	80	4	85	175
02:15 PM	4	5	3	12	6	74	2	82	1	1	3	5	0	69	7	76	175
02:30 PM	7	4	1	12	8	62	4	74	9	3	1	13	2	83	6	91	190
02:45 PM	7	4	7	18	5	70	5	80	3	4	2	9	1	66	4	71	178
Total	22	13	20	55	22	267	12	301	17	13	9	39	4	298	21	323	718
03:00 PM	5	3	5	13	2	59	3	64	4	1	4	9	4	85	6	95	181
03:15 PM	3	1	5	9	8	74	3	85	3	3	5	11	3	98	7	108	213
03:30 PM	8	5	6	19	7	63	4	74	5	4	4	13	1	85	20	106	212
03:45 PM	8	1	8	17	2	75	5	82	7	3	5	15	2	95	14	111	225
Total	24	10	24	58	19	271	15	305	19	11	18	48	10	363	47	420	831
04:00 PM	9	4	6	19	13	65	2	80	5	1	3	9	5	99	10	114	222
04:15 PM	8	3	3	14	10	79	2	91	6	3	4	13	2	79	4	85	203
04:30 PM	5	2	10	17	4	66	2	72	3	2	2	7	2	72	9	83	179
04:45 PM	10	3	8	21	9	58	3	70	4	4	4	12	4	88	10	102	205
Total	32	12	27	71	36	268	9	313	18	10	13	41	13	338	33	384	809
05:00 PM	7	5	9	21	5	61	7	73	2	6	2	10	4	112	6	122	226
05:15 PM	11	5	7	23	10	73	2	85	2	2	8	12	4	102	14	120	240
05:30 PM	2	5	9	16	9	65	6	80	8	2	4	14	4	90	6	100	210
05:45 PM	4	6	5	15	3	72	4	79	6	5	4	15	4	78	5	87	196
Total	24	21	30	75	27	271	19	317	18	15	18	51	16	382	31	429	872
Grand Total	158	71	144	373	131	1460	73	1664	95	78	70	243	56	1722	158	1936	4216
Apprch %	42.4	19	38.6		7.9	87.7	4.4		39.1	32.1	28.8		2.9	88.9	8.2		
Total %	3.7	1.7	3.4	8.8	3.1	34.6	1.7	39.5	2.3	1.9	1.7	5.8	1.3	40.8	3.7	45.9	

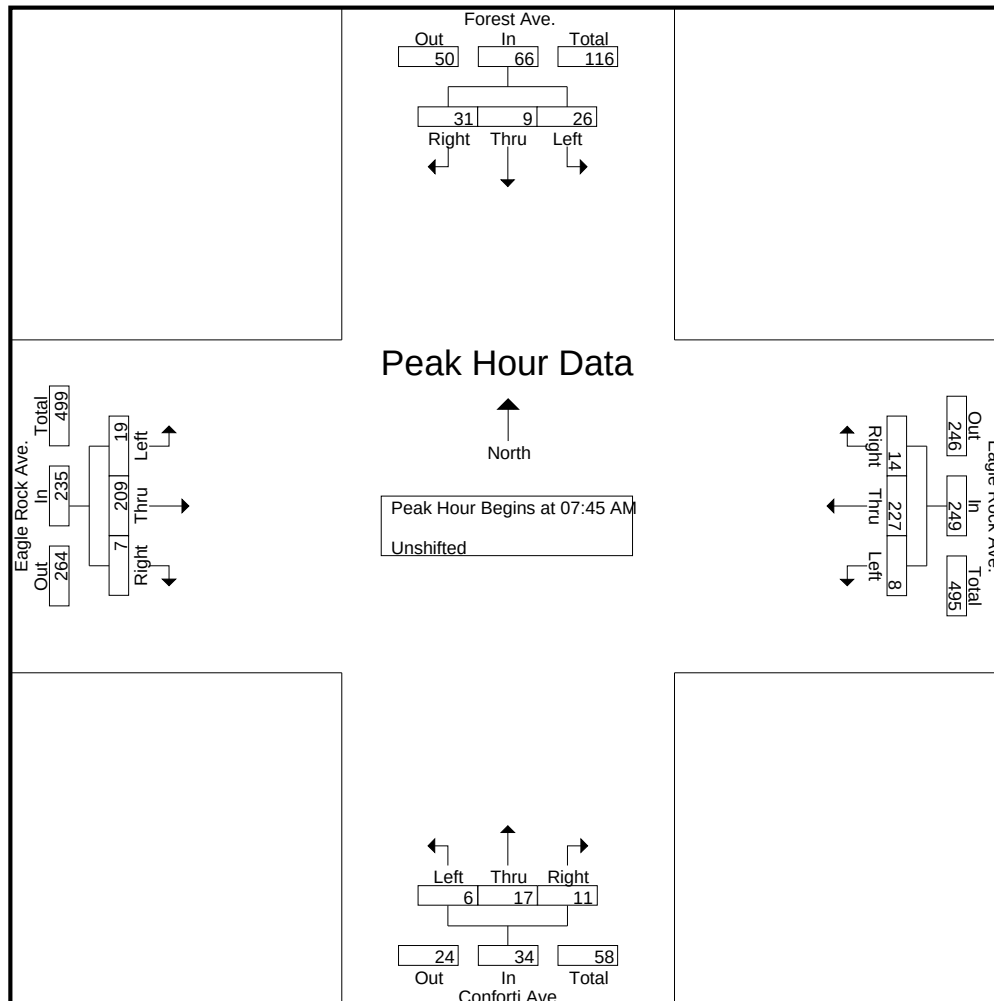
Shropshire Associates LLC

277 Whitehorse Pike, Suite 203
Atco, NJ 08004

N/S Route: Forest Ave./Conforti Ave.
E/W Route: Eagle Rock Ave.
West Orange Twp/Essex County/NJ
Wed/Clear/BP/D4-2584

File Name : 20178001
Site Code : 20178001
Start Date : 11/4/2020
Page No : 2

	Forest Ave. Southbound				Eagle Rock Ave. Westbound				Conforti Ave. Northbound				Eagle Rock Ave. Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	7	0	4	11	3	60	1	64	4	3	0	7	1	68	5	74	156
08:00 AM	10	3	1	14	3	53	3	59	2	2	2	6	2	54	6	62	141
08:15 AM	9	3	11	23	6	68	2	76	2	6	0	8	3	44	4	51	158
08:30 AM	5	3	10	18	2	46	2	50	3	6	4	13	1	43	4	48	129
Total Volume	31	9	26	66	14	227	8	249	11	17	6	34	7	209	19	235	584
% App. Total	47	13.6	39.4		5.6	91.2	3.2		32.4	50	17.6		3	88.9	8.1		
PHF	.775	.750	.591	.717	.583	.835	.667	.819	.688	.708	.375	.654	.583	.768	.792	.794	.924



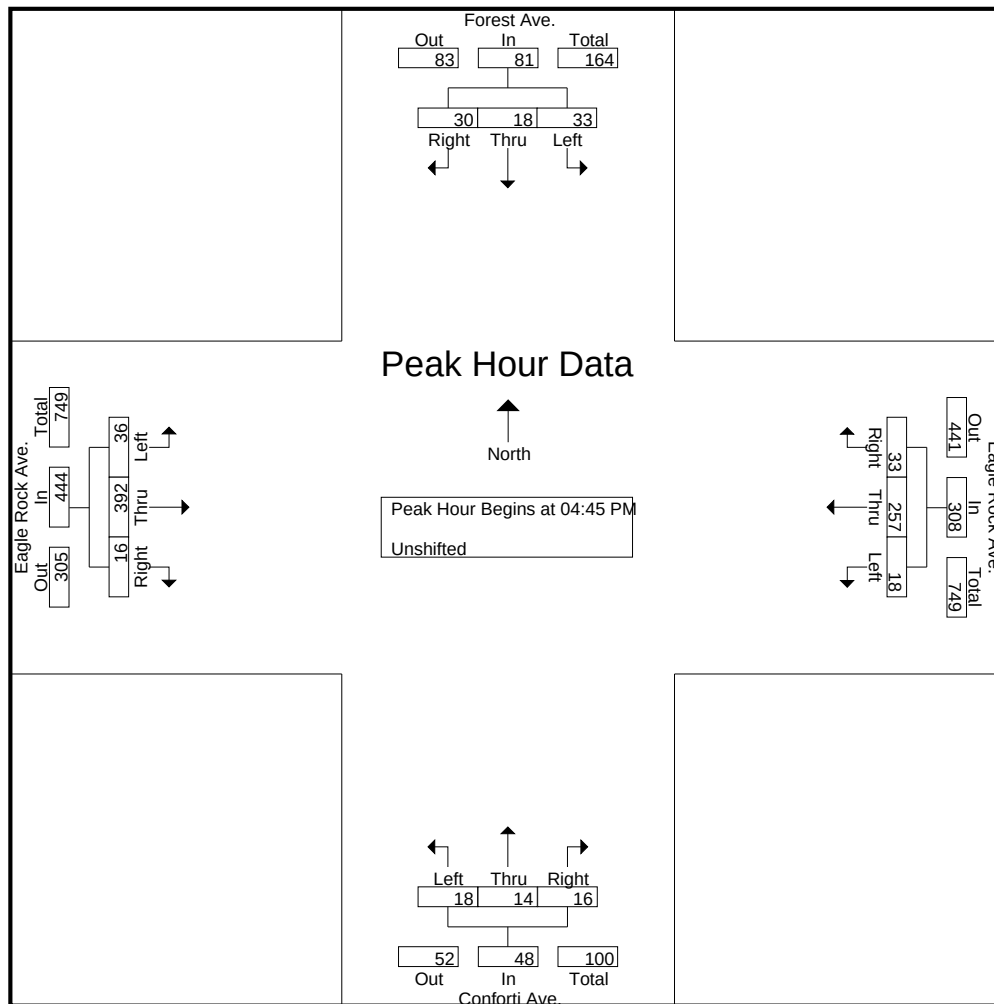
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Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	10	3	8	21	9	58	3	70	4	4	4	12	4	88	10	102	205
05:00 PM	7	5	9	21	5	61	7	73	2	6	2	10	4	112	6	122	226
05:15 PM	11	5	7	23	10	73	2	85	2	2	8	12	4	102	14	120	240
05:30 PM	2	5	9	16	9	65	6	80	8	2	4	14	4	90	6	100	210
Total Volume	30	18	33	81	33	257	18	308	16	14	18	48	16	392	36	444	881
% App. Total	37	22.2	40.7		10.7	83.4	5.8		33.3	29.2	37.5		3.6	88.3	8.1		
PHF	.682	.900	.917	.880	.825	.880	.643	.906	.500	.583	.563	.857	1.00	.875	.643	.910	.918



Shropshire Associates LLC

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N/S Route: Mann Ave.
E/W Route: Eagle Rock Ave.
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Page No : 1

Groups Printed- Unshifted

Start Time	Eagle Rock Ave Westbound			Mann Ave Northbound			Eagle Rck Ave Eastbound			Int. Total
	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	
07:00 AM	27	0	27	0	1	1	1	30	31	59
07:15 AM	39	0	39	0	4	4	1	23	24	67
07:30 AM	47	0	47	2	3	5	3	38	41	93
07:45 AM	63	1	64	0	3	3	6	72	78	145
Total	176	1	177	2	11	13	11	163	174	364
08:00 AM	49	1	50	1	1	2	3	53	56	108
08:15 AM	81	1	82	0	1	1	6	47	53	136
08:30 AM	54	0	54	0	3	3	0	48	48	105
08:45 AM	68	0	68	0	3	3	8	49	57	128
Total	252	2	254	1	8	9	17	197	214	477
*** BREAK ***										
02:00 PM	73	0	73	0	5	5	12	84	96	174
02:15 PM	75	0	75	1	4	5	4	80	84	164
02:30 PM	77	0	77	0	4	4	5	96	101	182
02:45 PM	77	1	78	0	5	5	5	71	76	159
Total	302	1	303	1	18	19	26	331	357	679
03:00 PM	67	1	68	2	1	3	5	95	100	171
03:15 PM	86	0	86	0	4	4	6	111	117	207
03:30 PM	77	0	77	1	3	4	7	103	110	191
03:45 PM	91	0	91	0	3	3	3	106	109	203
Total	321	1	322	3	11	14	21	415	436	772
04:00 PM	63	0	63	2	0	2	9	101	110	175
04:15 PM	82	1	83	0	3	3	7	81	88	174
04:30 PM	68	1	69	0	2	2	1	75	76	147
04:45 PM	81	0	81	2	7	9	4	94	98	188
Total	294	2	296	4	12	16	21	351	372	684
05:00 PM	64	0	64	1	5	6	9	119	128	198
05:15 PM	96	0	96	1	3	4	5	120	125	225
05:30 PM	74	0	74	0	3	3	9	104	113	190
05:45 PM	84	0	84	0	2	2	2	100	102	188
Total	318	0	318	2	13	15	25	443	468	801
Grand Total	1663	7	1670	13	73	86	121	1900	2021	3777
Apprch %	99.6	0.4		15.1	84.9		6	94		
Total %	44	0.2	44.2	0.3	1.9	2.3	3.2	50.3	53.5	

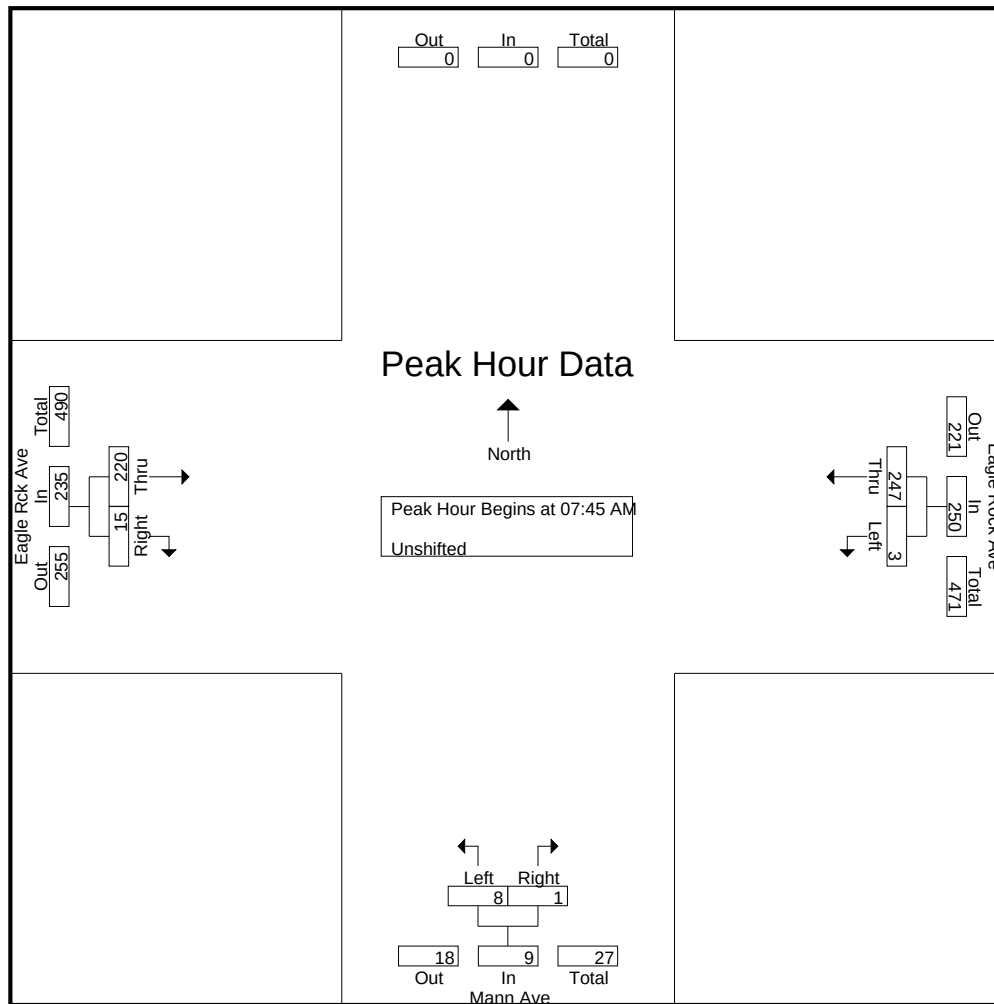
Shropshire Associates LLC

277 Whitehorse Pike, Suite 203
Atco, NJ 08004

N/S Route: Mann Ave.
E/W Route: Eagle Rock Ave.
West Orange Twp/Essex County/NJ
Wed/Clear/SP/D4-3142

File Name : 20178002
Site Code : 20178002
Start Date : 11/4/2020
Page No : 2

	Eagle Rock Ave Westbound			Mann Ave Northbound			Eagle Rck Ave Eastbound			
Start Time	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:45 AM										
07:45 AM	63	1	64	0	3	3	6	72	78	145
08:00 AM	49	1	50	1	1	2	3	53	56	108
08:15 AM	81	1	82	0	1	1	6	47	53	136
08:30 AM	54	0	54	0	3	3	0	48	48	105
Total Volume	247	3	250	1	8	9	15	220	235	494
% App. Total	98.8	1.2		11.1	88.9		6.4	93.6		
PHF	.762	.750	.762	.250	.667	.750	.625	.764	.753	.852



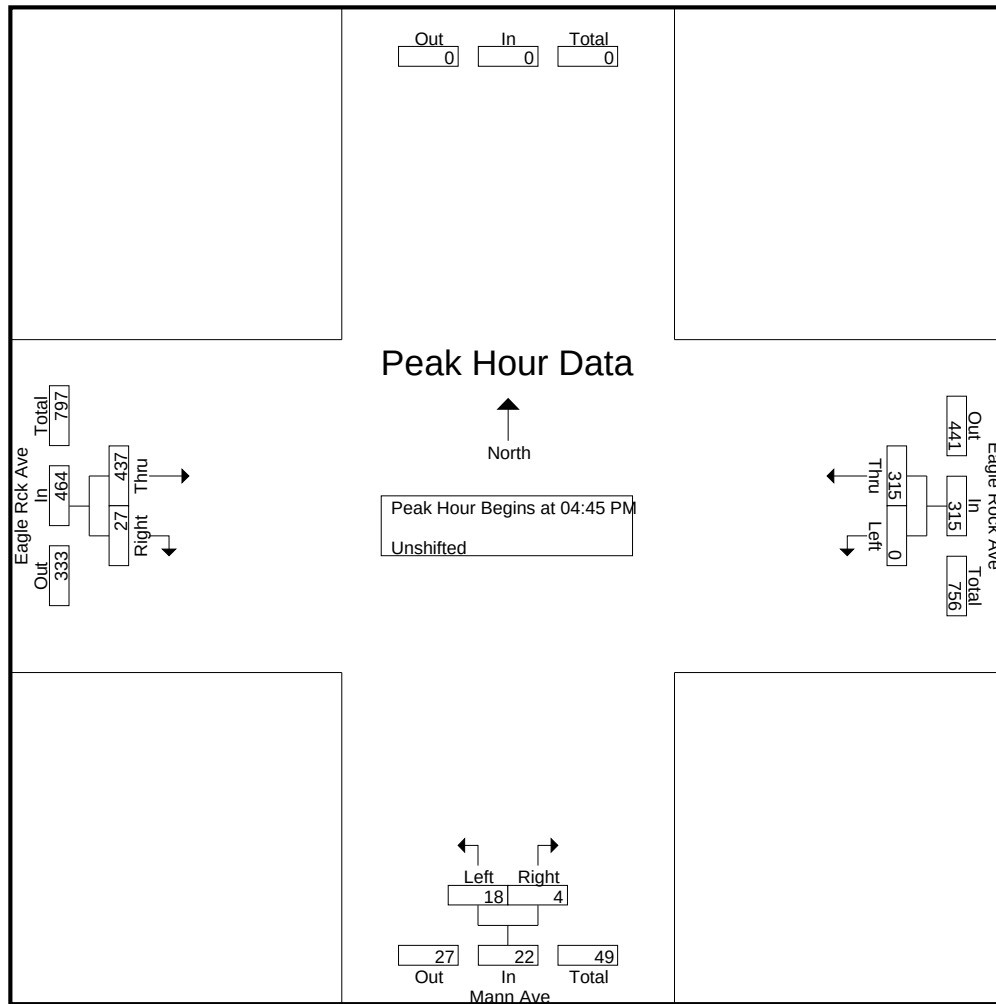
Shropshire Associates LLC

277 Whitehorse Pike, Suite 203
Atco, NJ 08004

N/S Route: Mann Ave.
E/W Route: Eagle Rock Ave.
West Orange Twp/Essex County/NJ
Wed/Clear/SP/D4-3142

File Name : 20178002
Site Code : 20178002
Start Date : 11/4/2020
Page No : 3

	Eagle Rock Ave Westbound			Mann Ave Northbound			Eagle Rck Ave Eastbound			
Start Time	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:45 PM										
04:45 PM	81	0	81	2	7	9	4	94	98	188
05:00 PM	64	0	64	1	5	6	9	119	128	198
05:15 PM	96	0	96	1	3	4	5	120	125	225
05:30 PM	74	0	74	0	3	3	9	104	113	190
Total Volume	315	0	315	4	18	22	27	437	464	801
% App. Total	100	0		18.2	81.8		5.8	94.2		
PHF	.820	.000	.820	.500	.643	.611	.750	.910	.906	.890



201808

[illegible]

Lanes, Volumes, Timings
3: Mann Avenue & Eagle Rock Avenue

Existing AM
01/27/2021

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↘↗	
Traffic Volume (vph)	220	15	3	247	8	1
Future Volume (vph)	220	15	3	247	8	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Frt	0.988				0.966	
Flt Protected				0.999	0.964	
Satd. Flow (prot)	3497	0	0	3536	1735	0
Flt Permitted				0.999	0.964	
Satd. Flow (perm)	3497	0	0	3536	1735	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	173			580	322	
Travel Time (s)	3.9			13.2	7.3	
Peak Hour Factor	0.76	0.63	0.75	0.76	0.67	0.25
Adj. Flow (vph)	289	24	4	325	12	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	313	0	0	329	16	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	18.9%			ICU Level of Service A		
Analysis Period (min)	15					

HCM 6th TWSC
3: Mann Avenue & Eagle Rock Avenue

Existing AM
01/27/2021

Intersection						
Int Delay, s/veh	0.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑	
Traffic Vol, veh/h	220	15	3	247	8	1
Future Vol, veh/h	220	15	3	247	8	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	76	63	75	76	67	25
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	289	24	4	325	12	4

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	313	0	472	157
Stage 1	-	-	-	-	301	-
Stage 2	-	-	-	-	171	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	1244	-	521	861
Stage 1	-	-	-	-	725	-
Stage 2	-	-	-	-	842	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1244	-	519	861
Mov Cap-2 Maneuver	-	-	-	-	519	-
Stage 1	-	-	-	-	725	-
Stage 2	-	-	-	-	839	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	11.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	576	-	-	1244	-
HCM Lane V/C Ratio	0.028	-	-	0.003	-
HCM Control Delay (s)	11.4	-	-	7.9	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Lanes, Volumes, Timings
5: Conforti Avenue/Forest Avenue & Eagle Rock Avenue

Existing AM
01/27/2021

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	209	7	8	227	14	6	17	11	26	9	31
Future Volume (vph)	19	209	7	8	227	14	6	17	11	26	9	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994			0.988			0.961			0.944	
Flt Protected		0.996			0.998			0.986			0.978	
Satd. Flow (prot)	0	3504	0	0	3490	0	0	1765	0	0	1720	0
Flt Permitted		0.914			0.939			0.986			0.826	
Satd. Flow (perm)	0	3215	0	0	3283	0	0	1765	0	0	1452	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			14			16			34	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		580			445			444			466	
Travel Time (s)		13.2			10.1			10.1			10.6	
Peak Hour Factor	0.79	0.77	0.58	0.67	0.83	0.58	0.38	0.71	0.69	0.59	0.75	0.78
Adj. Flow (vph)	24	271	12	12	273	24	16	24	16	44	12	40
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	307	0	0	309	0	0	56	0	0	96	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)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Split	NA		Perm	NA	
Protected Phases		4			8		2	2			6	
Permitted Phases	4			8						6		
Minimum Split (s)	40.0	40.0		40.0	40.0		13.0	13.0		13.0	13.0	
Total Split (s)	50.0	50.0		50.0	50.0		19.0	19.0		19.0	19.0	
Total Split (%)	56.8%	56.8%		56.8%	56.8%		21.6%	21.6%		21.6%	21.6%	
Maximum Green (s)	44.0	44.0		44.0	44.0		13.0	13.0		13.0	13.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		44.0			44.0			13.0			13.0	
Actuated g/C Ratio		0.50			0.50			0.15			0.15	
v/c Ratio		0.19			0.19			0.20			0.40	
Control Delay		12.3			11.9			27.5			28.3	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		12.3			11.9			27.5			28.3	
LOS		B			B			C			C	
Approach Delay		12.3			11.9			27.5			28.3	
Approach LOS		B			B			C			C	

Lanes, Volumes, Timings

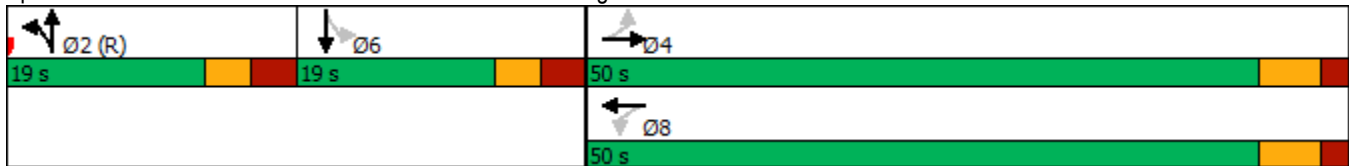
5: Conforti Avenue/Forest Avenue & Eagle Rock Avenue

Existing AM
01/27/2021

Intersection Summary

Area Type: Other
 Cycle Length: 88
 Actuated Cycle Length: 88
 Offset: 0 (0%), Referenced to phase 2:NBTL, Start of Green
 Natural Cycle: 70
 Control Type: Pretimed
 Maximum v/c Ratio: 0.40
 Intersection Signal Delay: 15.2
 Intersection LOS: B
 Intersection Capacity Utilization 45.8%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 5: Conforti Avenue/Forest Avenue & Eagle Rock Avenue



Lanes, Volumes, Timings
3: Mann Avenue & Eagle Rock Avenue

Existing PM
01/27/2021

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	437	27	0	315	18	4
Future Volume (vph)	437	27	0	315	18	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Frt	0.990				0.970	
Flt Protected					0.963	
Satd. Flow (prot)	3504	0	0	3539	1740	0
Flt Permitted					0.963	
Satd. Flow (perm)	3504	0	0	3539	1740	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	173			580	322	
Travel Time (s)	3.9			13.2	7.3	
Peak Hour Factor	0.91	0.75	0.92	0.82	0.64	0.50
Adj. Flow (vph)	480	36	0	384	28	8
Shared Lane Traffic (%)						
Lane Group Flow (vph)	516	0	0	384	36	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	22.9%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	0.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑	
Traffic Vol, veh/h	437	27	0	315	18	4
Future Vol, veh/h	437	27	0	315	18	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	75	92	82	64	50
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	480	36	0	384	28	8
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	516	0	690	258
Stage 1	-	-	-	-	498	-
Stage 2	-	-	-	-	192	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	1046	-	379	741
Stage 1	-	-	-	-	576	-
Stage 2	-	-	-	-	822	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1046	-	379	741
Mov Cap-2 Maneuver	-	-	-	-	379	-
Stage 1	-	-	-	-	576	-
Stage 2	-	-	-	-	822	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		14.3	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	425	-	-	1046	-	
HCM Lane V/C Ratio	0.085	-	-	-	-	
HCM Control Delay (s)	14.3	-	-	0	-	
HCM Lane LOS	B	-	-	A	-	
HCM 95th %tile Q(veh)	0.3	-	-	0	-	

Lanes, Volumes, Timings
5: Conforti Avenue/Forest Avenue & Eagle Rock Avenue

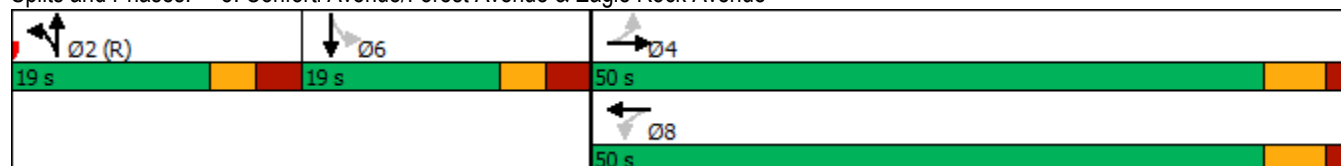
Existing PM
01/27/2021

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔			↔↔			↔			↔	
Traffic Volume (vph)	36	392	16	18	257	33	18	14	16	33	18	30
Future Volume (vph)	36	392	16	18	257	33	18	14	16	33	18	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995			0.983			0.951			0.941	
Flt Protected		0.995			0.996			0.982			0.982	
Satd. Flow (prot)	0	3504	0	0	3465	0	0	1740	0	0	1721	0
Flt Permitted		0.868			0.891			0.982			0.845	
Satd. Flow (perm)	0	3057	0	0	3100	0	0	1740	0	0	1481	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			22			27			38	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		580			445			444			466	
Travel Time (s)		13.2			10.1			10.1			10.6	
Peak Hour Factor	0.64	0.88	0.92	0.64	0.88	0.83	0.56	0.58	0.50	0.92	0.90	0.68
Adj. Flow (vph)	56	445	17	28	292	40	32	24	32	36	20	44
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	518	0	0	360	0	0	88	0	0	100	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)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Split	NA		Perm	NA	
Protected Phases		4			8		2	2			6	
Permitted Phases	4			8						6		
Minimum Split (s)	40.0	40.0		40.0	40.0		13.0	13.0		13.0	13.0	
Total Split (s)	50.0	50.0		50.0	50.0		19.0	19.0		19.0	19.0	
Total Split (%)	56.8%	56.8%		56.8%	56.8%		21.6%	21.6%		21.6%	21.6%	
Maximum Green (s)	44.0	44.0		44.0	44.0		13.0	13.0		13.0	13.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		44.0			44.0			13.0			13.0	
Actuated g/C Ratio		0.50			0.50			0.15			0.15	
v/c Ratio		0.34			0.23			0.31			0.40	
Control Delay		13.9			12.1			27.7			27.4	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		13.9			12.1			27.7			27.4	
LOS		B			B			C			C	
Approach Delay		13.9			12.1			27.7			27.4	
Approach LOS		B			B			C			C	

Intersection Summary

Area Type: Other
Cycle Length: 88
Actuated Cycle Length: 88
Offset: 0 (0%), Referenced to phase 2:NBTL, Start of Green
Natural Cycle: 70
Control Type: Pretimed
Maximum v/c Ratio: 0.40
Intersection Signal Delay: 15.7 Intersection LOS: B
Intersection Capacity Utilization 55.3% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 5: Conforti Avenue/Forest Avenue & Eagle Rock Avenue



Lanes, Volumes, Timings
3: Mann Avenue & Eagle Rock Avenue

No-Build AM
01/27/2021

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	229	16	3	257	8	1
Future Volume (vph)	229	16	3	257	8	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Frt	0.988				0.966	
Flt Protected				0.999	0.964	
Satd. Flow (prot)	3497	0	0	3536	1735	0
Flt Permitted				0.999	0.964	
Satd. Flow (perm)	3497	0	0	3536	1735	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	173			580	322	
Travel Time (s)	3.9			13.2	7.3	
Peak Hour Factor	0.76	0.63	0.75	0.76	0.67	0.25
Adj. Flow (vph)	301	25	4	338	12	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	326	0	0	342	16	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	19.2%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	0.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑	
Traffic Vol, veh/h	229	16	3	257	8	1
Future Vol, veh/h	229	16	3	257	8	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	76	63	75	76	67	25
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	301	25	4	338	12	4

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	326	0	491	163
Stage 1	-	-	-	-	314	-
Stage 2	-	-	-	-	177	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	1230	-	507	853
Stage 1	-	-	-	-	714	-
Stage 2	-	-	-	-	836	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1230	-	505	853
Mov Cap-2 Maneuver	-	-	-	-	505	-
Stage 1	-	-	-	-	714	-
Stage 2	-	-	-	-	833	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	11.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	563	-	-	1230	-
HCM Lane V/C Ratio	0.028	-	-	0.003	-
HCM Control Delay (s)	11.6	-	-	7.9	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Lanes, Volumes, Timings
5: Conforti Avenue/Forest Avenue & Eagle Rock Avenue

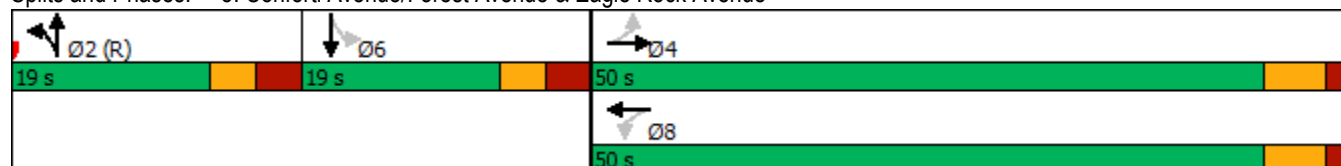
No-Build AM
01/27/2021

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	217	7	8	236	15	6	18	11	27	9	32
Future Volume (vph)	20	217	7	8	236	15	6	18	11	27	9	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994			0.988			0.962			0.944	
Flt Protected		0.996			0.998			0.986			0.977	
Satd. Flow (prot)	0	3504	0	0	3490	0	0	1767	0	0	1718	0
Flt Permitted		0.912			0.939			0.986			0.823	
Satd. Flow (perm)	0	3208	0	0	3283	0	0	1767	0	0	1447	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6			15			16			34	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		580			445			444			466	
Travel Time (s)		13.2			10.1			10.1			10.6	
Peak Hour Factor	0.79	0.77	0.58	0.67	0.83	0.58	0.38	0.71	0.69	0.59	0.75	0.78
Adj. Flow (vph)	25	282	12	12	284	26	16	25	16	46	12	41
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	319	0	0	322	0	0	57	0	0	99	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)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Split	NA		Perm	NA	
Protected Phases		4			8		2	2			6	
Permitted Phases	4			8						6		
Minimum Split (s)	40.0	40.0		40.0	40.0		13.0	13.0		13.0	13.0	
Total Split (s)	50.0	50.0		50.0	50.0		19.0	19.0		19.0	19.0	
Total Split (%)	56.8%	56.8%		56.8%	56.8%		21.6%	21.6%		21.6%	21.6%	
Maximum Green (s)	44.0	44.0		44.0	44.0		13.0	13.0		13.0	13.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		44.0			44.0			13.0			13.0	
Actuated g/C Ratio		0.50			0.50			0.15			0.15	
v/c Ratio		0.20			0.20			0.21			0.41	
Control Delay		12.4			12.0			27.7			28.9	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		12.4			12.0			27.7			28.9	
LOS		B			B			C			C	
Approach Delay		12.4			12.0			27.7			28.9	
Approach LOS		B			B			C			C	

Intersection Summary

Area Type: Other
 Cycle Length: 88
 Actuated Cycle Length: 88
 Offset: 0 (0%), Referenced to phase 2:NBTL, Start of Green
 Natural Cycle: 70
 Control Type: Pretimed
 Maximum v/c Ratio: 0.41
 Intersection Signal Delay: 15.4 Intersection LOS: B
 Intersection Capacity Utilization 46.2% ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 5: Conforti Avenue/Forest Avenue & Eagle Rock Avenue



Lanes, Volumes, Timings
3: Mann Avenue & Eagle Rock Avenue

No-Build PM
01/27/2021

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	455	28	0	328	25	4
Future Volume (vph)	455	28	0	328	25	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Frt	0.990				0.977	
Flt Protected					0.960	
Satd. Flow (prot)	3504	0	0	3539	1747	0
Flt Permitted					0.960	
Satd. Flow (perm)	3504	0	0	3539	1747	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	173			580	322	
Travel Time (s)	3.9			13.2	7.3	
Peak Hour Factor	0.91	0.75	0.92	0.82	0.64	0.50
Adj. Flow (vph)	500	37	0	400	39	8
Shared Lane Traffic (%)						
Lane Group Flow (vph)	537	0	0	400	47	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	23.5%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	0.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑	↑	
Traffic Vol, veh/h	455	28	0	328	25	4
Future Vol, veh/h	455	28	0	328	25	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	75	92	82	64	50
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	500	37	0	400	39	8
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	537	0	719	269
Stage 1	-	-	-	-	519	-
Stage 2	-	-	-	-	200	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	1027	-	363	729
Stage 1	-	-	-	-	562	-
Stage 2	-	-	-	-	814	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1027	-	363	729
Mov Cap-2 Maneuver	-	-	-	-	363	-
Stage 1	-	-	-	-	562	-
Stage 2	-	-	-	-	814	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	0		15.3		
HCM LOS	C					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	397	-	-	1027	-	
HCM Lane V/C Ratio	0.119	-	-	-	-	
HCM Control Delay (s)	15.3	-	-	0	-	
HCM Lane LOS	C	-	-	A	-	
HCM 95th %tile Q(veh)	0.4	-	-	0	-	

Lanes, Volumes, Timings
5: Conforti Avenue/Forest Avenue & Eagle Rock Avenue

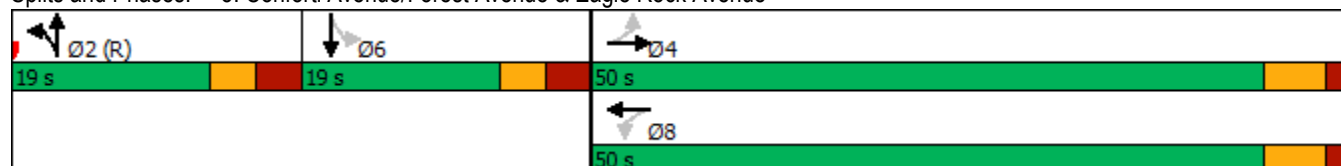
No-Build PM
01/27/2021

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	408	17	19	267	34	19	14	16	34	19	31
Future Volume (vph)	37	408	17	19	267	34	19	14	16	34	19	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995			0.984			0.952			0.940	
Flt Protected		0.995			0.996			0.981			0.983	
Satd. Flow (prot)	0	3504	0	0	3469	0	0	1740	0	0	1721	0
Flt Permitted		0.865			0.885			0.981			0.845	
Satd. Flow (perm)	0	3046	0	0	3082	0	0	1740	0	0	1480	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6			22			26			38	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		580			445			444			466	
Travel Time (s)		13.2			10.1			10.1			10.6	
Peak Hour Factor	0.64	0.88	0.92	0.64	0.88	0.83	0.56	0.58	0.50	0.92	0.90	0.68
Adj. Flow (vph)	58	464	18	30	303	41	34	24	32	37	21	46
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	540	0	0	374	0	0	90	0	0	104	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)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Split	NA		Perm	NA	
Protected Phases		4			8		2	2			6	
Permitted Phases	4			8						6		
Minimum Split (s)	40.0	40.0		40.0	40.0		13.0	13.0		13.0	13.0	
Total Split (s)	50.0	50.0		50.0	50.0		19.0	19.0		19.0	19.0	
Total Split (%)	56.8%	56.8%		56.8%	56.8%		21.6%	21.6%		21.6%	21.6%	
Maximum Green (s)	44.0	44.0		44.0	44.0		13.0	13.0		13.0	13.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		44.0			44.0			13.0			13.0	
Actuated g/C Ratio		0.50			0.50			0.15			0.15	
v/c Ratio		0.35			0.24			0.32			0.41	
Control Delay		14.0			12.2			28.3			28.1	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		14.0			12.2			28.3			28.1	
LOS		B			B			C			C	
Approach Delay		14.0			12.2			28.3			28.1	
Approach LOS		B			B			C			C	

Intersection Summary

Area Type: Other
 Cycle Length: 88
 Actuated Cycle Length: 88
 Offset: 0 (0%), Referenced to phase 2:NBTL, Start of Green
 Natural Cycle: 70
 Control Type: Pretimed
 Maximum v/c Ratio: 0.41
 Intersection Signal Delay: 15.9 Intersection LOS: B
 Intersection Capacity Utilization 56.7% ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 5: Conforti Avenue/Forest Avenue & Eagle Rock Avenue



Lanes, Volumes, Timings
5: Conforti Avenue/Forest Avenue & Eagle Rock Avenue

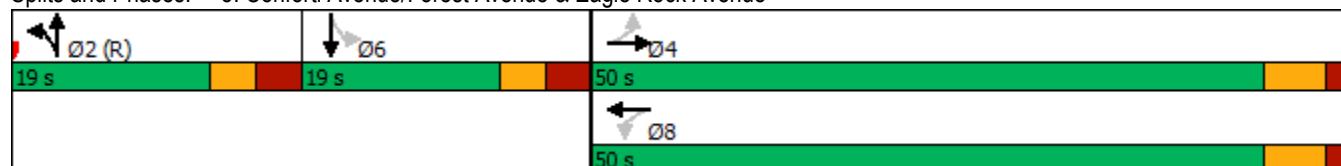
Build AM
01/28/2021

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	220	7	8	241	15	7	18	11	27	9	33
Future Volume (vph)	21	220	7	8	241	15	7	18	11	27	9	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994			0.988			0.963			0.943	
Flt Protected		0.996			0.998			0.985			0.978	
Satd. Flow (prot)	0	3504	0	0	3490	0	0	1767	0	0	1718	0
Flt Permitted		0.907			0.939			0.985			0.824	
Satd. Flow (perm)	0	3191	0	0	3283	0	0	1767	0	0	1447	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6			14			16			35	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		358			445			444			466	
Travel Time (s)		8.1			10.1			10.1			10.6	
Peak Hour Factor	0.79	0.77	0.58	0.67	0.83	0.58	0.38	0.71	0.69	0.59	0.75	0.78
Adj. Flow (vph)	27	286	12	12	290	26	18	25	16	46	12	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	325	0	0	328	0	0	59	0	0	100	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)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Split	NA		Perm	NA	
Protected Phases		4			8		2	2			6	
Permitted Phases	4			8						6		
Minimum Split (s)	40.0	40.0		40.0	40.0		13.0	13.0		13.0	13.0	
Total Split (s)	50.0	50.0		50.0	50.0		19.0	19.0		19.0	19.0	
Total Split (%)	56.8%	56.8%		56.8%	56.8%		21.6%	21.6%		21.6%	21.6%	
Maximum Green (s)	44.0	44.0		44.0	44.0		13.0	13.0		13.0	13.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		44.0			44.0			13.0			13.0	
Actuated g/C Ratio		0.50			0.50			0.15			0.15	
v/c Ratio		0.20			0.20			0.22			0.41	
Control Delay		12.4			12.1			28.1			28.8	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		12.4			12.1			28.1			28.8	
LOS		B			B			C			C	
Approach Delay		12.4			12.1			28.1			28.8	
Approach LOS		B			B			C			C	

Intersection Summary

Area Type: Other
Cycle Length: 88
Actuated Cycle Length: 88
Offset: 0 (0%), Referenced to phase 2:NBTL, Start of Green
Natural Cycle: 70
Control Type: Pretimed
Maximum v/c Ratio: 0.41
Intersection Signal Delay: 15.4 Intersection LOS: B
Intersection Capacity Utilization 45.7% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 5: Conforti Avenue/Forest Avenue & Eagle Rock Avenue



Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕			↕			↕	
Traffic Vol, veh/h	5	229	16	3	257	7	8	0	1	4	0	3
Future Vol, veh/h	5	229	16	3	257	7	8	0	1	4	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	76	63	75	76	92	67	92	25	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	301	25	4	338	8	12	0	4	4	0	3
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	346	0	0	326	0	0	501	678	163	511	686	173
Stage 1	-	-	-	-	-	-	324	324	-	350	350	-
Stage 2	-	-	-	-	-	-	177	354	-	161	336	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1210	-	-	1230	-	-	453	373	853	446	369	840
Stage 1	-	-	-	-	-	-	662	648	-	639	631	-
Stage 2	-	-	-	-	-	-	808	629	-	825	640	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1210	-	-	1230	-	-	448	370	853	441	366	840
Mov Cap-2 Maneuver	-	-	-	-	-	-	448	370	-	441	366	-
Stage 1	-	-	-	-	-	-	659	645	-	636	628	-
Stage 2	-	-	-	-	-	-	802	626	-	817	637	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0.1			12.3			11.6		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	509	1210	-	-	1230	-	-	554				
HCM Lane V/C Ratio	0.031	0.004	-	-	0.003	-	-	0.014				
HCM Control Delay (s)	12.3	8	0	-	7.9	0	-	11.6				
HCM Lane LOS	B	A	A	-	A	A	-	B				
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0				

Lanes, Volumes, Timings
5: Conforti Avenue/Forest Avenue & Eagle Rock Avenue

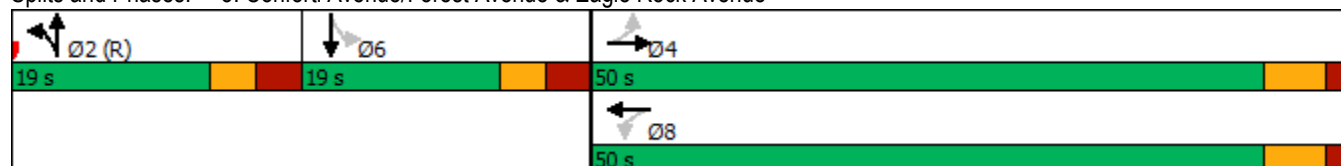
Build PM
01/28/2021

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	416	18	19	270	34	20	14	16	34	19	32
Future Volume (vph)	38	416	18	19	270	34	20	14	16	34	19	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995			0.984			0.953			0.940	
Flt Protected		0.995			0.996			0.981			0.983	
Satd. Flow (prot)	0	3504	0	0	3469	0	0	1741	0	0	1721	0
Flt Permitted		0.864			0.884			0.981			0.846	
Satd. Flow (perm)	0	3043	0	0	3079	0	0	1741	0	0	1481	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6			21			26			39	
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		358			445			444			466	
Travel Time (s)		7.0			8.7			12.1			12.7	
Peak Hour Factor	0.64	0.88	0.92	0.64	0.88	0.83	0.56	0.58	0.50	0.92	0.90	0.68
Adj. Flow (vph)	59	473	20	30	307	41	36	24	32	37	21	47
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	552	0	0	378	0	0	92	0	0	105	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)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Split	NA		Perm	NA	
Protected Phases		4			8		2	2			6	
Permitted Phases	4			8						6		
Minimum Split (s)	40.0	40.0		40.0	40.0		13.0	13.0		13.0	13.0	
Total Split (s)	50.0	50.0		50.0	50.0		19.0	19.0		19.0	19.0	
Total Split (%)	56.8%	56.8%		56.8%	56.8%		21.6%	21.6%		21.6%	21.6%	
Maximum Green (s)	44.0	44.0		44.0	44.0		13.0	13.0		13.0	13.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		44.0			44.0			13.0			13.0	
Actuated g/C Ratio		0.50			0.50			0.15			0.15	
v/c Ratio		0.36			0.24			0.33			0.42	
Control Delay		14.1			12.3			28.5			27.9	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		14.1			12.3			28.5			27.9	
LOS		B			B			C			C	
Approach Delay		14.1			12.3			28.5			27.9	
Approach LOS		B			B			C			C	

Intersection Summary

Area Type: Other
 Cycle Length: 88
 Actuated Cycle Length: 88
 Offset: 0 (0%), Referenced to phase 2:NBTL, Start of Green
 Natural Cycle: 70
 Control Type: Pretimed
 Maximum v/c Ratio: 0.42
 Intersection Signal Delay: 16.0
 Intersection LOS: B
 Intersection Capacity Utilization 57.7%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 5: Conforti Avenue/Forest Avenue & Eagle Rock Avenue



Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕			↕			↕	
Traffic Vol, veh/h	5	455	28	0	328	5	25	0	4	10	0	6
Future Vol, veh/h	5	455	28	0	328	5	25	0	4	10	0	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	91	75	92	82	92	64	92	50	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	500	37	0	400	5	39	0	8	11	0	7
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	405	0	0	537	0	0	729	934	269	663	950	203
Stage 1	-	-	-	-	-	-	529	529	-	403	403	-
Stage 2	-	-	-	-	-	-	200	405	-	260	547	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1150	-	-	1027	-	-	311	264	729	347	259	804
Stage 1	-	-	-	-	-	-	501	525	-	595	598	-
Stage 2	-	-	-	-	-	-	783	597	-	722	516	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1150	-	-	1027	-	-	307	262	729	342	257	804
Mov Cap-2 Maneuver	-	-	-	-	-	-	307	262	-	342	257	-
Stage 1	-	-	-	-	-	-	498	522	-	591	598	-
Stage 2	-	-	-	-	-	-	777	597	-	710	513	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0			17.2			13.6		
HCM LOS							C			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	341	1150	-	-	1027	-	-	436				
HCM Lane V/C Ratio	0.138	0.005	-	-	-	-	-	0.04				
HCM Control Delay (s)	17.2	8.1	0	-	0	-	-	13.6				
HCM Lane LOS	C	A	A	-	A	-	-	B				
HCM 95th %tile Q(veh)	0.5	0	-	-	0	-	-	0.1				