Shropshire Associates LLC

ESBE / SBE Certified

Traffic Engineering, Transportation Planning & Design

277 White Horse Pike, Suite 203, Atco, NJ 08004
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January 15, 2020

Mr. Joseph McElwee (via email: joe.mcelwee@cshpe.com)
Capitol Seniors Housing
1275 Pennsylvania Avenue
NW 2nd Floor
Washington, DC 20004

Re: **Traffic Engineering Assessment**
CSH Assisted Living – Pascack
Washington, Bergen County, NJ
SA Project No. 19130

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. The proposed development is located west of Pascack Road (CR 63) just south of the signalized Pascack Road and Washington Avenue intersection in Washington Township, Bergen County, New Jersey (Figure 1). Access to the development is proposed via one (1) full-movement driveway along southbound Pascack Road. Currently the site is developed and contains the 68,469-square foot (SF) Washington Township Tennis & Fitness Club.

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, **Pascack Road (CR 63)** is a two-lane roadway that is under the jurisdiction of Bergen County and is classified[1] as an Urban Minor Arterial. Pascack Road consists of one lane in each direction and has an approximate cartway width of 35'. The posted speed limit along Pascack Road is 40 MPH. For the purpose of this study, Pascack Road is assumed to extend in a general north-south direction.

In the vicinity of the site, **Washington Avenue (CR 502)** is a two-lane roadway that is under the jurisdiction of Bergen County and clasified[1] as an Urban Principal Arterial. Washington Avenue consists of one lane in each direction and has an approximate cartway width of 36'. The posted speed limit along Washington Avenue is 35 MPH. For the purpose of this study, Washington Avenue is assumed to extend in a general east-west direction.

In the vicinity of the site, **Washington Commons** is a two-lane median divided residential neighborhood driveway. Washington Commons has an approximate cartway width of

[1] NJDOT Straight Line Diagrams

45' and has a posted speed limit of 25 MPH. For the purpose of this study, Washington Commons is assumed to extend in a general east-west direction.

The **Washington Township Tennis & Fitness Club Driveway (WTTFC)** is a two-lane driveway along southbound Pascack Road. The driveway consists of one (1) lane in each direction and has an approximate cartway width of 26'. For the purpose of this study, the WTTFC Driveway is assumed to extend in a general east-west direction.

The **Pascack Road/Washington 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 Washington Avenue approaches consist of one (1) left-turn lane and one (1) through/right-turn lane. The northbound Pascack Road approach consists of one (1) left-turn/through lane and one (1) channelized right-turn lane. The southbound Pascack Road approach consists of one (1) left-turn/through/right-turn lane.

The **Pascack Road/Washington Commons** intersection is a T-shaped intersection that is stop-controlled along the westbound Washington Commons approach. Both the northbound and southbound Pascack Road approaches consist of a single lane for all permitted movements. The westbound Washington Commons approach consists of a single lane for all permitted movements.

The **Pascack Road/WTTFC Driveway** intersection is a T-shaped intersection that is stop-controlled along the eastbound WTTFC Driveway approach. Both the northbound and southbound Pascack Road approaches consist of a single lane for all permitted movements. The eastbound WTTFC Driveway approach consists of a single lane for all permitted movements.

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, September 25, 2019 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 assisted living facility on the site. The development is expected to be fully built-out and occupied by 2021. 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 1.25% annual traffic growth is projected along Washington Avenue, a 1.50% annual traffic growth is projected along Pascack Road, and a 1.00% annual traffic growth is projected along Washington Commons in the vicinity of the site. By applying a 1.25%, 1.50%, and 1.00% annual growth rate to the respective 2019 roadway volumes, the 2021 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).

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. It should be noted that the traffic resulting from the existing WTTFC was removed from the adjacent traffic network and that removal is illustrated on Figure 5A. The site traffic and removed existing site traffic was then added to the 2021 No-Build traffic volumes (Figure 3) to project the 2021 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 HCS 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.

Pascack Road (CR 63) and Washington Avenue (CR 502) Intersection

Under the existing conditions, the Pascack Road and Washington Avenue signalized intersection operates with an overall LOS F during both the weekday AM and weekday PM peak hours. Likewise, the eastbound Washington Avenue left-turn movements currently operate a LOS F during the weekday AM and weekday PM peak hours. The eastbound shared through/right-turn movements operate at a LOS D during both peak hours. The westbound Washington Avenue left-turn movements operate with a LOS F during both PM peak hours, while the westbound shared through/right-turn movements operate at a LOS E during the weekday AM peak hour and a LOS D during the weekday PM peak hour. The southbound Pascack Road shared left-turn/through/right-turn movements operate at a LOS E during the weekday AM peak hour and a LOS F during the weekday PM peak hour. The northbound Pascack Road shared left-turn/through movements operate at a LOS D during both peak hours while the channelized right-turn movements operate at a LOS A during both peak hours.

Under the No-Build conditions, all individual and overall levels of service at the Pascack Road/Washington Avenue signalized intersection will continue to operate at existing levels of service during both peak hours with the exception of the northbound Pascack Road shared left-turn/through movements, which will operate at a LOS E during the weekday AM peak hour.

Under the Build conditions, the traffic resulting from the proposed assisted living facility development will cause no changes in the individual or overall levels of service at the Pascack Road/Washington Avenue signalized intersection during the weekday AM and weekday PM peak hours. The overall delay at this intersection will increase by approximately 1.3 seconds during the AM peak hour and decrease by approximately 0.1 seconds during the PM peak hour. Traffic resulting from the proposed assisted living facility development will account for approximately 0.6% and 0.8% of the total future build scenario volumes at this study location during the AM and PM peak hours, respectively.

Pascack Avenue (CR 63) and Washington Commons/Business Driveway Intersection

Under the existing conditions, all stop-controlled and conflicting left-turn movements at the future Pascack Road/Washington Commons/Business Driveway will operate at a LOS D or better during the weekday AM and weekday PM peak hours.

Under the future No-Build and Build conditions, all individual stop-controlled and conflicting left-turn movements at the Pascack Road/Washington Commons/Business Driveway will continue to operate at existing levels of service during both the weekday AM and weekday PM peak hours. The traffic resulting from the proposed assisted living facility development will cause no changes in the future levels of service at this study location.

Pascack Road (CR 63) and WTTFC Driveway/Site Driveway Intersection

Under the existing conditions, the northbound Pascack Road inbound left-turn movements at the WTTFC driveway currently operate with a LOS A during the weekday AM and weekday PM peak hours, while the outbound stop-controlled WTTFC driveway movements currently function at a LOS C during both peak hours.

Under the No-Build conditions, all individual stop-controlled and conflicting left-turn movements at the Pascack Road/WTTFC driveway intersection will continue to operate at existing levels of service during both peak hours.

Under the Build conditions, access to the future assisted living facility development will be provided via one (1) new full-movement driveway along southbound Pascack Road to replace the existing WTTFC driveway. This driveway will be stop-controlled at its intersection with Pascack Road and consist of single inbound and outbound lanes providing for all permitted movements. Final review and approval for this driveway is required from Bergen County.

Based upon this configuration, the outbound assisted living facility stop-controlled movements will operate at a LOS C during the weekday AM and weekday PM peak hours, while the inbound conflicting left-turn movements from northbound Pascack Road will operate at a LOS A during both peak hours.

Conclusion

Based on the results presented in this traffic engineering assessment, the traffic resulting from the proposed assisted living facility development will have a minimal impact on the adjacent street network based upon the following conclusions:

- 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 in the individual or overall levels of service at the Pascack Road/Washington Avenue signalized intersection during the weekday AM and weekday PM peak hours. The overall delay at this intersection will increase by approximately 1.3 seconds during the AM peak hour and decrease by approximately 0.1 seconds during the PM peak hour. Traffic resulting from the proposed assisted living facility development

will account for approximately 0.6% and 0.8% of the total future build scenario volumes at this study location during the AM and PM peak hours, respectively.

- The traffic resulting from the proposed assisted living facility development will cause no changes in the future levels of service at the Pascack Road/Washington Commons/Business Drive study location during the weekday AM and weekday PM peak hours.

- Access to the future assisted living facility development will be provided via one (1) new full-movement driveway along southbound Pascack Road to replace the existing WTTFC driveway. This driveway will be stop-controlled at its intersection with Pascack Road and consist of single inbound and outbound lanes providing for all permitted movements. Final review and approval for this driveway is required from Bergen County.

  Based upon this configuration, the outbound assisted living facility stop-controlled movements will operate at a LOS C during the weekday AM and weekday PM peak hours, while the inbound conflicting left-turn movements from northbound Pascack Road will operate at a LOS A during both peak hours.

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

Sincerely,
Shropshire Associates LLC

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)
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	Jim May	(via email: jim.may@cshpe.com)
	Dan King	(via email: dking@meyerdesigninc.com)
	Gail Price	(via email: gprice@pricemeese.com)
	Daniel Sehnal	(via email: dsehnal@dynamicec.com)

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FIGURE 1
SITE LOCATION MAP

N

CSH – Pascack

Washington Township, Bergen County, New Jersey
January 2020

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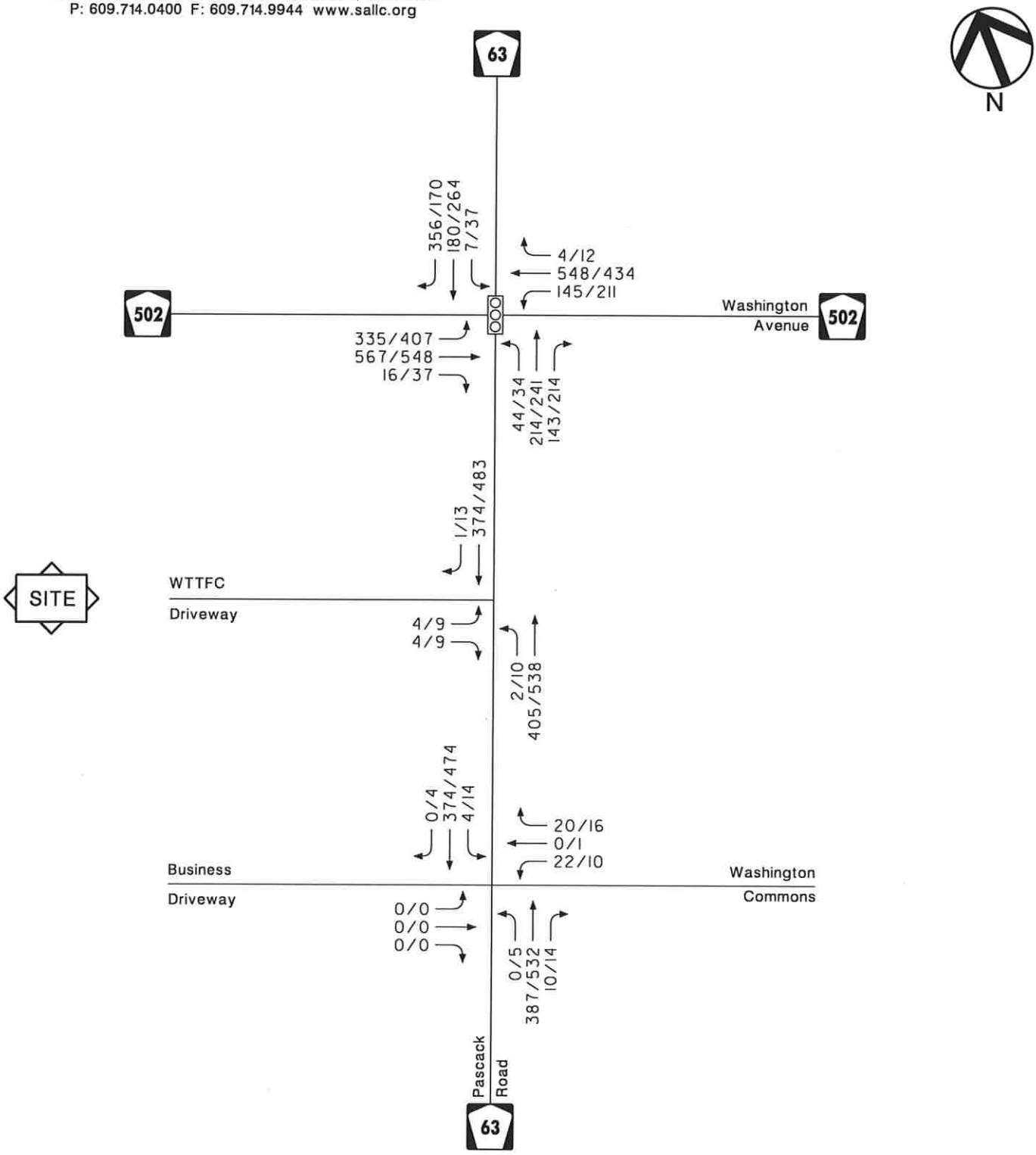
FIGURE 2
EXISTING VOLUMES



CSH – Pascack

Washington Township, Bergen County, New Jersey
January 2020

TRAFFIC SIGNAL
AM/PM PEAK HOUR

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FIGURE 3
NO-BUILD VOLUMES

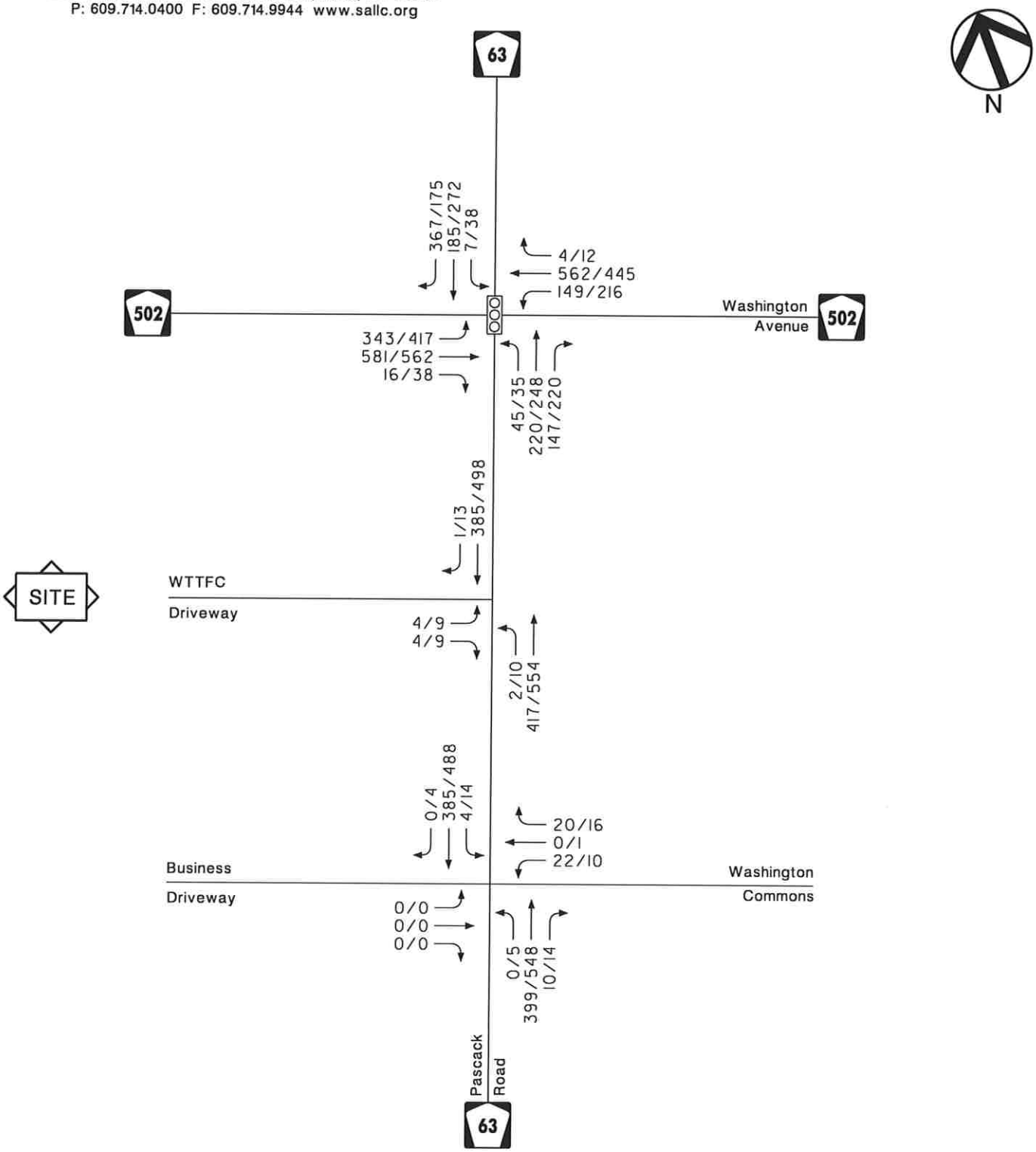

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FIGURE 4
TRIP DISTRIBUTION

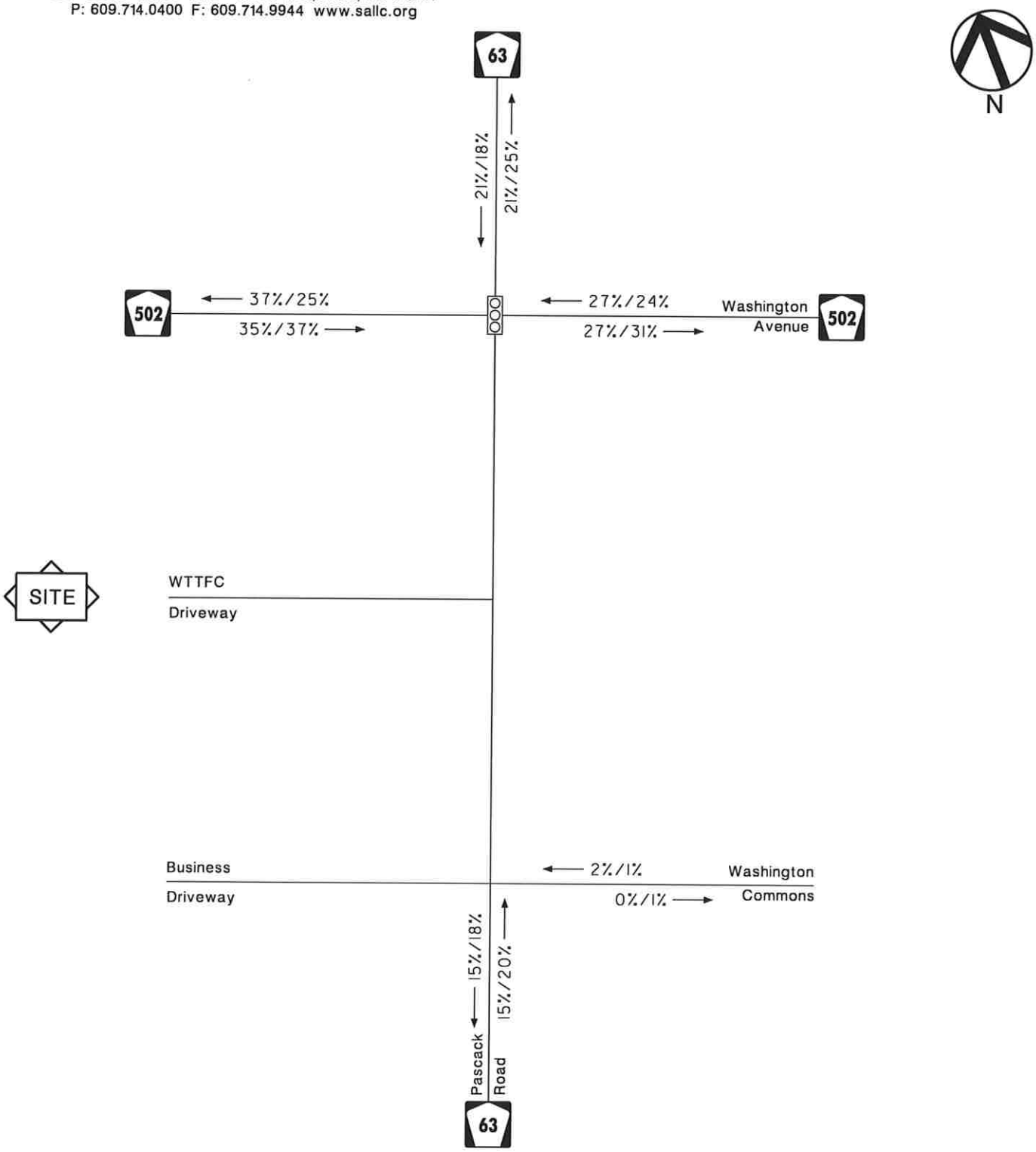

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FIGURE 5
SITE TRAFFIC

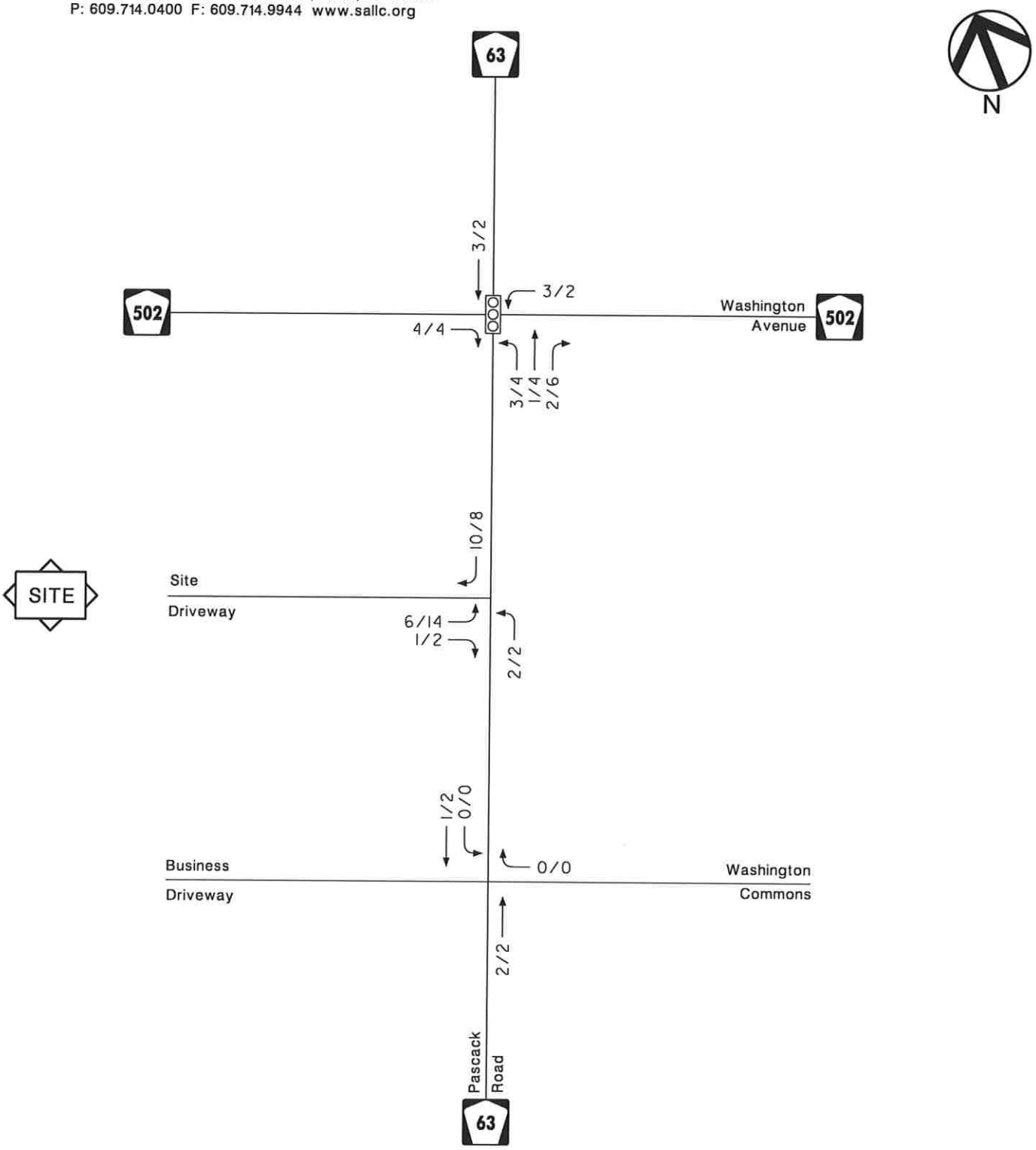

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FIGURE 5A
EXISTING SITE
TRAFFIC REMOVAL

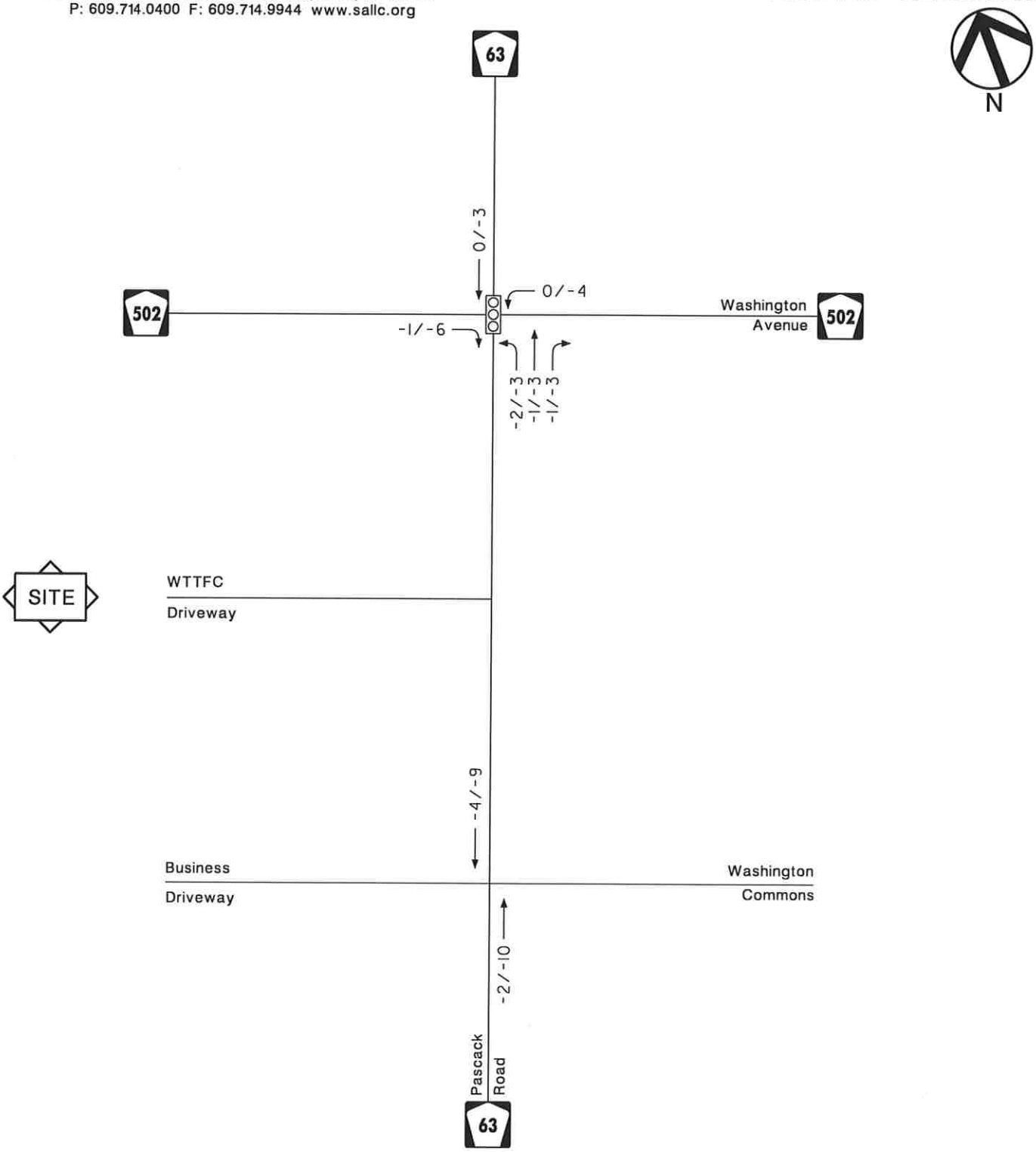

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FIGURE 6
BUILD VOLUMES

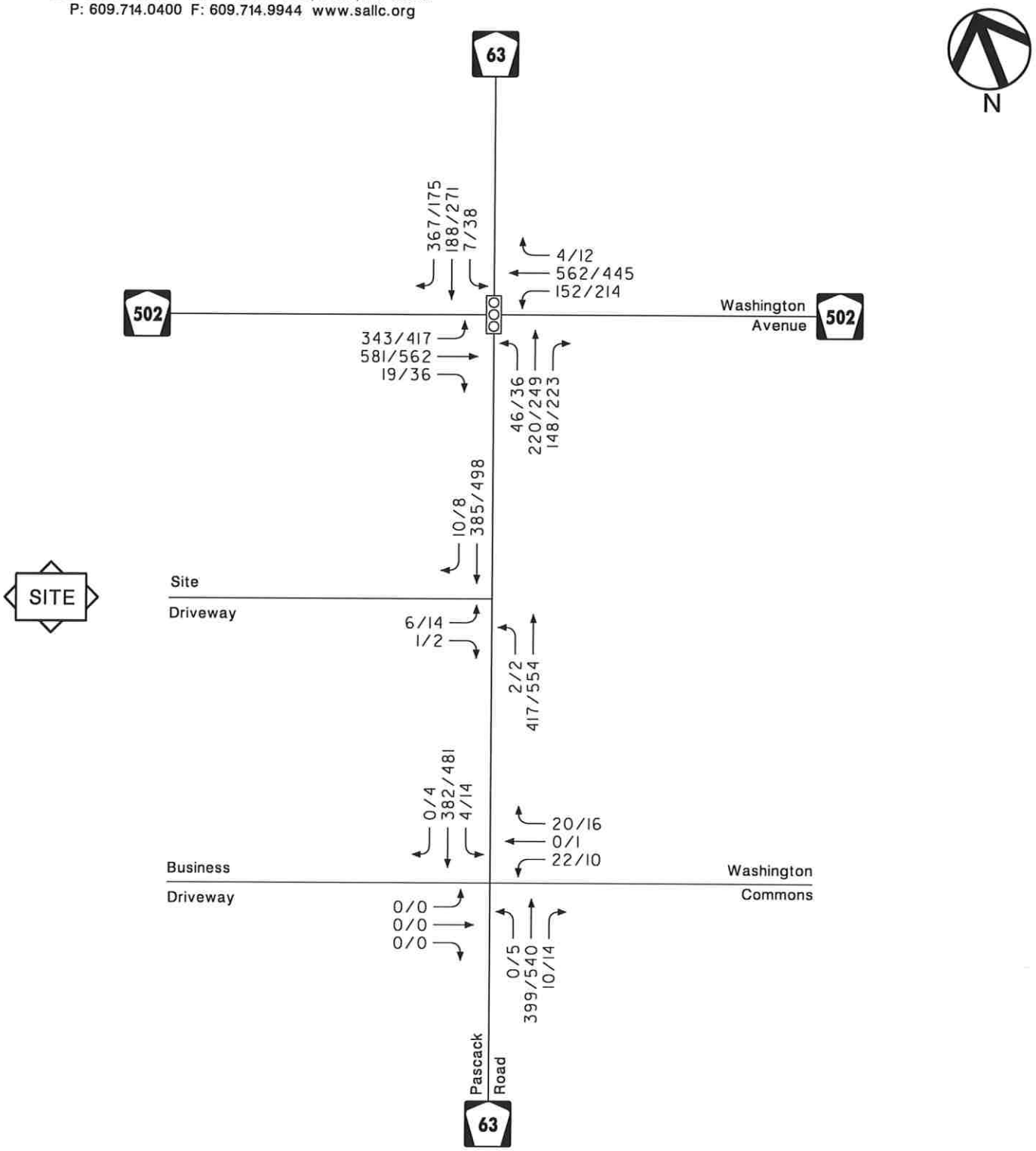

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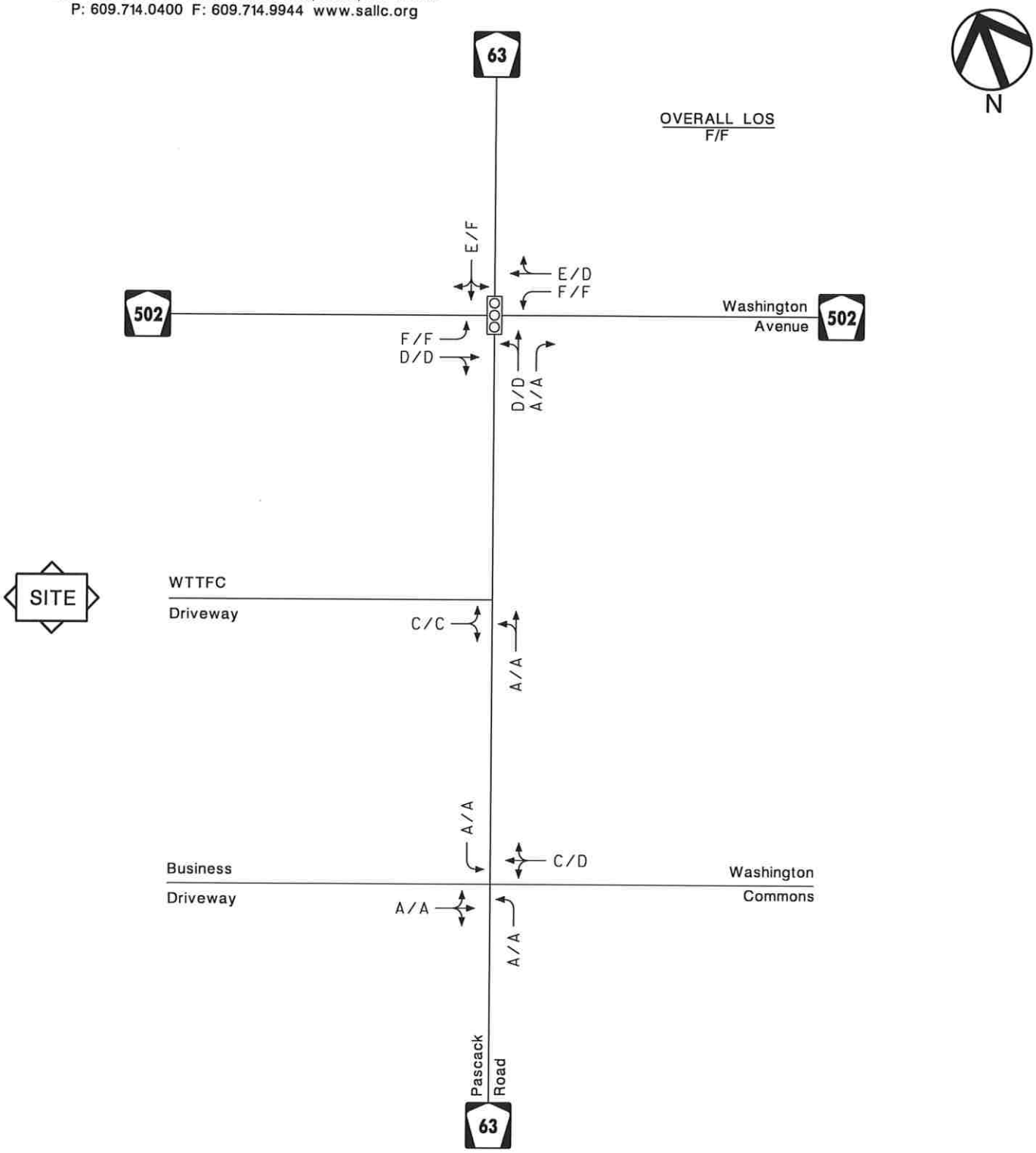
FIGURE 7
EXISTING LEVELS OF SERVICE



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Washington Township, Bergen County, New Jersey
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FIGURE 8
NO-BUILD LEVELS OF SERVICE

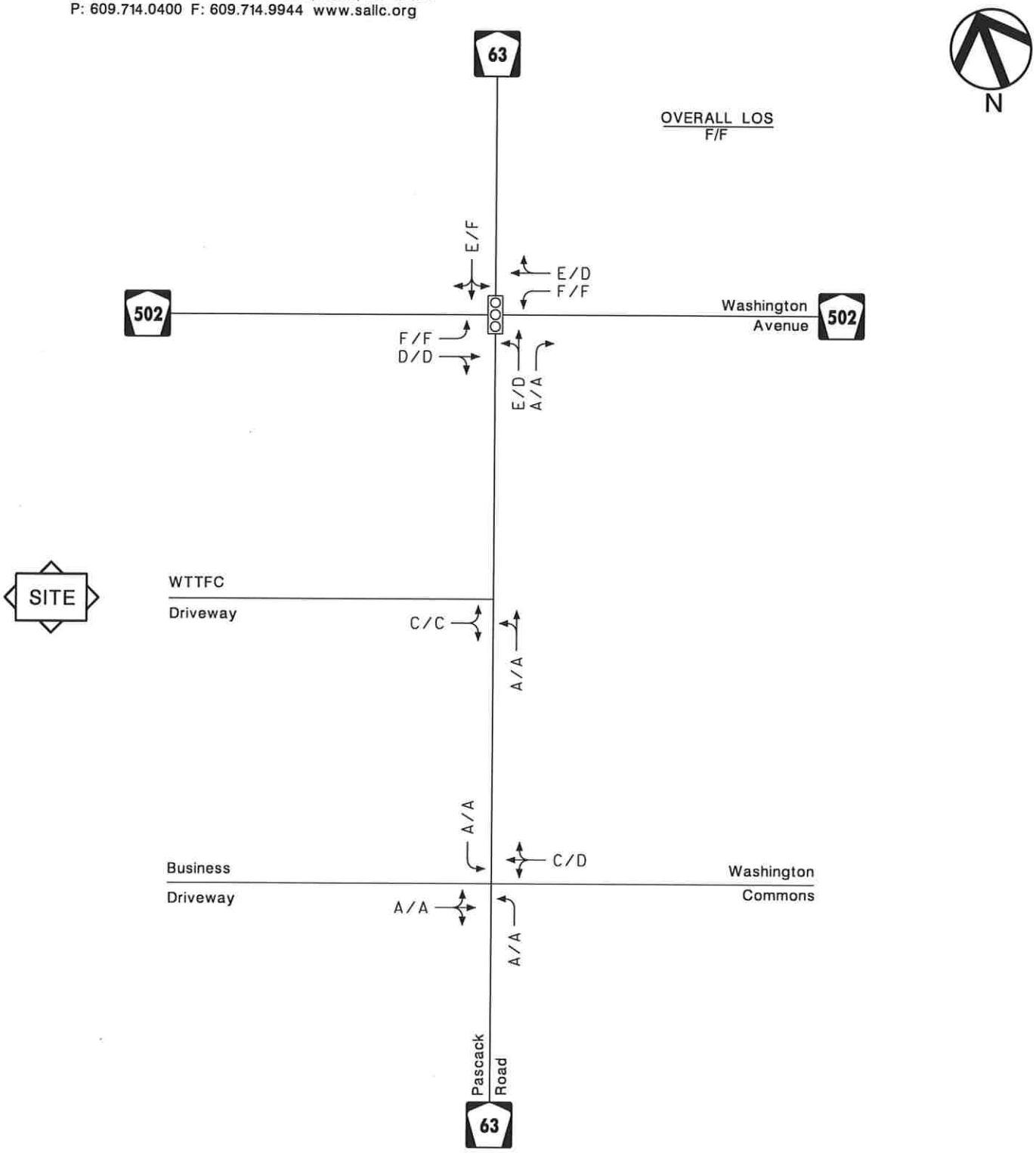

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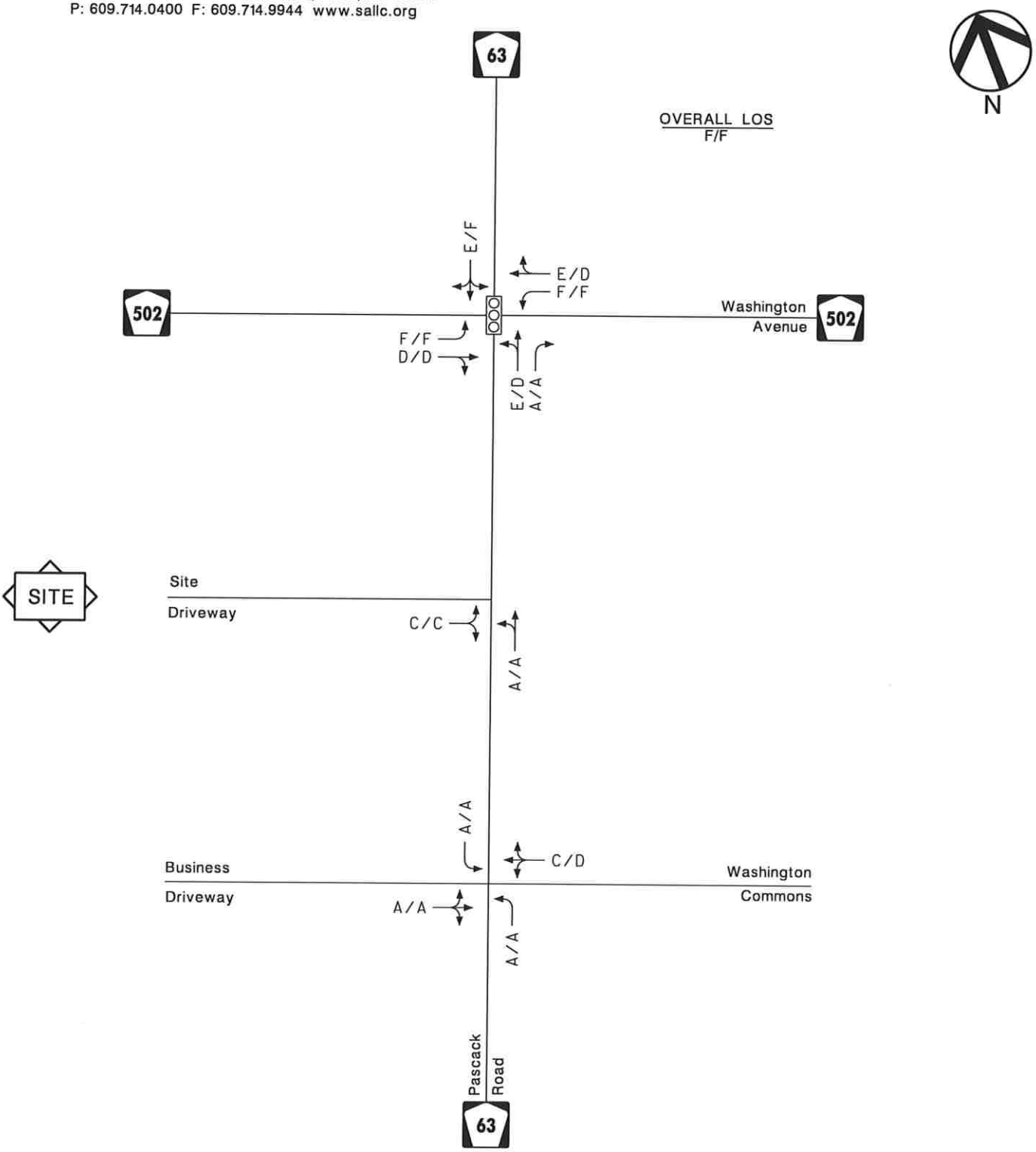
FIGURE 9
BUILD LEVELS OF SERVICE



CSH – Pascack

Washington Township, Bergen County, New Jersey
January 2020

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SA Project No. 19130

BERGEN COUNTY 63 (South to North)

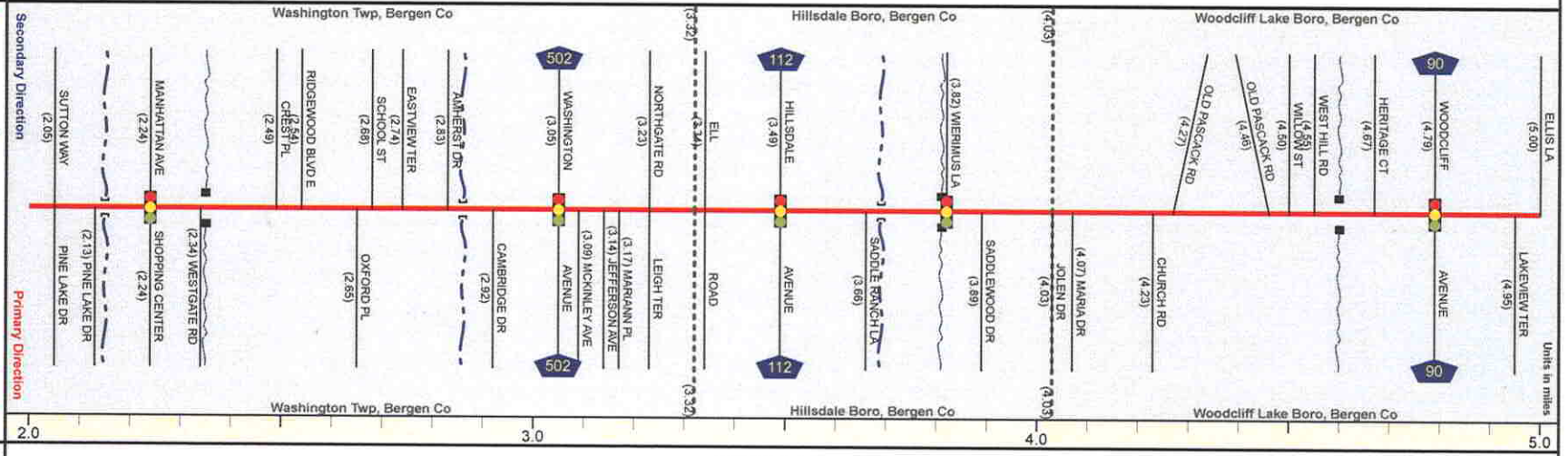
Mile Posts: 2.000 - 5.000

Secondary Direction

Primary Direction

Pavement	
Shoulder	
Number of Lanes	
Speed Limit	
Street Name	

Interstate Route 287
US Route 22
NJ Route 33
County Road 689
Interchange Number 2
Grade Separated Interchange
Traffic Signal
Traffic Monitoring Sites WIM AVC VOL
Road Underpass
Road Overpass



Street Name	Pascack Road
Jurisdiction	County
Functional Class	Urban Minor Arterial
Federal Aid - NHS Sy	STP
Control Section	
Speed Limit	40
Number of Lanes	2
Med. Type	None
Med. Width	0
Pavement	30 / 22
Shoulder	0 / 1
Traffic Volume	14,944 (2013)
Traffic Sta. ID	120245
Structure No.	
Enlarged Views	

Page Created June, 2015

SRI = 02000063__

Date last inventoried: August 2011

ROUTE 502 (West to East)

Mile Posts: 14.000 - 17.000

Secondary Direction

Primary Direction

Pavement

Shoulder

Number of Lanes

Speed Limit

Street Name

Interstate Route

US Route

NJ Route

County Road

Interchange Number

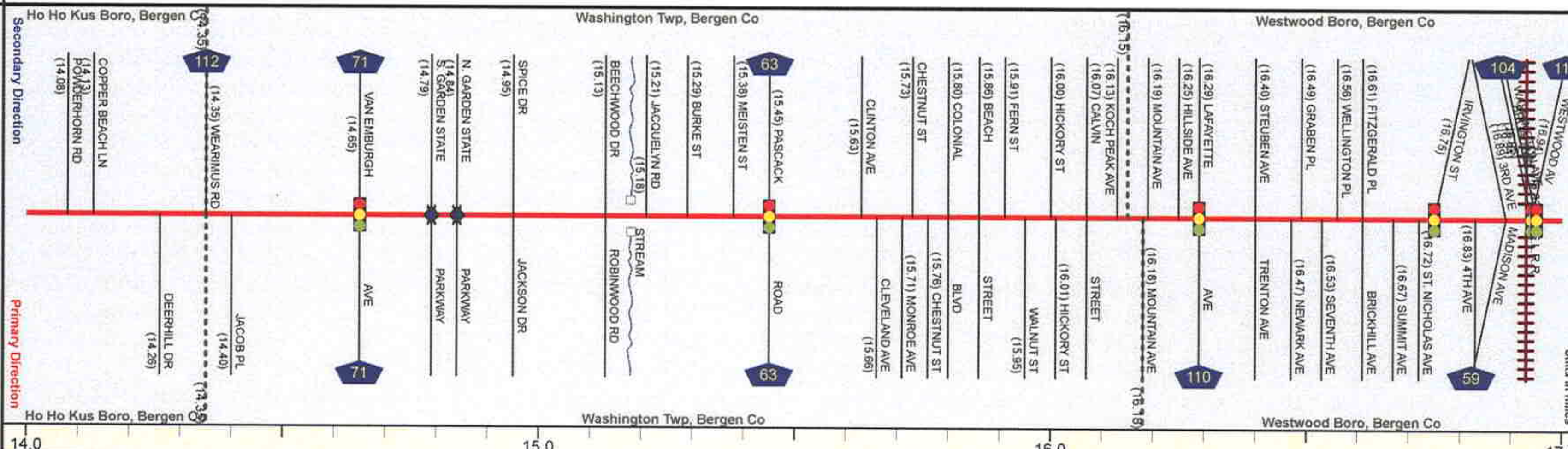
Grade Separated Interchange

Traffic Signal

Traffic Monitoring Sites

Road Underpass

Road Overpass



Street Name	Wearimus Road (14.0–14.35)	Washington Avenue (14.35–16.97)	Broadway (16.97–17.0)

Jurisdiction	Functional Class	Federal Aid - NHS Sy	Control Section	Med. Type	Med. Width	Number of Lanes
County	Urban Principal Arterial	NHS		None	0	2

Speed Limit	
14.0–16.74	35
16.74–16.97	30
16.97–17.0	25

Pavement	
14.0–14.63	24
14.63–14.84	36
14.84–15.17	26
15.17–16.27	32
16.27–16.97	30
16.97–17.0	40

Shoulder	
14.0–14.84	0
14.84–15.17	1
15.17–16.27	2
16.27–17.0	0

Traffic Volume

Traffic Sta. ID

Structure No.: N/A N/A (14.79, 14.84); N/A (15.18)

Enlarged Views

Page Created: June, 2015

SRI = 00000502__

Date last inventoried: June 2012

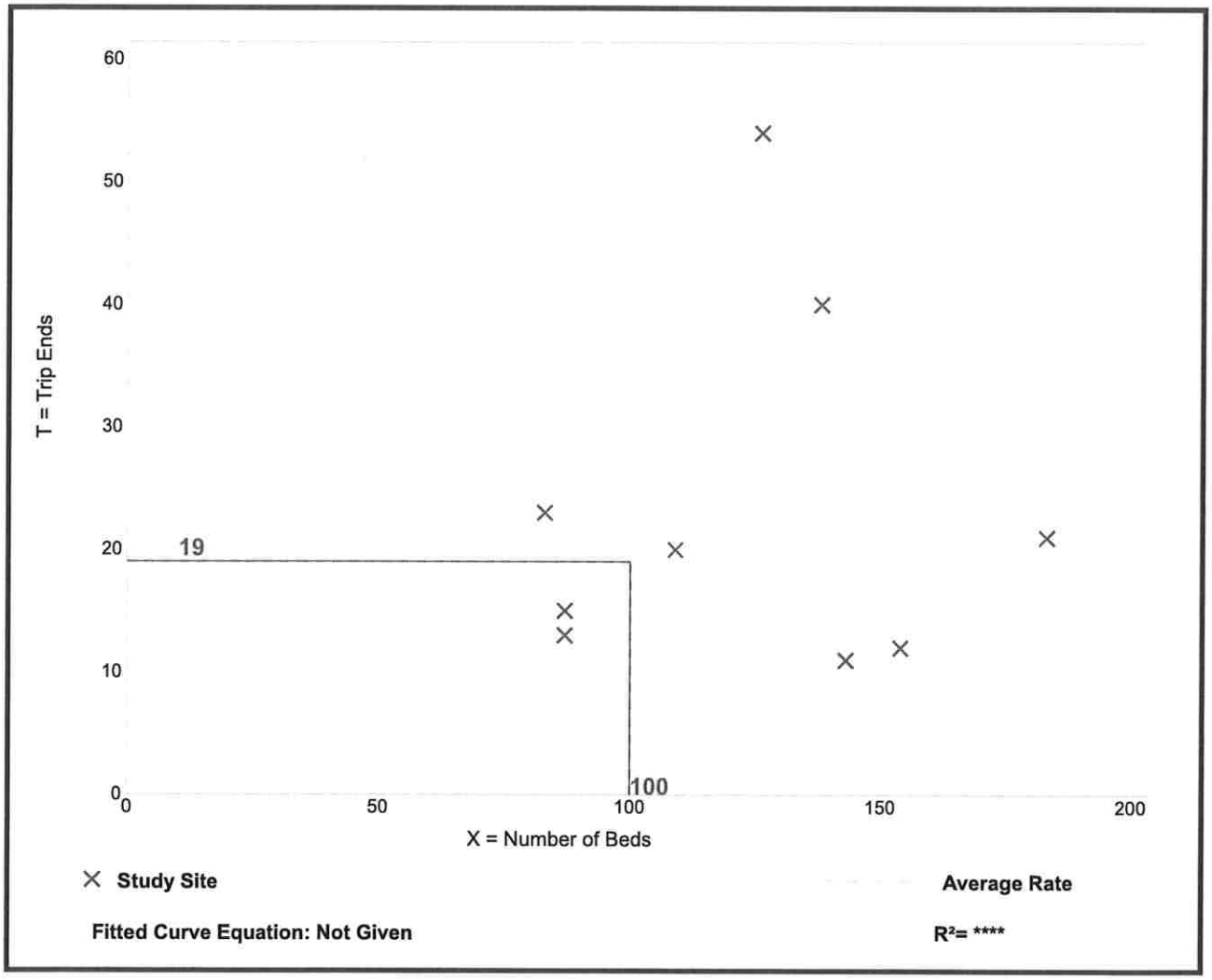
Assisted Living
(254)

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



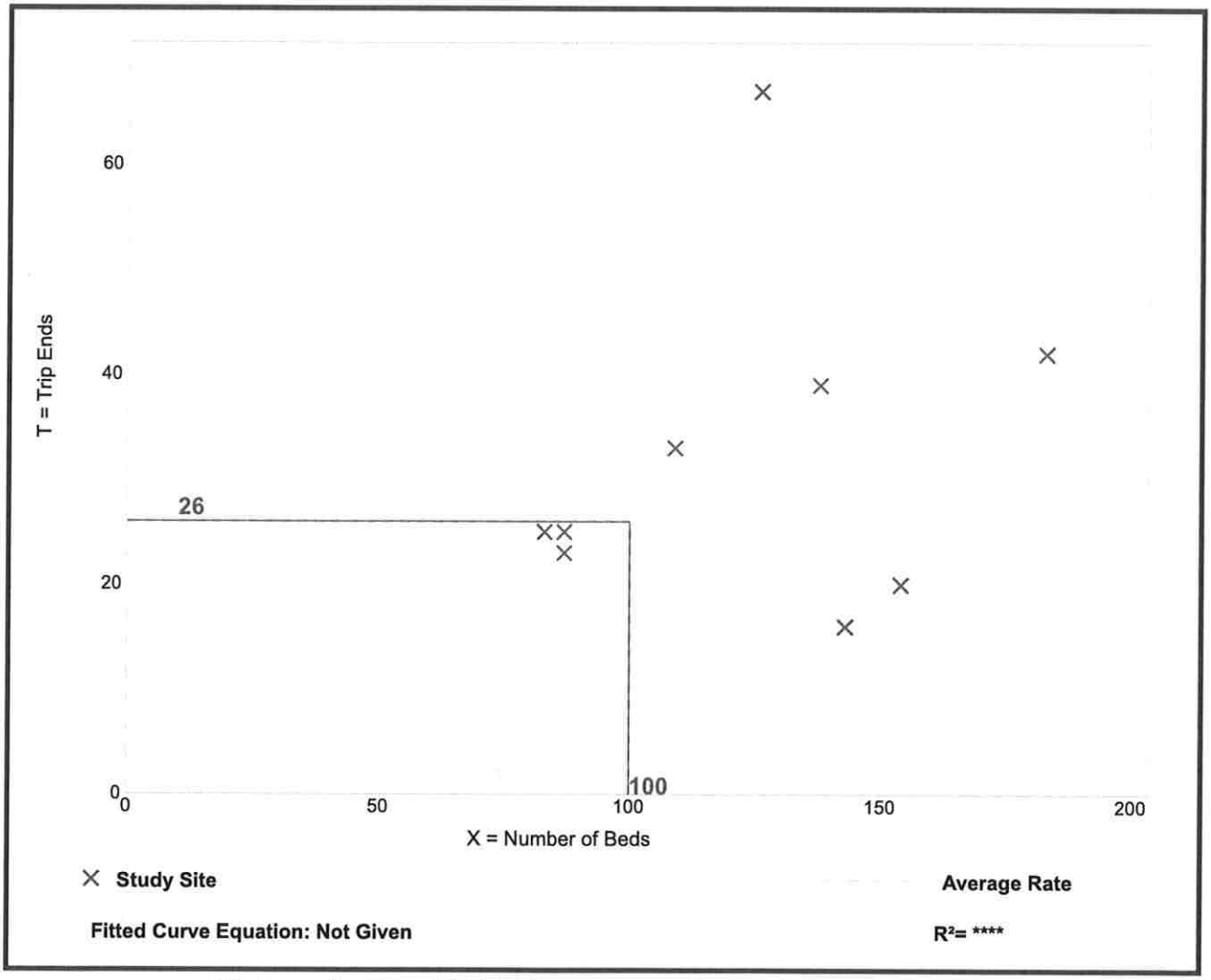
Assisted Living
(254)

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

277 Whitehorse Pike, Suite 203
Atco, NJ 08004

N/S Route: Pascack Road
E/W Route: Washington Avenue
Washington Twp/Bergen County/NJ
Wednesday/clear/ECM/4428

File Name : 19130001
Site Code : 19130001
Start Date : 9/25/2019
Page No : 1

Groups Printed- Unshifted

	Pascack Road Southbound					Washington Avenue Westbound					Pascack Road Northbound					Washington Avenue Eastbound					
Start Time	Right	Thru	Left	ROR	App Total	Right	Thru	Left	ROR	App Total	Right	Thru	Left	ROR	App Total	Right	Thru	Left	ROR	App Total	Int. Total
07:00 AM	76	40	2	27	145	4	140	33	0	177	7	29	3	8	47	5	113	79	0	197	566
07:15 AM	86	41	3	17	147	0	145	31	0	176	12	40	6	15	73	4	137	87	0	228	624
07:30 AM	64	34	2	14	114	1	148	27	0	176	19	51	12	14	96	1	146	92	0	239	625
07:45 AM	66	54	1	17	138	1	155	41	0	197	32	73	14	23	142	6	150	80	0	236	713
Total	292	169	8	75	544	6	588	132	0	726	70	193	35	60	358	16	546	338	0	900	2528
08:00 AM	77	51	1	15	144	2	136	46	0	184	14	50	12	14	90	5	134	76	0	215	633
08:15 AM	54	50	3	6	113	1	147	57	0	205	11	41	9	14	75	4	110	77	0	191	584
08:30 AM	60	41	5	8	114	8	136	42	0	186	21	41	10	21	93	5	137	79	0	221	614
08:45 AM	53	59	6	15	133	6	110	32	2	150	19	53	9	12	93	6	132	75	0	213	589
Total	244	201	15	44	504	17	529	177	2	725	65	185	40	61	351	20	513	307	0	840	2420
*** BREAK ***																					
02:00 PM	34	54	8	4	100	7	88	39	0	134	21	51	10	10	92	8	124	82	0	214	540
02:15 PM	43	58	6	9	116	9	104	35	2	150	15	66	7	16	104	6	110	76	0	192	562
02:30 PM	62	47	4	8	121	11	113	55	0	179	27	40	4	22	93	12	117	80	0	209	602
02:45 PM	49	72	6	4	131	2	67	31	0	100	27	57	0	19	103	13	123	95	0	231	565
Total	188	231	24	25	468	29	372	160	2	563	90	214	21	67	392	39	474	333	0	846	2269
03:00 PM	49	53	9	10	121	2	96	46	0	144	39	56	10	28	133	22	140	72	0	234	632
03:15 PM	40	42	4	6	92	5	127	39	0	171	32	50	12	33	127	4	147	77	0	228	618
03:30 PM	72	50	6	8	136	4	132	20	0	156	31	56	4	26	117	10	131	75	0	216	625
03:45 PM	64	48	6	6	124	2	117	48	0	167	28	44	0	17	89	6	134	81	0	221	601
Total	225	193	25	30	473	13	472	153	0	638	130	206	26	104	466	42	552	305	0	899	2476
04:00 PM	57	49	6	2	114	4	112	31	3	150	19	57	6	13	95	5	142	90	0	237	596
04:15 PM	43	62	6	12	123	2	124	56	0	182	30	48	9	18	105	5	137	98	0	240	650
04:30 PM	39	64	10	2	115	4	107	66	0	177	29	49	5	18	101	5	135	99	0	239	632
04:45 PM	29	71	12	7	119	6	102	50	0	158	45	65	14	18	142	14	141	91	0	246	665
Total	168	246	34	23	471	16	445	203	3	667	123	219	34	67	443	29	555	378	0	962	2543
05:00 PM	36	67	9	2	114	0	101	39	0	140	35	79	6	21	141	13	135	119	0	267	662
05:15 PM	45	65	5	3	118	9	114	52	2	177	18	61	10	26	115	19	122	90	0	231	641
05:30 PM	38	81	8	0	127	12	77	36	2	127	23	52	7	24	106	46	107	105	0	258	618
05:45 PM	37	61	5	6	109	0	124	38	0	162	27	57	14	36	134	33	119	93	0	245	650
Total	156	274	27	11	468	21	416	165	4	606	103	249	37	107	496	111	483	407	0	1001	2571
Grand Total	1273	1314	133	208	2928	102	2822	990	11	3925	581	1266	193	466	2506	257	3123	2068	0	5448	14807
Apprch %	43.5	44.9	4.5	7.1		2.6	71.9	25.2	0.3		23.2	50.5	7.7	18.6		4.7	57.3	38	0		
Total %	8.6	8.9	0.9	1.4	19.8	0.7	19.1	6.7	0.1	26.5	3.9	8.6	1.3	3.1	16.9	1.7	21.1	14	0	36.8	

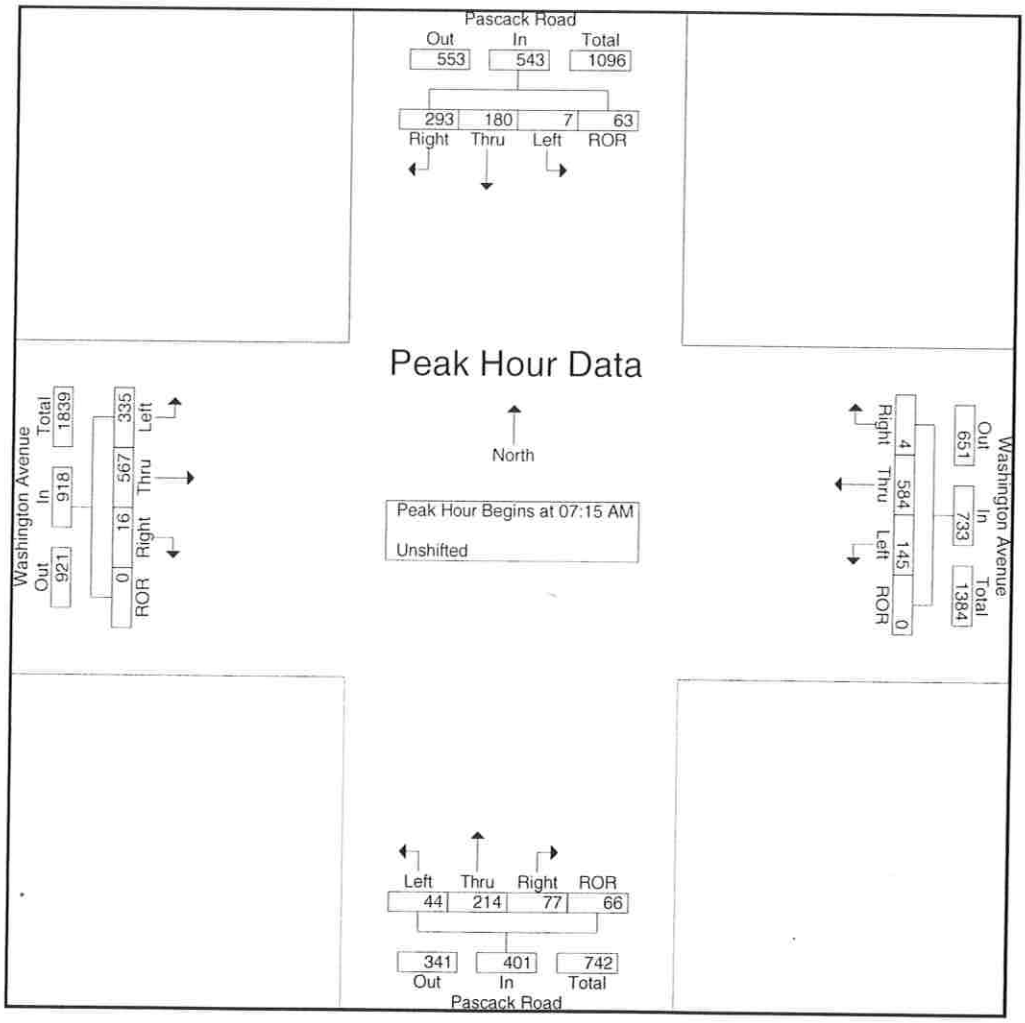
Shropshire Associates LLC

277 Whitehorse Pike, Suite 203
Atco, NJ 08004

N/S Route: Pascack Road
E/W Route: Washington Avenue
Washington Twp/Bergen County/NJ
Wednesday/clear/ECM/4428

File Name : 19130001
Site Code : 19130001
Start Date : 9/25/2019
Page No : 2

	Pascack Road Southbound					Washington Avenue Westbound					Pascack Road Northbound					Washington Avenue Eastbound					
Start Time	Right	Thru	Left	ROR	App Total	Right	Thru	Left	ROR	App Total	Right	Thru	Left	ROR	App Total	Right	Thru	Left	ROR	App Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	**86**	41	**3**	**17**	**147**	0	145	31	0	176	12	40	6	15	73	4	137	87	0	228	624
07:30 AM	64	34	2	14	114	1	148	27	0	176	19	51	12	14	96	1	146	**92**	0	**239**	625
07:45 AM	66	**54**	1	17	138	1	**155**	41	0	**197**	**32**	**73**	**14**	**23**	**142**	**6**	**150**	80	0	236	**713**
08:00 AM	77	51	1	15	144	**2**	136	**46**	0	184	14	50	12	14	90	5	134	76	0	215	633
Total Volume	293	180	7	63	543	4	584	145	0	733	77	214	44	66	401	16	567	335	0	918	2595
% App. Total	54	33.1	1.3	11.6		0.5	79.7	19.8	0		19.2	53.4	11	16.5		1.7	61.8	36.5	0		
PHF	.852	.833	.583	.926	.923	.500	.942	.788	.000	.930	.602	.733	.786	.717	.706	.667	.945	.910	.000	.960	.910



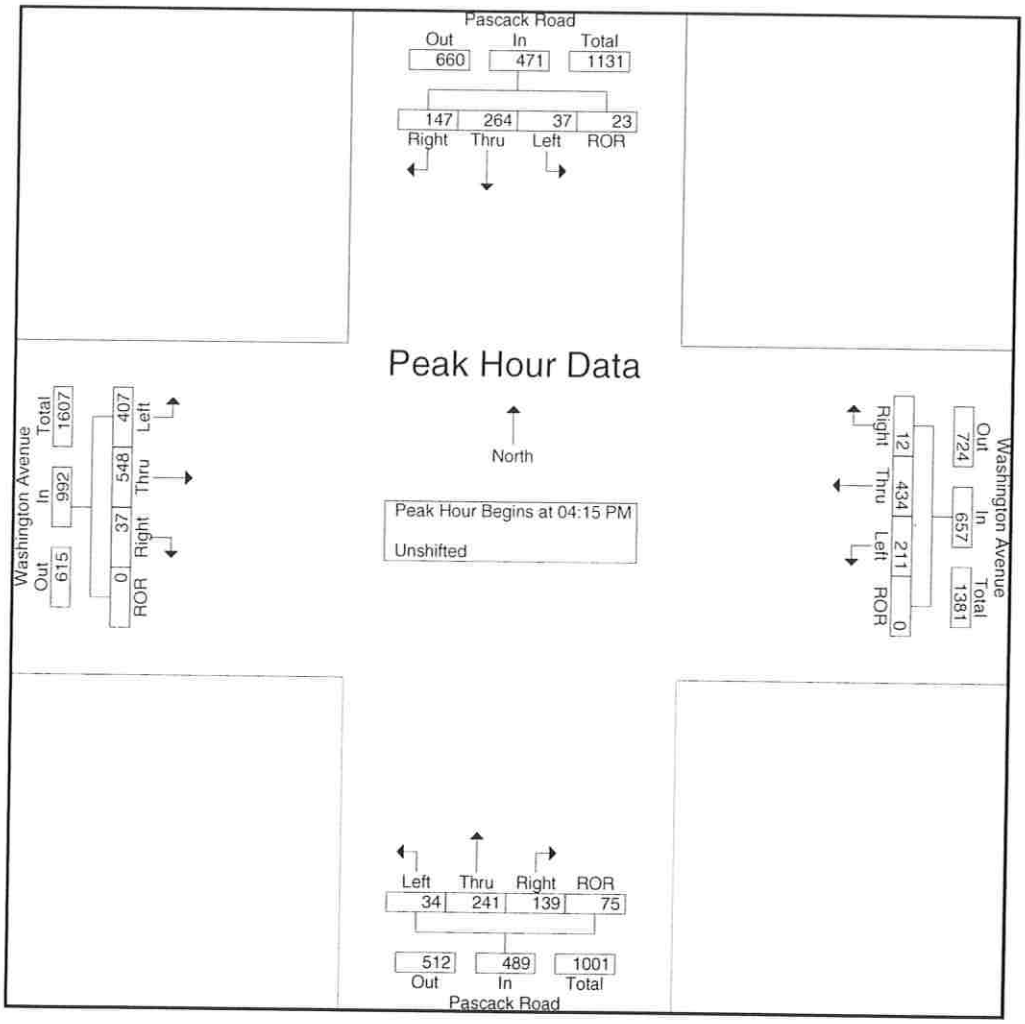
Shropshire Associates LLC

277 Whitehorse Pike, Suite 203
Atco, NJ 08004

N/S Route: Pascack Road
E/W Route: Washington Avenue
Washington Twp/Bergen County/NJ
Wednesday/clear/ECM/4428

File Name : 19130001
Site Code : 19130001
Start Date : 9/25/2019
Page No : 3

	Pascack Road Southbound					Washington Avenue Westbound					Pascack Road Northbound					Washington Avenue Eastbound					
Start Time	Right	Thru	Left	ROR	App Total	Right	Thru	Left	ROR	App Total	Right	Thru	Left	ROR	App Total	Right	Thru	Left	ROR	App Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	**43**	62	6	**12**	**123**	2	**124**	56	0	**182**	30	48	9	18	105	5	137	98	0	240	650
04:30 PM	39	64	10	2	115	4	107	**66**	0	177	29	49	5	18	101	5	135	99	0	239	632
04:45 PM	29	**71**	**12**	7	119	**6**	102	50	0	158	**45**	65	**14**	18	**142**	**14**	**141**	91	0	246	**665**
05:00 PM	36	67	9	2	114	0	101	39	0	140	35	**79**	6	**21**	141	13	135	**119**	0	**267**	662
Total Volume	147	264	37	23	471	12	434	211	0	657	139	241	34	75	489	37	548	407	0	992	2609
% App. Total	31.2	56.1	7.9	4.9		1.8	66.1	32.1	0		28.4	49.3	7	15.3		3.7	55.2	41	0		
PHF	.855	.930	.771	.479	.957	.500	.875	.799	.000	.902	.772	.763	.607	.893	.861	.661	.972	.855	.000	.929	.981



Shropshire Associates LLC

277 Whitehorse Pike, Suite 203
Atco, NJ 08004

N/S Route: Pascack Road
E/W Route: Washington Commons/Business
Washington Twp/Bergen County/NJ
Wednesday/clear/CM/3142

File Name : 19130002mod2
Site Code : 19130002
Start Date : 9/25/2019
Page No : 1

Groups Printed- Unshifted

	Pascack Road Southbound				Washington Commons Driveway Westbound				Pascack Road Northbound				Business Driveway 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	0	73	3	76	3	0	2	5	0	41	0	41	0	0	0	0	122
07:15 AM	0	71	1	72	3	0	4	7	1	69	0	70	0	0	0	0	149
07:30 AM	0	69	0	69	9	0	7	16	3	102	0	105	0	0	0	0	190
07:45 AM	0	94	2	96	4	0	7	11	0	125	0	125	0	0	0	0	232
Total	0	307	6	313	19	0	20	39	4	337	0	341	0	0	0	0	693
08:00 AM	0	98	0	98	3	0	5	8	4	88	0	92	0	0	0	0	198
08:15 AM	0	113	2	115	4	0	3	7	3	72	0	75	0	0	0	0	197
08:30 AM	0	88	0	88	2	0	8	10	4	88	0	92	0	0	0	0	190
08:45 AM	0	93	0	93	5	0	5	10	4	95	0	99	0	0	0	0	202
Total	0	392	2	394	14	0	21	35	15	343	0	358	0	0	0	0	787
*** BREAK ***																	
02:00 PM	0	92	6	98	5	0	6	11	0	100	0	100	0	0	0	0	209
02:15 PM	0	97	4	101	1	0	5	6	6	95	0	101	0	0	0	0	208
02:30 PM	0	113	6	119	1	0	4	5	5	101	1	107	0	0	0	0	231
02:45 PM	0	104	5	109	8	0	3	11	3	85	0	88	0	0	0	0	208
Total	0	406	21	427	15	0	18	33	14	381	1	396	0	0	0	0	856
03:00 PM	0	95	6	101	2	0	8	10	6	130	0	136	0	0	0	0	247
03:15 PM	0	79	3	82	3	0	4	7	9	128	0	137	0	0	0	0	226
03:30 PM	0	73	5	78	2	0	2	4	6	124	0	130	0	0	0	0	212
03:45 PM	2	90	5	97	5	0	5	10	5	103	0	108	0	0	0	0	215
Total	2	337	19	358	12	0	19	31	26	485	0	511	0	0	0	0	900
04:00 PM	1	90	3	94	1	0	4	5	4	103	0	107	0	0	0	0	206
04:15 PM	2	111	9	122	0	0	3	3	4	99	1	104	0	0	0	0	229
04:30 PM	6	83	1	90	2	0	2	4	3	118	1	122	0	0	0	0	216
04:45 PM	4	113	6	123	4	0	1	5	4	119	3	126	0	0	0	0	254
Total	13	397	19	429	7	0	10	17	15	439	5	459	0	0	0	0	905
05:00 PM	1	131	3	135	3	0	2	5	2	138	4	144	0	0	0	0	284
05:15 PM	2	121	6	129	2	0	2	4	4	128	1	133	0	0	0	0	266
05:30 PM	1	110	2	113	5	1	5	11	4	109	0	113	0	0	0	0	237
05:45 PM	0	112	3	115	6	0	1	7	4	157	0	161	0	0	0	0	283
Total	4	474	14	492	16	1	10	27	14	532	5	551	0	0	0	0	1070
Grand Total	19	2313	81	2413	83	1	98	182	88	2517	11	2616	0	0	0	0	5211
Apprch %	0.8	95.9	3.4		45.6	0.5	53.8		3.4	96.2	0.4		0	0	0		
Total %	0.4	44.4	1.6	46.3	1.6	0	1.9	3.5	1.7	48.3	0.2	50.2	0	0	0	0	

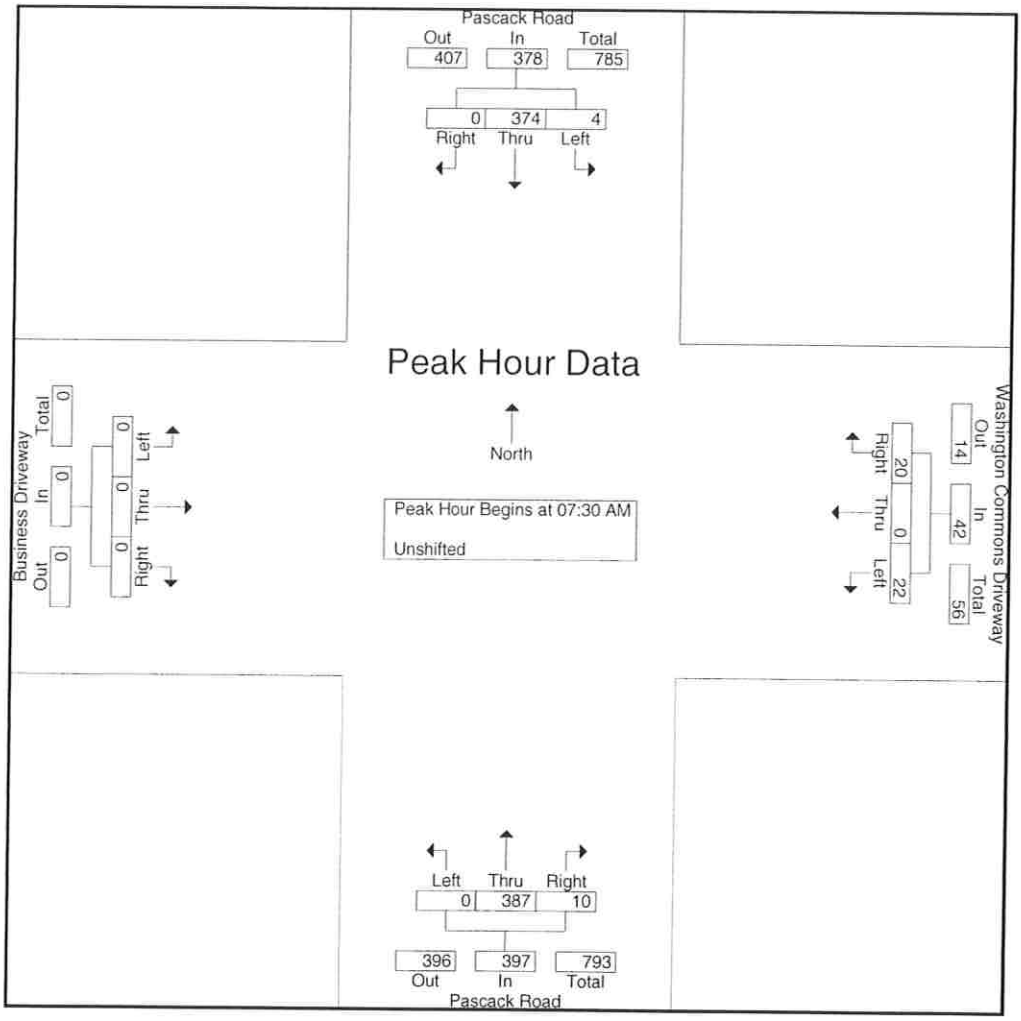
Shropshire Associates LLC

277 Whitehorse Pike, Suite 203
Atco, NJ 08004

N/S Route: Pascack Road
E/W Route: Washington Commons/Business
Washington Twp/Bergen County/NJ
Wednesday/clear/CM/3142

File Name : 19130002mod2
Site Code : 19130002
Start Date : 9/25/2019
Page No : 2

	Pascack Road Southbound				Washington Commons Driveway Westbound				Pascack Road Northbound				Business Driveway 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 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	69	0	69	**9**	0	**7**	**16**	3	102	0	105	0	0	0	0	190
07:45 AM	0	94	**2**	96	4	0	7	11	0	**125**	0	**125**	0	0	0	0	**232**
08:00 AM	0	98	0	98	3	0	5	8	**4**	88	0	92	0	0	0	0	198
08:15 AM	0	**113**	2	**115**	4	0	3	7	3	72	0	75	0	0	0	0	197
Total Volume	0	374	4	378	20	0	22	42	10	387	0	397	0	0	0	0	817
% App. Total	0	98.9	1.1		47.6	0	52.4		2.5	97.5	0		0	0	0		
PHF	.000	.827	.500	.822	.556	.000	.786	.656	.625	.774	.000	.794	.000	.000	.000	.000	.880



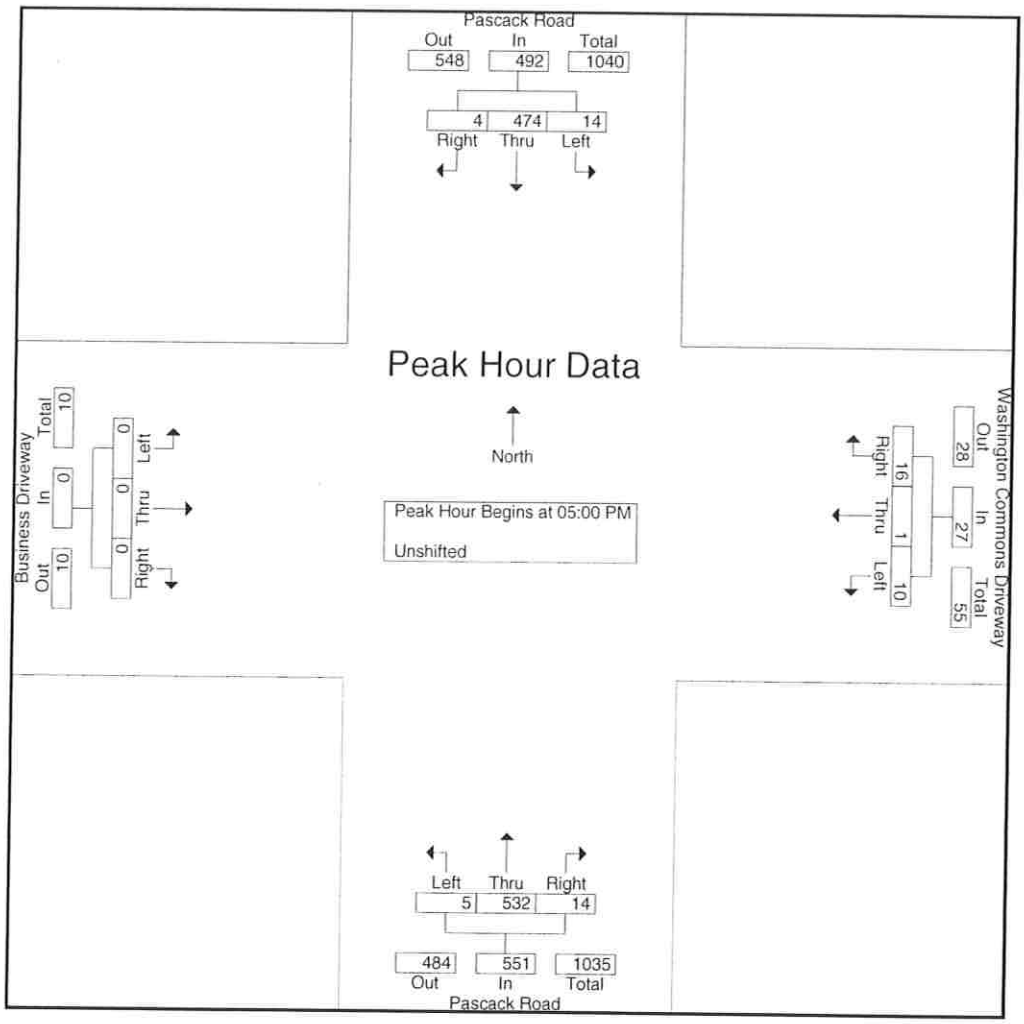
Shropshire Associates LLC

277 Whitehorse Pike, Suite 203
Atco, NJ 08004

N/S Route: Pascack Road
E/W Route: Washington Commons/Business
Washington Twp/Bergen County/NJ
Wednesday/clear/CM/3142

File Name : 19130002mod2
Site Code : 19130002
Start Date : 9/25/2019
Page No : 3

	Pascack Road Southbound				Washington Commons Driveway Westbound				Pascack Road Northbound				Business Driveway 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 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	1	**131**	3	**135**	3	0	2	5	2	138	**4**	144	0	0	0	0	**284**
05:15 PM	**2**	121	**6**	129	2	0	2	4	**4**	128	1	133	0	0	0	0	266
05:30 PM	1	110	2	113	5	**1**	**5**	**11**	4	109	0	113	0	0	0	0	237
05:45 PM	0	112	3	115	**6**	0	1	7	4	**157**	0	**161**	0	0	0	0	283
Total Volume	4	474	14	492	16	1	10	27	14	532	5	551	0	0	0	0	1070
% App. Total	0.8	96.3	2.8		59.3	3.7	37		2.5	96.6	0.9		0	0	0		
PHF	.500	.905	.583	.911	.667	.250	.500	.614	.875	.847	.313	.856	.000	.000	.000	.000	.942



Shropshire Associates LLC

277 Whitehorse Pike, Suite 203
Atco, NJ 08004

N/S Route: Pascack Road
E/W Route: Tennis Club Driveway
Washington Twp/Bergen County/NJ
Wednesday/clear/CM/3142

File Name : 19130002b1mod1
Site Code : 19130002
Start Date : 9/25/2019
Page No : 1

Groups Printed- Bank 1

	Pascack Road Southbound		Pascack Road Northbound		Tennis Club Driveway Eastbound			
Start Time	Right	App. Total	Left	App. Total	Right	Left	App. Total	Int. Total
*** BREAK ***								
07:15 AM	1	1	0	0	0	0	0	1
07:30 AM	0	0	2	2	1	1	2	4
07:45 AM	0	0	0	0	2	2	4	4
Total	1	1	2	2	3	3	6	9
08:00 AM	0	0	0	0	1	1	2	2
08:15 AM	0	0	0	0	0	1	1	1
08:30 AM	0	0	0	0	1	0	1	1
08:45 AM	0	0	0	0	1	0	1	1
Total	0	0	0	0	3	2	5	5
*** BREAK ***								
02:00 PM	0	0	1	1	2	2	4	5
*** BREAK ***								
02:30 PM	0	0	0	0	0	2	2	2
02:45 PM	0	0	1	1	0	0	0	1
Total	0	0	2	2	2	4	6	8
03:00 PM	0	0	1	1	0	2	2	3
03:15 PM	1	1	2	2	0	1	1	4
03:30 PM	2	2	0	0	1	0	1	3
03:45 PM	2	2	0	0	0	0	0	2
Total	5	5	3	3	1	3	4	12
04:00 PM	1	1	2	2	0	2	2	5
04:15 PM	0	0	1	1	0	0	0	1
04:30 PM	0	0	3	3	4	0	4	7
04:45 PM	7	7	7	7	2	4	6	20
Total	8	8	13	13	6	6	12	33
05:00 PM	0	0	2	2	1	2	3	5
05:15 PM	1	1	0	0	3	0	3	4
05:30 PM	5	5	1	1	3	3	6	12
05:45 PM	7	7	0	0	0	1	1	8
Total	13	13	3	3	7	6	13	29
Grand Total	27	27	23	23	22	24	46	96
Apprch %	100		100		47.8	52.2		
Total %	28.1	28.1	24	24	22.9	25	47.9	

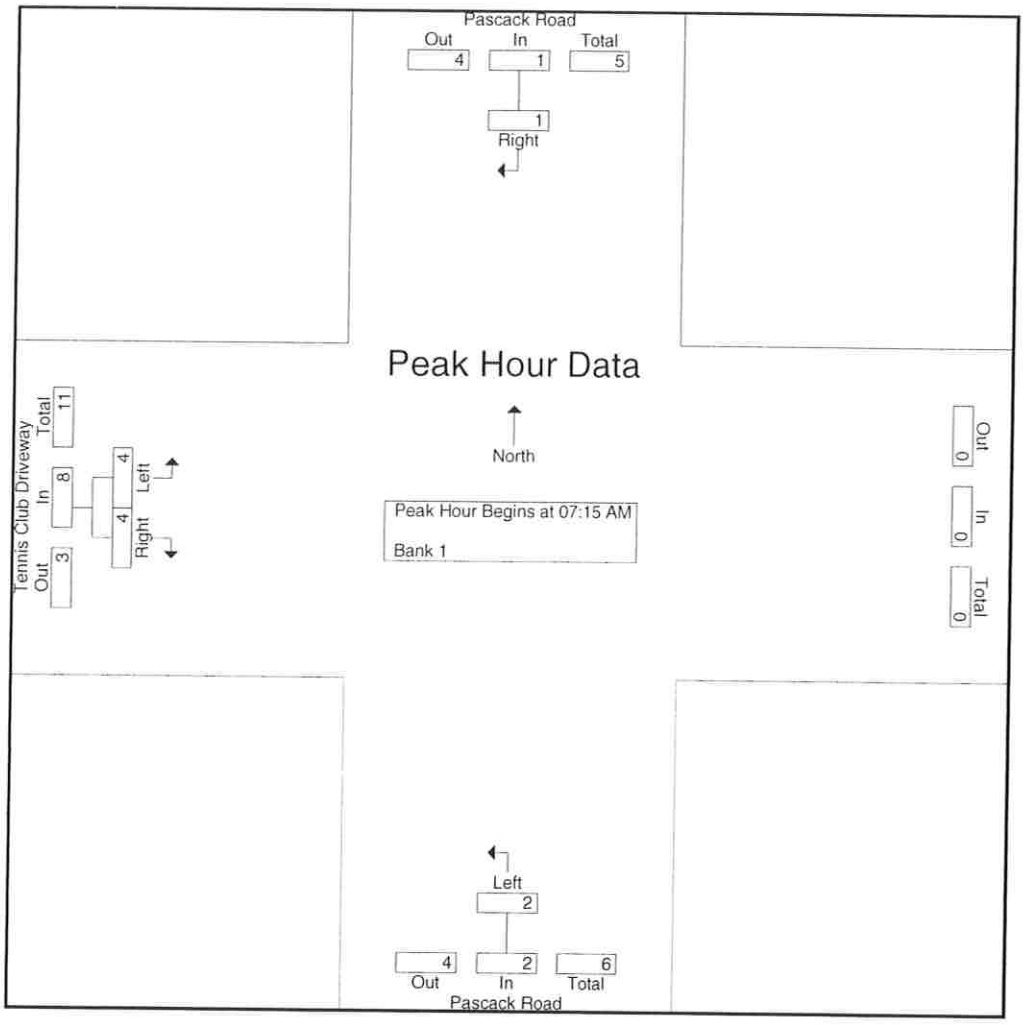
Shropshire Associates LLC

277 Whitehorse Pike, Suite 203
Atco, NJ 08004

N/S Route: Pascack Road
E/W Route: Tennis Club Driveway
Washington Twp/Bergen County/NJ
Wednesday/clear/CM/3142

File Name : 19130002b1mod1
Site Code : 19130002
Start Date : 9/25/2019
Page No : 2

	Pascack Road Southbound		Pascack Road Northbound		Tennis Club Driveway Eastbound			
Start Time	Right	App. Total	Left	App. Total	Right	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1								
Peak Hour for Entire Intersection Begins at 07:15 AM								
07:15 AM	**1**	**1**	0	0	0	0	0	1
07:30 AM	0	0	**2**	**2**	1	1	2	**4**
07:45 AM	0	0	0	0	**2**	**2**	**4**	4
08:00 AM	0	0	0	0	1	1	2	2
Total Volume	1	1	2	2	4	4	8	11
% App. Total	100		100		50	50		
PHF	.250	.250	.250	.250	.500	.500	.500	.688



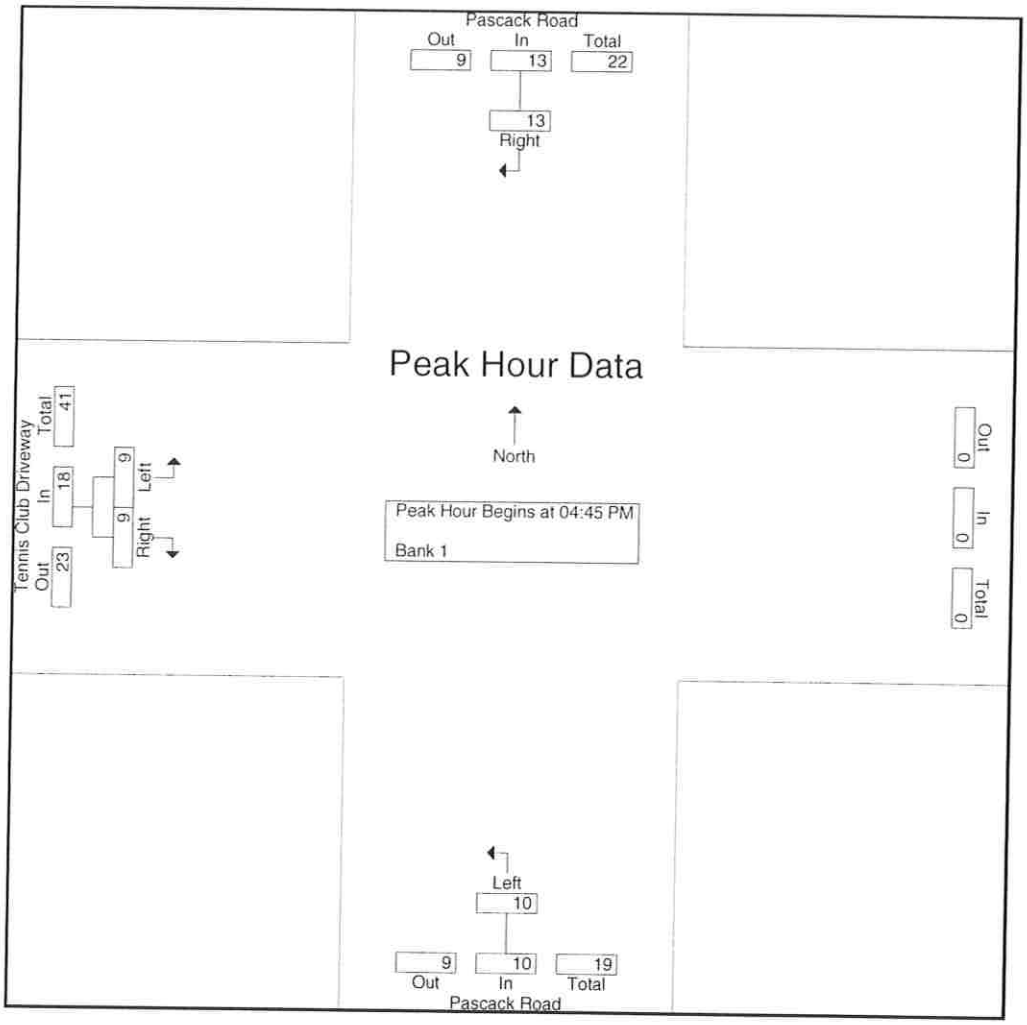
Shropshire Associates LLC

277 Whitehorse Pike, Suite 203
Atco, NJ 08004

N/S Route: Pascack Road
E/W Route: Tennis Club Driveway
Washington Twp/Bergen County/NJ
Wednesday/clear/CM/3142

File Name : 19130002b1mod1
Site Code : 19130002
Start Date : 9/25/2019
Page No : 3

	Pascack Road Southbound		Pascack Road Northbound		Tennis Club Driveway Eastbound			
Start Time	Right	App. Total	Left	App. Total	Right	Left	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1								
Peak Hour for Entire Intersection Begins at 04:45 PM								
04:45 PM	**7**	**7**	**7**	**7**	2	**4**	**6**	**20**
05:00 PM	0	0	2	2	1	2	3	5
05:15 PM	1	1	0	0	**3**	0	3	4
05:30 PM	5	5	1	1	3	3	6	12
Total Volume	13	13	10	10	9	9	18	41
% App. Total	100		100		50	50		
PHF	.464	.464	.357	.357	.750	.563	.750	.513



TOWNSHIP OF WASHINGTON POLICE
DEPARTMENT 0F PUBLIC SAFETY
350 Hudson Avenue, Township of Washington
County of Bergen - New Jersey 07676
Hdqts 201-664-1140
FAX 201-664-2959

WWW.WASHTWPPOLICE.ORG

Glenn Hooper
Chief of Police

RECEIVED
SEP 11 2019
TOWNSHIP CLERK

September 11, 2019

As per the OPRA request for the timing of the Traffic Light at Pascack Rd & Washington Ave.

Below time are from Officer Observing the intersection and timing same

Washington Ave East / West

Red	*33 Seconds*
Amber	*04 Seconds*
Green	*30 Seconds*
Left Turn Signal	*14 Second*
Crash Cycle	*04 Seconds (Red all 4 Directions)*

Pascack Rd North / South

Red	*55 Seconds*
Amber	*04 Seconds*
Green	*30 Seconds*
Crash Cycle	*04 Seconds (Red all 4 Directions)*

Unable to locate any written Timing Directives for this Intersection.

Lane Group	WBL	WBR	WBR2	NBL	NBT	NBR	SBL	SBT	SBR	SEL2	SEL	SER
Lane Configurations												
Traffic Volume (vph)	145	548	4	44	214	143	7	180	356	335	567	16
Future Volume (vph)	145	548	4	44	214	143	7	180	356	335	567	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. 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
Frt		0.850				0.850		0.913			0.994	
Flt Protected	0.950				0.992			0.999		0.950	0.954	
Satd. Flow (prot)	1770	1583	0	0	1848	1583	0	1699	0	1770	1766	0
Flt Permitted	0.950				0.637			0.989		0.950	0.954	
Satd. Flow (perm)	1770	1583	0	0	1187	1583	0	1682	0	1770	1766	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		109				238		110			109	
Link Speed (mph)	30				30			30			30	
Link Distance (ft)	1024				620			766			1271	
Travel Time (s)	23.3				14.1			17.4			28.9	
Peak Hour Factor	0.79	0.94	0.50	0.79	0.73	0.60	0.58	0.83	0.85	0.91	0.95	0.67
Adj. Flow (vph)	184	583	8	56	293	238	12	217	419	368	597	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	184	591	0	0	349	238	0	648	0	368	621	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	12				0			0			24	
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	9	15		9	15		9	15	15	9
Turn Type	Prot	Prot		Perm	NA	Perm	Perm	NA		Prot	Prot	
Protected Phases	3	8			2			6		7	4	
Permitted Phases				2		2	6					
Minimum Split (s)	14.0	38.0		38.0	38.0	38.0	38.0	38.0		14.0	38.0	
Total Split (s)	14.0	38.0		38.0	38.0	38.0	38.0	38.0		14.0	38.0	
Total Split (%)	15.6%	42.2%		42.2%	42.2%	42.2%	42.2%	42.2%		15.6%	42.2%	
Maximum Green (s)	10.0	30.0		30.0	30.0	30.0	30.0	30.0		10.0	30.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	0.0	4.0		4.0	4.0	4.0	4.0	4.0		0.0	4.0	
Lost Time Adjust (s)	0.0	0.0			0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)	4.0	8.0			8.0	8.0		8.0		4.0	8.0	
Lead/Lag	Lead	Lag								Lead	Lag	
Lead-Lag Optimize?	Yes	Yes								Yes	Yes	
Act Effct Green (s)	10.0	30.0			30.0	30.0		30.0		10.0	30.0	
Actuated g/C Ratio	0.11	0.33			0.33	0.33		0.33		0.11	0.33	
v/c Ratio	0.94	0.98			0.88	0.35		1.02		1.88	0.94	
Control Delay	92.3	59.4			54.2	4.6		68.1		439.9	48.5	
Queue Delay	0.0	0.0			0.0	0.0		0.0		0.0	0.0	
Total Delay	92.3	59.4			54.2	4.6		68.1		439.9	48.5	
LOS	F	E			D	A		E		F	D	
Approach Delay	67.3				34.1			68.1			194.2	
Approach LOS	E				C			E			F	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 110
Control Type: Pretimed
Maximum v/c Ratio: 1.88
Intersection Signal Delay: 102.8 — Intersection LOS: F
Intersection Capacity Utilization 97.0% — ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 3: Pascack Road & Washington Avenue

Ø2 (R)	Ø3	Ø4
38 s	14 s	38 s
Ø6 (R)	Ø7	Ø8
38 s	14 s	38 s

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	4	4	2	405	374	1
Future Volume (vph)	4	4	2	405	374	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.932				0.999	
Flt Protected	0.976			0.999		
Satd. Flow (prot)	1694	0	0	1861	1861	0
Flt Permitted	0.976			0.999		
Satd. Flow (perm)	1694	0	0	1861	1861	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	316			84	620	
Travel Time (s)	7.2			1.9	14.1	
Peak Hour Factor	0.50	0.50	0.25	0.77	0.83	0.25
Adj. Flow (vph)	8	8	8	526	451	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	16	0	0	534	455	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
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)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 32.9% ICU Level of Service A
Analysis Period (min) 15

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	4	2	405	374	1
Future Vol, veh/h	4	4	2	405	374	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	50	50	25	77	83	25
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	8	8	526	451	4

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	995	453	455	0	-	0
Stage 1	453	-	-	-	-	-
Stage 2	542	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	271	607	1106	-	-	-
Stage 1	640	-	-	-	-	-
Stage 2	583	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	268	607	1106	-	-	-
Mov Cap-2 Maneuver	268	-	-	-	-	-
Stage 1	634	-	-	-	-	-
Stage 2	583	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.1	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1106	-	372	-	-
HCM Lane V/C Ratio	0.007	-	0.043	-	-
HCM Control Delay (s)	8.3	0	15.1	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	22	0	20	0	387	10	4	374	0
Future Volume (vph)	0	0	0	22	0	20	0	387	10	4	374	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. 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
Frt					0.924			0.996				
Flt Protected					0.979						0.999	
Satd. Flow (prot)	0	1863	0	0	1685	0	0	1855	0	0	1861	0
Flt Permitted					0.979						0.999	
Satd. Flow (perm)	0	1863	0	0	1685	0	0	1855	0	0	1861	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		158			299			392			84	
Travel Time (s)		3.6			6.8			8.9			1.9	
Peak Hour Factor	0.92	0.92	0.92	0.79	0.92	0.56	0.92	0.77	0.63	0.50	0.83	0.92
Adj. Flow (vph)	0	0	0	28	0	36	0	503	16	8	451	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	64	0	0	519	0	0	459	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
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 32.9% ICU Level of Service A
Analysis Period (min) 15

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	0	0	0	22	0	20	0	387	10	4	374	0
Future Vol, veh/h	0	0	0	22	0	20	0	387	10	4	374	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	79	92	56	92	77	63	50	83	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	28	0	36	0	503	16	8	451	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	996	986	451	978	978	511	451	0	0	519	0	0
Stage 1	467	467	-	511	511	-	-	-	-	-	-	-
Stage 2	529	519	-	467	467	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	223	248	608	230	250	563	1109	-	-	1047	-	-
Stage 1	576	562	-	545	537	-	-	-	-	-	-	-
Stage 2	533	533	-	576	562	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	207	246	608	228	248	563	1109	-	-	1047	-	-
Mov Cap-2 Maneuver	207	246	-	228	248	-	-	-	-	-	-	-
Stage 1	576	556	-	545	537	-	-	-	-	-	-	-
Stage 2	499	533	-	570	556	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	17.9	0	0.1
HCM LOS	A	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1109	-	-	-	343	1047	-	-
HCM Lane V/C Ratio	-	-	-	-	0.185	0.008	-	-
HCM Control Delay (s)	0	-	-	0	17.9	8.5	0	-
HCM Lane LOS	A	-	-	A	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	-	0.7	0	-	-

Lane Group	WBL	WBR	WBR2	NBL	NBT	NBR	SBL	SBT	SBR	SEL2	SEL	SER
Lane Configurations												
Traffic Volume (vph)	211	434	12	34	241	214	37	264	170	407	548	37
Future Volume (vph)	211	434	12	34	241	214	37	264	170	407	548	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. 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
Frt		0.850				0.850		0.950			0.986	
Flt Protected	0.950				0.993			0.995		0.950	0.956	
Satd. Flow (prot)	1770	1583	0	0	1850	1583	0	1761	0	1770	1756	0
Flt Permitted	0.950				0.757			0.795		0.950	0.956	
Satd. Flow (perm)	1770	1583	0	0	1410	1583	0	1407	0	1770	1756	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		109				278		36			109	
Link Speed (mph)	30				30			30			30	
Link Distance (ft)	1024				620			766			1271	
Travel Time (s)	23.3				14.1			17.4			28.9	
Peak Hour Factor	0.80	0.88	0.50	0.61	0.76	0.77	0.77	0.93	0.86	0.86	0.97	0.66
Adj. Flow (vph)	264	493	24	56	317	278	48	284	198	473	565	56
Shared Lane Traffic (%)												
Lane Group Flow (vph)	264	517	0	0	373	278	0	530	0	473	621	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	12				0			0			24	
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	9	15		9	15		9	15	15	9
Turn Type	Prot	Prot		Perm	NA	Perm	Perm	NA		Prot	Prot	
Protected Phases	3	8			2			6		7	4	
Permitted Phases				2		2	6					
Minimum Split (s)	14.0	38.0		38.0	38.0	38.0	38.0	38.0		14.0	38.0	
Total Split (s)	14.0	38.0		38.0	38.0	38.0	38.0	38.0		14.0	38.0	
Total Split (%)	15.6%	42.2%		42.2%	42.2%	42.2%	42.2%	42.2%		15.6%	42.2%	
Maximum Green (s)	10.0	30.0		30.0	30.0	30.0	30.0	30.0		10.0	30.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	0.0	4.0		4.0	4.0	4.0	4.0	4.0		0.0	4.0	
Lost Time Adjust (s)	0.0	0.0			0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)	4.0	8.0			8.0	8.0		8.0		4.0	8.0	
Lead/Lag	Lead	Lag								Lead	Lag	
Lead-Lag Optimize?	Yes	Yes								Yes	Yes	
Walk Time (s)		7.0		7.0	7.0	7.0	7.0	7.0			7.0	
Flash Dont Walk (s)		11.0		11.0	11.0	11.0	11.0	11.0			11.0	
Pedestrian Calls (#/hr)		0		0	0	0	0	0			0	
Act Effct Green (s)	10.0	30.0			30.0	30.0		30.0		10.0	30.0	
Actuated g/C Ratio	0.11	0.33			0.33	0.33		0.33		0.11	0.33	
v/c Ratio	1.35	0.86			0.79	0.39		1.08		2.41	0.94	
Control Delay	220.1	38.4			41.6	4.6		91.5		672.7	49.4	
Queue Delay	0.0	0.0			0.0	0.0		0.0		0.0	0.0	
Total Delay	220.1	38.4			41.6	4.6		91.5		672.7	49.4	

Lane Group	WBL	WBR	WBR2	NBL	NBT	NBR	SBL	SBT	SBR	SEL2	SEL	SER
LOS	F	D			D	A		F		F	D	
Approach Delay	99.8				25.8			91.5			318.9	
Approach LOS	F				C			F			F	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 120
Control Type: Pretimed
Maximum v/c Ratio: 2.41
Intersection Signal Delay: 161.0 Intersection LOS: F
Intersection Capacity Utilization 117.5% ICU Level of Service H
Analysis Period (min) 15

Splits and Phases: 3: Pascack Road & Washington Avenue

Ø2 (R)	Ø3	Ø4
38 s	14 s	38 s
Ø6 (R)	Ø7	Ø8
38 s	14 s	38 s

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	9	9	10	538	483	13
Future Volume (vph)	9	9	10	538	483	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.942				0.993	
Flt Protected	0.972			0.998		
Satd. Flow (prot)	1706	0	0	1859	1850	0
Flt Permitted	0.972			0.998		
Satd. Flow (perm)	1706	0	0	1859	1850	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	316			84	620	
Travel Time (s)	7.2			1.9	14.1	
Peak Hour Factor	0.56	0.75	0.36	0.85	0.91	0.46
Adj. Flow (vph)	16	12	28	633	531	28
Shared Lane Traffic (%)						
Lane Group Flow (vph)	28	0	0	661	559	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
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)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 46.3% ICU Level of Service A
Analysis Period (min) 15

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	9	9	10	538	483	13
Future Vol, veh/h	9	9	10	538	483	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	56	75	36	85	91	46
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	12	28	633	531	28

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1234	545	559	0	-	0
Stage 1	545	-	-	-	-	-
Stage 2	689	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	195	538	1012	-	-	-
Stage 1	581	-	-	-	-	-
Stage 2	498	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	187	538	1012	-	-	-
Mov Cap-2 Maneuver	187	-	-	-	-	-
Stage 1	556	-	-	-	-	-
Stage 2	498	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	20.6	0.4	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1012	-	259	-	-
HCM Lane V/C Ratio	0.027	-	0.108	-	-
HCM Control Delay (s)	8.7	0	20.6	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.4	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	10	1	16	5	532	14	14	474	4
Future Volume (vph)	0	0	0	10	1	16	5	532	14	14	474	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. 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
Frt					0.932			0.997			0.998	
Flt Protected					0.980			0.999			0.998	
Satd. Flow (prot)	0	1863	0	0	1701	0	0	1855	0	0	1855	0
Flt Permitted					0.980			0.999			0.998	
Satd. Flow (perm)	0	1863	0	0	1701	0	0	1855	0	0	1855	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		158			299			941			84	
Travel Time (s)		3.6			6.8			21.4			1.9	
Peak Hour Factor	0.92	0.92	0.92	0.50	0.25	0.67	0.31	0.85	0.88	0.58	0.91	0.50
Adj. Flow (vph)	0	0	0	20	4	24	16	626	16	24	521	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	48	0	0	658	0	0	553	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
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 44.1% ICU Level of Service A
Analysis Period (min) 15

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	0	0	0	10	1	16	5	532	14	14	474	4
Future Vol, veh/h	0	0	0	10	1	16	5	532	14	14	474	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	50	25	67	31	85	88	58	91	50
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	20	4	24	16	626	16	24	521	8

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1253	1247	525	1239	1243	634	529	0	0	642	0	0
Stage 1	573	573	-	666	666	-	-	-	-	-	-	-
Stage 2	680	674	-	573	577	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	149	173	552	152	174	479	1038	-	-	943	-	-
Stage 1	505	504	-	449	457	-	-	-	-	-	-	-
Stage 2	441	454	-	505	502	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	133	163	552	145	164	479	1038	-	-	943	-	-
Mov Cap-2 Maneuver	133	163	-	145	164	-	-	-	-	-	-	-
Stage 1	493	486	-	438	446	-	-	-	-	-	-	-
Stage 2	405	443	-	487	484	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	25.2	0.2	0.4
HCM LOS	A	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1038	-	-	-	226	943	-	-
HCM Lane V/C Ratio	0.016	-	-	-	0.212	0.026	-	-
HCM Control Delay (s)	8.5	0	-	0	25.2	8.9	0	-
HCM Lane LOS	A	A	-	A	D	A	A	-
HCM 95th %tile Q(veh)	0	-	-	-	0.8	0.1	-	-

Lane Group	WBL	WBR	WBR2	NBL	NBT	NBR	SBL	SBT	SBR	SEL2	SEL	SER
Lane Configurations												
Traffic Volume (vph)	149	562	4	45	220	147	7	185	367	343	581	16
Future Volume (vph)	149	562	4	45	220	147	7	185	367	343	581	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. 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
Frt		0.850				0.850		0.913			0.994	
Flt Protected	0.950				0.992			0.999		0.950	0.954	
Satd. Flow (prot)	1770	1583	0	0	1848	1583	0	1699	0	1770	1766	0
Flt Permitted	0.950				0.622			0.989		0.950	0.954	
Satd. Flow (perm)	1770	1583	0	0	1159	1583	0	1682	0	1770	1766	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		109				245		110			109	
Link Speed (mph)	30				30			30			30	
Link Distance (ft)	1024				620			766			1271	
Travel Time (s)	23.3				14.1			17.4			28.9	
Peak Hour Factor	0.79	0.94	0.50	0.79	0.73	0.60	0.58	0.83	0.85	0.91	0.95	0.67
Adj. Flow (vph)	189	598	8	57	301	245	12	223	432	377	612	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	189	606	0	0	358	245	0	667	0	377	636	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	12				0			0			24	
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	9	15		9	15		9	15	15	9
Turn Type	Prot	Prot		Perm	NA	Perm	Perm	NA		Prot	Prot	
Protected Phases	3	8			2			6		7	4	
Permitted Phases				2		2	6					
Minimum Split (s)	14.0	38.0		38.0	38.0	38.0	38.0	38.0		14.0	38.0	
Total Split (s)	14.0	38.0		38.0	38.0	38.0	38.0	38.0		14.0	38.0	
Total Split (%)	15.6%	42.2%		42.2%	42.2%	42.2%	42.2%	42.2%		15.6%	42.2%	
Maximum Green (s)	10.0	30.0		30.0	30.0	30.0	30.0	30.0		10.0	30.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	0.0	4.0		4.0	4.0	4.0	4.0	4.0		0.0	4.0	
Lost Time Adjust (s)	0.0	0.0			0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)	4.0	8.0			8.0	8.0		8.0		4.0	8.0	
Lead/Lag	Lead	Lag								Lead	Lag	
Lead-Lag Optimize?	Yes	Yes								Yes	Yes	
Walk Time (s)		7.0		7.0	7.0	7.0	7.0	7.0			7.0	
Flash Dont Walk (s)		11.0		11.0	11.0	11.0	11.0	11.0			11.0	
Pedestrian Calls (#/hr)		0		0	0	0	0	0			0	
Act Effct Green (s)	10.0	30.0			30.0	30.0		30.0		10.0	30.0	
Actuated g/C Ratio	0.11	0.33			0.33	0.33		0.33		0.11	0.33	
v/c Ratio	0.96	1.01			0.93	0.35		1.05		1.92	0.96	
Control Delay	98.1	65.8			62.0	4.6		76.8		459.7	52.9	
Queue Delay	0.0	0.0			0.0	0.0		0.0		0.0	0.0	
Total Delay	98.1	65.8			62.0	4.6		76.8		459.7	52.9	

Lane Group	WBL	WBR	WBR2	NBL	NBT	NBR	SBL	SBT	SBR	SEL2	SEL	SER
LOS	F	E			E	A		E		F	D	
Approach Delay	73.5				38.7			76.8			204.3	
Approach LOS	E				D			E			F	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 110
Control Type: Pretimed
Maximum v/c Ratio: 1.92
Intersection Signal Delay: 110.4 Intersection LOS: F
Intersection Capacity Utilization 98.9% ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 3: Pascack Road & Washington Avenue

Ø2 (R) 38 s	Ø3 14 s	Ø4 38 s
Ø6 (R) 38 s	Ø7 14 s	Ø8 38 s

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	4	4	2	417	385	1
Future Volume (vph)	4	4	2	417	385	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.932				0.999	
Flt Protected	0.976			0.999		
Satd. Flow (prot)	1694	0	0	1861	1861	0
Flt Permitted	0.976			0.999		
Satd. Flow (perm)	1694	0	0	1861	1861	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	316			84	620	
Travel Time (s)	7.2			1.9	14.1	
Peak Hour Factor	0.50	0.50	0.25	0.77	0.83	0.25
Adj. Flow (vph)	8	8	8	542	464	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	16	0	0	550	468	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
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)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 33.5% ICU Level of Service A
Analysis Period (min) 15

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	4	2	417	385	1
Future Vol, veh/h	4	4	2	417	385	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	50	50	25	77	83	25
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	8	8	542	464	4

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1024	466	468	0	-	0
Stage 1	466	-	-	-	-	-
Stage 2	558	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	261	597	1094	-	-	-
Stage 1	632	-	-	-	-	-
Stage 2	573	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	258	597	1094	-	-	-
Mov Cap-2 Maneuver	258	-	-	-	-	-
Stage 1	626	-	-	-	-	-
Stage 2	573	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.5	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1094	-	360	-	-
HCM Lane V/C Ratio	0.007	-	0.044	-	-
HCM Control Delay (s)	8.3	0	15.5	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	22	0	20	0	399	10	4	385	0
Future Volume (vph)	0	0	0	22	0	20	0	399	10	4	385	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. 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
Frt					0.924			0.996				
Flt Protected					0.979						0.999	
Satd. Flow (prot)	0	1863	0	0	1685	0	0	1855	0	0	1861	0
Flt Permitted					0.979						0.999	
Satd. Flow (perm)	0	1863	0	0	1685	0	0	1855	0	0	1861	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		158			299			941			84	
Travel Time (s)		3.6			6.8			21.4			1.9	
Peak Hour Factor	0.92	0.92	0.92	0.79	0.92	0.56	0.92	0.77	0.63	0.50	0.83	0.92
Adj. Flow (vph)	0	0	0	28	0	36	0	518	16	8	464	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	64	0	0	534	0	0	472	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
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 33.5% ICU Level of Service A
Analysis Period (min) 15

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	0	0	0	22	0	20	0	399	10	4	385	0
Future Vol, veh/h	0	0	0	22	0	20	0	399	10	4	385	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	79	92	56	92	77	63	50	83	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	28	0	36	0	518	16	8	464	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1024	1014	464	1006	1006	526	464	0	0	534	0	0
Stage 1	480	480	-	526	526	-	-	-	-	-	-	-
Stage 2	544	534	-	480	480	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	214	239	598	220	241	552	1097	-	-	1034	-	-
Stage 1	567	554	-	535	529	-	-	-	-	-	-	-
Stage 2	523	524	-	567	554	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	199	237	598	218	239	552	1097	-	-	1034	-	-
Mov Cap-2 Maneuver	199	237	-	218	239	-	-	-	-	-	-	-
Stage 1	567	548	-	535	529	-	-	-	-	-	-	-
Stage 2	489	524	-	561	548	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	18.5	0	0.1
HCM LOS	A	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1097	-	-	-	330	1034	-	-
HCM Lane V/C Ratio	-	-	-	-	0.193	0.008	-	-
HCM Control Delay (s)	0	-	-	0	18.5	8.5	0	-
HCM Lane LOS	A	-	-	A	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	-	0.7	0	-	-

Lane Group	WBL	WBR	WBR2	NBL	NBT	NBR	SBL	SBT	SBR	SEL2	SEL	SER
Lane Configurations												
Traffic Volume (vph)	216	445	12	35	248	220	38	272	175	417	562	38
Future Volume (vph)	216	445	12	35	248	220	38	272	175	417	562	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. 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
Frt		0.850				0.850		0.950			0.986	
Flt Protected	0.950				0.993			0.996		0.950	0.957	
Satd. Flow (prot)	1770	1583	0	0	1850	1583	0	1763	0	1770	1758	0
Flt Permitted	0.950				0.748			0.773		0.950	0.957	
Satd. Flow (perm)	1770	1583	0	0	1393	1583	0	1368	0	1770	1758	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		109				286		36			109	
Link Speed (mph)	30				30			30			30	
Link Distance (ft)	1024				620			766			1271	
Travel Time (s)	23.3				14.1			17.4			28.9	
Peak Hour Factor	0.80	0.88	0.50	0.61	0.76	0.77	0.77	0.93	0.86	0.86	0.97	0.66
Adj. Flow (vph)	270	506	24	57	326	286	49	292	203	485	579	58
Shared Lane Traffic (%)												
Lane Group Flow (vph)	270	530	0	0	383	286	0	544	0	485	637	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	12				0			0			24	
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	9	15		9	15		9	15	15	9
Turn Type	Prot	Prot		Perm	NA	Perm	Perm	NA		Prot	Prot	
Protected Phases	3	8			2			6		7	4	
Permitted Phases				2		2	6					
Minimum Split (s)	14.0	38.0		38.0	38.0	38.0	38.0	38.0		14.0	38.0	
Total Split (s)	14.0	38.0		38.0	38.0	38.0	38.0	38.0		14.0	38.0	
Total Split (%)	15.6%	42.2%		42.2%	42.2%	42.2%	42.2%	42.2%		15.6%	42.2%	
Maximum Green (s)	10.0	30.0		30.0	30.0	30.0	30.0	30.0		10.0	30.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	0.0	4.0		4.0	4.0	4.0	4.0	4.0		0.0	4.0	
Lost Time Adjust (s)	0.0	0.0			0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)	4.0	8.0			8.0	8.0		8.0		4.0	8.0	
Lead/Lag	Lead	Lag								Lead	Lag	
Lead-Lag Optimize?	Yes	Yes								Yes	Yes	
Walk Time (s)		7.0		7.0	7.0	7.0	7.0	7.0			7.0	
Flash Dont Walk (s)		11.0		11.0	11.0	11.0	11.0	11.0			11.0	
Pedestrian Calls (#/hr)		0		0	0	0	0	0			0	
Act Effct Green (s)	10.0	30.0			30.0	30.0		30.0		10.0	30.0	
Actuated g/C Ratio	0.11	0.33			0.33	0.33		0.33		0.11	0.33	
v/c Ratio	1.38	0.88			0.83	0.40		1.13		2.47	0.97	
Control Delay	232.1	41.0			44.5	4.6		111.8		699.6	54.3	
Queue Delay	0.0	0.0			0.0	0.0		0.0		0.0	0.0	
Total Delay	232.1	41.0			44.5	4.6		111.8		699.6	54.3	

Lane Group	WBL	WBR	WBR2	NBL	NBT	NBR	SBL	SBT	SBR	SEL2	SEL	SER
LOS	F	D			D	A		F		F	D	
Approach Delay	105.5				27.5			111.8			333.2	
Approach LOS	F				C			F			F	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 120
Control Type: Pretimed
Maximum v/c Ratio: 2.47
Intersection Signal Delay: 171.4 Intersection LOS: F
Intersection Capacity Utilization 120.2% ICU Level of Service H
Analysis Period (min) 15

Splits and Phases: 3: Pascack Road & Washington Avenue

Ø2 (R)	Ø3	Ø4
38 s	14 s	38 s
Ø6 (R)	Ø7	Ø8
38 s	14 s	38 s

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	9	9	10	554	498	13
Future Volume (vph)	9	9	10	554	498	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.942				0.993	
Flt Protected	0.972			0.998		
Satd. Flow (prot)	1706	0	0	1859	1850	0
Flt Permitted	0.972			0.998		
Satd. Flow (perm)	1706	0	0	1859	1850	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	316			84	620	
Travel Time (s)	7.2			1.9	14.1	
Peak Hour Factor	0.56	0.75	0.36	0.85	0.91	0.46
Adj. Flow (vph)	16	12	28	652	547	28
Shared Lane Traffic (%)						
Lane Group Flow (vph)	28	0	0	680	575	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
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)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 47.2% ICU Level of Service A
Analysis Period (min) 15

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	9	9	10	554	498	13
Future Vol, veh/h	9	9	10	554	498	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	56	75	36	85	91	46
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	12	28	652	547	28

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1269	561	575	0	-	0
Stage 1	561	-	-	-	-	-
Stage 2	708	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	186	527	998	-	-	-
Stage 1	571	-	-	-	-	-
Stage 2	488	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	178	527	998	-	-	-
Mov Cap-2 Maneuver	178	-	-	-	-	-
Stage 1	546	-	-	-	-	-
Stage 2	488	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	21.4	0.4	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	998	-	248	-	-
HCM Lane V/C Ratio	0.028	-	0.113	-	-
HCM Control Delay (s)	8.7	0	21.4	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.4	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	10	1	16	5	548	14	14	488	4
Future Volume (vph)	0	0	0	10	1	16	5	548	14	14	488	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. 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
Frt					0.932			0.997			0.998	
Flt Protected					0.980			0.999			0.998	
Satd. Flow (prot)	0	1863	0	0	1701	0	0	1855	0	0	1855	0
Flt Permitted					0.980			0.999			0.998	
Satd. Flow (perm)	0	1863	0	0	1701	0	0	1855	0	0	1855	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		158			299			941			84	
Travel Time (s)		3.6			6.8			21.4			1.9	
Peak Hour Factor	0.92	0.92	0.92	0.50	0.25	0.67	0.31	0.85	0.88	0.58	0.91	0.50
Adj. Flow (vph)	0	0	0	20	4	24	16	645	16	24	536	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	48	0	0	677	0	0	568	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
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 44.9% ICU Level of Service A
Analysis Period (min) 15

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	0	0	0	10	1	16	5	548	14	14	488	4
Future Vol, veh/h	0	0	0	10	1	16	5	548	14	14	488	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	50	25	67	31	85	88	58	91	50
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	20	4	24	16	645	16	24	536	8

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1287	1281	540	1273	1277	653	544	0	0	661	0	0
Stage 1	588	588	-	685	685	-	-	-	-	-	-	-
Stage 2	699	693	-	588	592	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	141	166	542	144	166	467	1025	-	-	927	-	-
Stage 1	495	496	-	438	448	-	-	-	-	-	-	-
Stage 2	430	445	-	495	494	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	125	156	542	137	156	467	1025	-	-	927	-	-
Mov Cap-2 Maneuver	125	156	-	137	156	-	-	-	-	-	-	-
Stage 1	483	478	-	427	437	-	-	-	-	-	-	-
Stage 2	394	434	-	477	476	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	26.5	0.2	0.4
HCM LOS	A	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1025	-	-	-	215	927	-	-
HCM Lane V/C Ratio	0.016	-	-	-	0.223	0.026	-	-
HCM Control Delay (s)	8.6	0	-	0	26.5	9	0	-
HCM Lane LOS	A	A	-	A	D	A	A	-
HCM 95th %tile Q(veh)	0	-	-	-	0.8	0.1	-	-

Lane Group	WBL	WBR	WBR2	NBL	NBT	NBR	SBL	SBT	SBR	SEL2	SEL	SER
Lane Configurations												
Traffic Volume (vph)	152	562	4	47	222	148	7	187	367	343	581	19
Future Volume (vph)	152	562	4	47	222	148	7	187	367	343	581	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. 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
Frt		0.850				0.850		0.913			0.993	
Flt Protected	0.950				0.992			0.999		0.950	0.954	
Satd. Flow (prot)	1770	1583	0	0	1848	1583	0	1699	0	1770	1765	0
Flt Permitted	0.950				0.610			0.989		0.950	0.954	
Satd. Flow (perm)	1770	1583	0	0	1136	1583	0	1682	0	1770	1765	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		109				247		109			109	
Link Speed (mph)	30				30			30			30	
Link Distance (ft)	1024				620			766			1271	
Travel Time (s)	23.3				14.1			17.4			28.9	
Peak Hour Factor	0.79	0.94	0.50	0.79	0.73	0.60	0.58	0.83	0.85	0.91	0.95	0.67
Adj. Flow (vph)	192	598	8	59	304	247	12	225	432	377	612	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	192	606	0	0	363	247	0	669	0	377	640	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	12				0			0			24	
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	9	15		9	15		9	15	15	9
Turn Type	Prot	Prot		Perm	NA	Perm	Perm	NA		Prot	Prot	
Protected Phases	3	8			2			6		7	4	
Permitted Phases				2		2	6					
Minimum Split (s)	14.0	38.0		38.0	38.0	38.0	38.0	38.0		14.0	38.0	
Total Split (s)	14.0	38.0		38.0	38.0	38.0	38.0	38.0		14.0	38.0	
Total Split (%)	15.6%	42.2%		42.2%	42.2%	42.2%	42.2%	42.2%		15.6%	42.2%	
Maximum Green (s)	10.0	30.0		30.0	30.0	30.0	30.0	30.0		10.0	30.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	0.0	4.0		4.0	4.0	4.0	4.0	4.0		0.0	4.0	
Lost Time Adjust (s)	0.0	0.0			0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)	4.0	8.0			8.0	8.0		8.0		4.0	8.0	
Lead/Lag	Lead	Lag								Lead	Lag	
Lead-Lag Optimize?	Yes	Yes								Yes	Yes	
Walk Time (s)		7.0		7.0	7.0	7.0	7.0	7.0			7.0	
Flash Dont Walk (s)		11.0		11.0	11.0	11.0	11.0	11.0			11.0	
Pedestrian Calls (#/hr)		0		0	0	0	0	0			0	
Act Effct Green (s)	10.0	30.0			30.0	30.0		30.0		10.0	30.0	
Actuated g/C Ratio	0.11	0.33			0.33	0.33		0.33		0.11	0.33	
v/c Ratio	0.98	1.01			0.96	0.36		1.06		1.92	0.97	
Control Delay	101.8	65.8			69.2	4.6		78.3		459.7	54.3	
Queue Delay	0.0	0.0			0.0	0.0		0.0		0.0	0.0	
Total Delay	101.8	65.8			69.2	4.6		78.3		459.7	54.3	

Lane Group	WBL	WBR	WBR2	NBL	NBT	NBR	SBL	SBT	SBR	SEL2	SEL	SER
LOS	F	E			E	A		E		F	D	
Approach Delay	74.4				43.0			78.3			204.5	
Approach LOS	E				D			E			F	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 110
Control Type: Pretimed
Maximum v/c Ratio: 1.92
Intersection Signal Delay: 111.8 Intersection LOS: F
Intersection Capacity Utilization 100.7% ICU Level of Service G
Analysis Period (min) 15

Splits and Phases: 3: Pascack Road & Washington Avenue

Ø2 (R)	Ø3	Ø4
38 s	14 s	38 s
Ø6 (R)	Ø7	Ø8
38 s	14 s	38 s

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	5	1	2	417	385	8
Future Volume (vph)	5	1	2	417	385	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.977				0.991	
Flt Protected	0.960			0.999		
Satd. Flow (prot)	1747	0	0	1861	1846	0
Flt Permitted	0.960			0.999		
Satd. Flow (perm)	1747	0	0	1861	1846	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	316			84	620	
Travel Time (s)	7.2			1.9	14.1	
Peak Hour Factor	0.50	0.50	0.25	0.77	0.83	0.25
Adj. Flow (vph)	10	2	8	542	464	32
Shared Lane Traffic (%)						
Lane Group Flow (vph)	12	0	0	550	496	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
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)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 33.5% ICU Level of Service A
Analysis Period (min) 15

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	1	2	417	385	8
Future Vol, veh/h	5	1	2	417	385	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	50	50	25	77	83	25
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	2	8	542	464	32

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1038	480	496	0	-	0
Stage 1	480	-	-	-	-	-
Stage 2	558	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	256	586	1068	-	-	-
Stage 1	622	-	-	-	-	-
Stage 2	573	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	253	586	1068	-	-	-
Mov Cap-2 Maneuver	253	-	-	-	-	-
Stage 1	615	-	-	-	-	-
Stage 2	573	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	18.5	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1068	-	279	-	-
HCM Lane V/C Ratio	0.007	-	0.043	-	-
HCM Control Delay (s)	8.4	0	18.5	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	22	0	20	0	401	10	4	386	0
Future Volume (vph)	0	0	0	22	0	20	0	401	10	4	386	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. 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
Frt					0.924			0.996				
Flt Protected					0.979						0.999	
Satd. Flow (prot)	0	1863	0	0	1685	0	0	1855	0	0	1861	0
Flt Permitted					0.979						0.999	
Satd. Flow (perm)	0	1863	0	0	1685	0	0	1855	0	0	1861	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		158			299			941			84	
Travel Time (s)		3.6			6.8			21.4			1.9	
Peak Hour Factor	0.92	0.92	0.92	0.79	0.92	0.56	0.92	0.77	0.63	0.50	0.83	0.92
Adj. Flow (vph)	0	0	0	28	0	36	0	521	16	8	465	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	64	0	0	537	0	0	473	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
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 33.5% ICU Level of Service A
Analysis Period (min) 15

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	0	0	0	22	0	20	0	401	10	4	386	0
Future Vol, veh/h	0	0	0	22	0	20	0	401	10	4	386	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	79	92	56	92	77	63	50	83	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	28	0	36	0	521	16	8	465	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1028	1018	465	1010	1010	529	465	0	0	537	0	0
Stage 1	481	481	-	529	529	-	-	-	-	-	-	-
Stage 2	547	537	-	481	481	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	212	237	597	218	240	550	1096	-	-	1031	-	-
Stage 1	566	554	-	533	527	-	-	-	-	-	-	-
Stage 2	521	523	-	566	554	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	197	235	597	216	238	550	1096	-	-	1031	-	-
Mov Cap-2 Maneuver	197	235	-	216	238	-	-	-	-	-	-	-
Stage 1	566	548	-	533	527	-	-	-	-	-	-	-
Stage 2	487	523	-	560	548	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	18.6	0	0.1
HCM LOS	A	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1096	-	-	-	328	1031	-	-
HCM Lane V/C Ratio	-	-	-	-	0.194	0.008	-	-
HCM Control Delay (s)	0	-	-	0	18.6	8.5	0	-
HCM Lane LOS	A	-	-	A	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	-	0.7	0	-	-

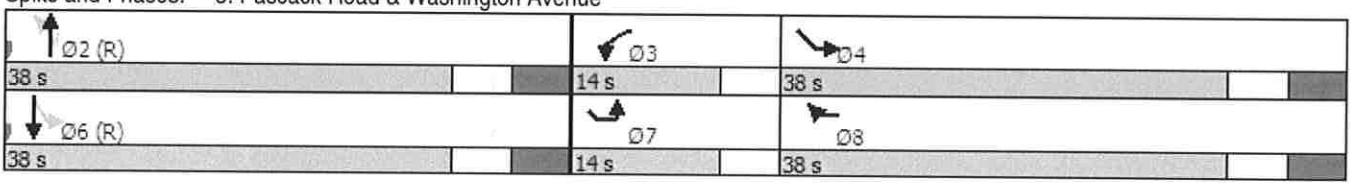
Lane Group	WBL	WBR	WBR2	NBL	NBT	NBR	SBL	SBT	SBR	SEL2	SEL	SER
Lane Configurations												
Traffic Volume (vph)	218	445	12	38	252	224	38	273	175	417	562	41
Future Volume (vph)	218	445	12	38	252	224	38	273	175	417	562	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. 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
Frt		0.850				0.850		0.950			0.985	
Flt Protected	0.950				0.992			0.996		0.950	0.957	
Satd. Flow (prot)	1770	1583	0	0	1848	1583	0	1763	0	1770	1756	0
Flt Permitted	0.950				0.725			0.754		0.950	0.957	
Satd. Flow (perm)	1770	1583	0	0	1350	1583	0	1334	0	1770	1756	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		109				291		36			109	
Link Speed (mph)	30				30			30			30	
Link Distance (ft)	1024				620			766			1271	
Travel Time (s)	23.3				14.1			17.4			28.9	
Peak Hour Factor	0.80	0.88	0.50	0.61	0.76	0.77	0.77	0.93	0.86	0.86	0.97	0.66
Adj. Flow (vph)	273	506	24	62	332	291	49	294	203	485	579	62
Shared Lane Traffic (%)												
Lane Group Flow (vph)	273	530	0	0	394	291	0	546	0	485	641	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	12				0			0			24	
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	9	15		9	15		9	15	15	9
Turn Type	Prot	Prot		Perm	NA	Perm	Perm	NA		Prot	Prot	
Protected Phases	3	8			2			6		7	4	
Permitted Phases				2		2	6					
Minimum Split (s)	14.0	38.0		38.0	38.0	38.0	38.0	38.0		14.0	38.0	
Total Split (s)	14.0	38.0		38.0	38.0	38.0	38.0	38.0		14.0	38.0	
Total Split (%)	15.6%	42.2%		42.2%	42.2%	42.2%	42.2%	42.2%		15.6%	42.2%	
Maximum Green (s)	10.0	30.0		30.0	30.0	30.0	30.0	30.0		10.0	30.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	0.0	4.0		4.0	4.0	4.0	4.0	4.0		0.0	4.0	
Lost Time Adjust (s)	0.0	0.0			0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)	4.0	8.0			8.0	8.0		8.0		4.0	8.0	
Lead/Lag	Lead	Lag								Lead	Lag	
Lead-Lag Optimize?	Yes	Yes								Yes	Yes	
Walk Time (s)		7.0		7.0	7.0	7.0	7.0	7.0			7.0	
Flash Dont Walk (s)		11.0		11.0	11.0	11.0	11.0	11.0			11.0	
Pedestrian Calls (#/hr)		0		0	0	0	0	0			0	
Act Effct Green (s)	10.0	30.0			30.0	30.0		30.0		10.0	30.0	
Actuated g/C Ratio	0.11	0.33			0.33	0.33		0.33		0.11	0.33	
v/c Ratio	1.39	0.88			0.88	0.40		1.17		2.47	0.97	
Control Delay	238.1	41.0			50.7	4.6		124.4		699.6	55.6	
Queue Delay	0.0	0.0			0.0	0.0		0.0		0.0	0.0	
Total Delay	238.1	41.0			50.7	4.6		124.4		699.6	55.6	

Lane Group	WBL	WBR	WBR2	NBL	NBT	NBR	SBL	SBT	SBR	SEL2	SEL	SER
LOS	F	D			D	A		F		F	E	
Approach Delay	108.0				31.1			124.4			333.0	
Approach LOS	F				C			F			F	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 130
Control Type: Pretimed
Maximum v/c Ratio: 2.47
Intersection Signal Delay: 174.3 Intersection LOS: F
Intersection Capacity Utilization 120.5% ICU Level of Service H
Analysis Period (min) 15

Splits and Phases: 3: Pascack Road & Washington Avenue



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	11	3	2	554	498	6
Future Volume (vph)	11	3	2	554	498	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.977				0.997	
Flt Protected	0.960					
Satd. Flow (prot)	1747	0	0	1863	1857	0
Flt Permitted	0.960					
Satd. Flow (perm)	1747	0	0	1863	1857	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	316			84	620	
Travel Time (s)	7.2			1.9	14.1	
Peak Hour Factor	0.56	0.75	0.36	0.85	0.91	0.46
Adj. Flow (vph)	20	4	6	652	547	13
Shared Lane Traffic (%)						
Lane Group Flow (vph)	24	0	0	658	560	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
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)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 40.7% ICU Level of Service A
Analysis Period (min) 15

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	11	3	2	554	498	6
Future Vol, veh/h	11	3	2	554	498	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	56	75	36	85	91	46
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	20	4	6	652	547	13

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1218	554	560	0	-	0
Stage 1	554	-	-	-	-	-
Stage 2	664	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	199	532	1011	-	-	-
Stage 1	575	-	-	-	-	-
Stage 2	512	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	197	532	1011	-	-	-
Mov Cap-2 Maneuver	197	-	-	-	-	-
Stage 1	570	-	-	-	-	-
Stage 2	512	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	23.3	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1011	-	220	-	-
HCM Lane V/C Ratio	0.005	-	0.107	-	-
HCM Control Delay (s)	8.6	0	23.3	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.4	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	10	1	16	5	550	4	14	401	4
Future Volume (vph)	0	0	0	10	1	16	5	550	4	14	401	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. 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
Frt					0.932			0.999			0.998	
Flt Protected					0.980			0.999			0.997	
Satd. Flow (prot)	0	1863	0	0	1701	0	0	1859	0	0	1853	0
Flt Permitted					0.980			0.999			0.997	
Satd. Flow (perm)	0	1863	0	0	1701	0	0	1859	0	0	1853	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		158			299			941			84	
Travel Time (s)		3.6			6.8			21.4			1.9	
Peak Hour Factor	0.92	0.92	0.92	0.50	0.25	0.67	0.31	0.85	0.88	0.58	0.91	0.50
Adj. Flow (vph)	0	0	0	20	4	24	16	647	5	24	441	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	48	0	0	668	0	0	473	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
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 41.2% ICU Level of Service A
Analysis Period (min) 15

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	0	0	0	10	1	16	5	550	4	14	401	4
Future Vol, veh/h	0	0	0	10	1	16	5	550	4	14	401	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	50	25	67	31	85	88	58	91	50
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	20	4	24	16	647	5	24	441	8

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1189	1177	445	1175	1179	650	449	0	0	652	0	0
Stage 1	493	493	-	682	682	-	-	-	-	-	-	-
Stage 2	696	684	-	493	497	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	165	191	613	168	190	469	1111	-	-	935	-	-
Stage 1	558	547	-	440	450	-	-	-	-	-	-	-
Stage 2	432	449	-	558	545	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	147	180	613	161	179	469	1111	-	-	935	-	-
Mov Cap-2 Maneuver	147	180	-	161	179	-	-	-	-	-	-	-
Stage 1	545	528	-	430	440	-	-	-	-	-	-	-
Stage 2	397	439	-	539	526	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	23.5	0.2	0.5
HCM LOS	A	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1111	-	-	-	242	935	-	-
HCM Lane V/C Ratio	0.015	-	-	-	0.198	0.026	-	-
HCM Control Delay (s)	8.3	0	-	0	23.5	9	0	-
HCM Lane LOS	A	A	-	A	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	-	0.7	0.1	-	-