

Traffic Engineering, Transportation Planning & Design

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June 8, 2021

Mr. Ali Elgabroni
Redana Corp.
817 Westchester Avenue
Bronx, New York 10455

(via email: maramarcorp@gmail.com)

**Re: Traffic Engineering Assessment
603 Beverly-Rancocas Road; Block 727, Lot 6
Willingboro Township, Burlington County
SA Project No. 21067**

Dear Mr. Elgabroni:

At your request, Shropshire Associates LLC prepared this Traffic Engineering Assessment report to support application to Willingboro Township and Burlington County for the proposed redevelopment of a former firehouse. The 0.78-acre site is located at 603 Beverly-Rancocas Road on Block 727, Lot 6 in the Tertiary Business (B-3) Zone. The site is located on the northwest corner of Beverly-Rancocas Road, County Route 626 (CR 626) and Garfield Drive and contains a two-story 3,228-square foot (SF) former firehouse building. The proposal is to retain and reconfigure the structure for use as a fast-food restaurant with drive-thru. Access to the existing site along Beverly-Rancocas Road and Garfield Drive will be reconfigured to be consistent with the restaurant's circulation aisles and parking areas. The purpose of this traffic engineering assessment is to review existing traffic conditions in the vicinity of the site, determine site trips generated by the proposed development and analyze the impact of the fast-food restaurant with drive-thru on the study intersections and site driveways.

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.

Roadways

Beverly-Rancocas Road (CR 626) is a four-lane median-divided roadway that is classified as an Urban Principal Arterial and is under the jurisdiction of Burlington County. Beverly-Rancocas Road has a posted speed limit of 40 MPH west of Garfield Drive and 45 MPH east of Garfield Drive. Beverly-Rancocas Road has a cartway width of 80 feet (FT), consisting of four (4) 11 FT travel lanes (two in each direction), 10 FT shoulders in each direction, and a 16 FT grass median. For the purpose of this study, Beverly-Rancocas Road is assumed to extend in a general east-west direction.



Garfield Drive is a two-lane undivided local roadway that is under the jurisdiction of Willingboro Township. Garfield Drive has a posted speed limit of 40 MPH and a cartway width of 32 FT. For the purpose of this study, Garfield Drive is assumed to extend in a general north-south direction.

Intersections

The four-legged intersection of **Beverly-Rancocas Road and Garfield Drive** is controlled by a three-phase semi-actuated traffic signal with a variable cycle length. The eastbound and westbound Beverly-Rancocas Road approaches include a dedicated left-turn lane, two (2) through lanes, and a dedicated right-turn lane. The northbound and southbound Garfield Drive approaches consist of a dedicated left-turn lane and a shared through/right-turn lane.

The T-type intersection of **Garfield Drive and the Commercial Driveway** is stop-controlled along the westbound commercial driveway approach. The northbound and southbound Garfield Drive approaches consist of a single lane shared for all permitted movements. The westbound Commercial driveway has one (1) lane for all 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 in March of 2021 during the weekday morning peak period (7:00 to 9:00 AM), weekday afternoon peak period (4:00 to 6:00 PM), and Saturday midday peak period (11:00 AM to 2:00 PM). A summary of the traffic counts can be found in the appendix to this assessment and the existing peak hour volumes are illustrated on Figure 1.

Future Conditions

As indicated above, the proposal is for the reconfiguration of the former 3,228 SF firehouse to be a fast-food restaurant with a drive-thru lane. The traffic resulting from the proposed development will not affect the adjacent roadway network until the development is fully built-out and occupied, which is anticipated to be by the year 2023. It can be expected that the traffic volumes along the adjacent roadways will increase as a result of general area traffic growth. Based on the *Annual Background Growth Table* prepared by NJDOT, a 1.00% annual traffic growth will occur along the adjacent roadway network in the vicinity of the site. The projected 2020 No-Build volumes are illustrated on Figure 2.

Trip Generation

The amount of traffic generated by the proposed 3,228 SF fast-food restaurant with a drive-thru lane can best be determined by using data published by the Institute of Transportation Engineers (ITE). The ITE has compiled data from thousands of studies for various land uses, independent variables, and study periods and published results in *Trip Generation, 10th Edition*. The proposed development is similar to ITE Land Use 934: Fast-Food Restaurant with Drive-Through Window.



Traffic to be generated by the proposed fast-food restaurant will be a combination of new trips and pass-by trips to the roadway system. A new trip is a trip whose primary purpose for being on the roadway is to patronize the development. A pass-by trip consists of a motorist who is already on the roadway with another trip purpose (i.e. home/work trip) and stops into the facility on their way to their intended destination.

Based upon the current ITE data, the fast-food restaurant site traffic will have an average pass-by percentage of 49% during the weekday AM peak hour, and 50% during the weekday PM and Saturday midday peak hours. The total amount of traffic generated by the proposed development is summarized below in Table 1.

Table 1 ITE Trip Generation – Total Trips									
Development	AM Peak Hour			PM Peak Hour			Sat Peak Hour		
	In	Out	Total	In	Out	Total	In	Out	Total
New Trips	33	31	64	29	25	54	46	43	89
Pass-By Trips	33	33	66	26	26	52	44	44	88
Total Trips	66	64	130	55	51	106	90	87	177

The traffic to be generated by the proposed fast-food restaurant development must then be distributed to the adjacent roadway network in a manner in which we can reasonably expect the employees and patrons to travel. The new site traffic was assigned to the roadway network based on the existing traffic patterns along the adjacent roadway network, see new Trip Distribution (Figure 3) and pass-by site Trip Distribution (Figure 4). The resulting new, pass-by and total Site Traffic assignments are illustrated in Figures 5, 6, and 7, respectively. The total site traffic for the fast-food restaurant development (Figure 7) was then added to the No-Build volumes to project the Build volumes, which are illustrated in Figure 8.

Operational Analysis

In order to measure the quality of the traffic flow for the adjacent roadways and intersections, capacity analyses for the study intersections have been completed based upon the methods outlined in the *2010 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 LOS A representing the best operating conditions and LOS F representing the worst operating conditions.

The LOS 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 determination for the LOS for an unsignalized intersection is based upon 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 Level of Service criteria for signalized and unsignalized intersections is summarized below in Table 2.

Table 2 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 existing and future operating conditions at the study intersections were evaluated using the above-described methodology and the latest Synchro computer software package. The Existing, future No-Build and future Build levels are described below, with the detailed Synchro worksheets attached for your review. The existing, No-Build, and Build scenario levels of service are shown on attached Figures 9, 10, and 11, respectively.

Intersections

Beverly-Rancocas Road (CR 626) and Garfield Drive Intersection

Under Existing conditions, the Beverly-Rancocas Road and Garfield Drive signalized intersection operates at an overall LOS C during the AM peak hour, LOS B during the PM peak hour, and LOS C during the Saturday midday peak hour. All individual movements operate at a LOS D or better during all peak hours, with the exception of the southbound Garfield Drive left-turn movements, which operate at a LOS E during the PM and Saturday midday peak hours.

Under the future No-Build conditions, the Beverly-Rancocas Road and Garfield Drive signalized intersection continues to operate at an overall LOS C during the AM peak hour, LOS B during the PM peak hour, and LOS C during the Saturday midday peak hour. All individual movements continue to operate at existing levels of service, with the exception of the westbound Beverly-Rancocas Road through movements, which will operate at a LOS B during the Saturday midday peak hour.

Under the future Build conditions, the Beverly-Rancocas Road and Garfield Drive signalized intersection continues to operate at an overall LOS C during the AM peak hour, LOS B during the PM peak hour, and LOS C during the Saturday midday peak hour. All individual movements continue to operate at No-Build levels of service, with the exception of the westbound Beverly-Rancocas Road through movements, which will operate at a LOS C during the AM peak hour, as well as the southbound Garfield Drive left-turn movements, which will operate at a LOS F during the Saturday midday peak hour.

Future site traffic will account for 2.7%, 1.7%, and 3.0% of the total future Build volumes at the Beverly-Rancocas Road and Garfield Drive signalized intersection during the AM, PM, and Saturday midday peak hours, respectively.



Garfield Drive and Commercial Driveway Intersection

Under Existing conditions, the westbound Commercial Driveway stop-controlled approach operates at a LOS B during all peak hours. The southbound Garfield Drive conflicting left-turn movements operate at a LOS A during all peak hours.

Under the future No-Build and Build conditions, all individual movements at the Garfield Drive and Commercial Driveway stop-controlled intersection continue to operate at Existing levels of service.

Beverly-Rancocas Road (CR 626) and Site Driveway Intersection

Under the future Build conditions, a right-in/right-out only driveway is proposed along westbound Beverly-Rancocas Road, just west of its intersection with Garfield Drive. The southbound site driveway stop-controlled approach will operate at a LOS B during all peak hours.

Garfield Drive and Site Driveway Intersection

Under the future Build conditions, a full-movement driveway is proposed along southbound Garfield Drive, at approximately 160 FT north of the stop bar at Beverly-Rancocas Road intersection. The eastbound site driveway stop-controlled approach will operate at a LOS B during all peak hours. The northbound Garfield Drive conflicting left-turn movements will operate at a LOS A during all peak hours.

Site Layout

The proposed development will be located on the northwest corner of the existing signalized intersection of Beverly-Rancocas Road (CR 626) and Garfield Drive. The site includes a former firehouse that will be converted into a fast-food restaurant with drive-thru. The existing site, as configured for a firehouse has an 80 FT wide driveway along westbound Beverly-Rancocas Road and a 120 FT wide driveway along southbound Garfield Drive. The site is almost fully paved. The site layout will be reconfigured to provide parking and the drive-thru. The access driveways will be narrowed and each will allow both ingress and egress movements. The Rancocas-Beverly driveway will be right-in/right-out only and be approximately 120 FT west of the intersection. The Garfield driveway will be full movement and be approximately 160 FT north of the intersection.

A total of 20 on-site parking spaces are provided including one (1) handicap parking space where 15 are required by Willingboro ordinance. The drive-thru will have two (2) menu boards, but one lane for transactions. A bypass lane is provided to allow circulation around the building which is one-way counter-clockwise. Circulation aisles for access to parking are a minimum of 25 FT for two-way travel. Sidewalk is available along the site's two (2) roadway frontages providing access to the signalized intersection which has crosswalks and signalization for pedestrian crossing.



Conclusion

The proposed 3,228 SF fast-food restaurant with a drive-thru lane will have two (2) access driveways, one (1) along westbound Beverly Rancocas Road (CR 626) and one (1) along southbound Garfield Drive. The right-in/right out driveway along Beverly Rancocas Road and the full movement driveway along southbound Garfield Drive driveways allow for safe and efficient access to onsite circulation, parking and the drive-thru lane. Site generated traffic will not significantly impact the adjacent roadway network. Based on analysis of the study intersections traffic resulting from the proposed development can be safely and efficiently be accommodated during the peak hours based on the following:

- ITE trip generation rates indicate the proposed development will generate new trips in the peak hours as follows: 64 AM peak hour trips, 54 PM peak hour trips, and 89 Saturday midday peak hour new trips.
- Under the future Build conditions, the Beverly-Rancocas Road and Garfield Drive signalized intersection will continue to operate at an overall LOS C during the AM peak hour, LOS B during the PM peak hour, and LOS C during the Saturday midday peak hour. Site traffic will account for 2.7%, 1.7%, and 3.0% of the total future Build volumes at the Beverly-Rancocas Road and Garfield Drive signalized intersection during the AM, PM, and Saturday midday peak hours; respectively.
- Access to the proposed development will be provided via a new right-in/right-out only driveway along westbound Beverly-Rancocas Road and a new full-movement driveway along southbound Garfield Drive.
- The two (2) site driveways will operate at LOS B or better for all stop-controlled and conflicting movements.
- A total of 20 on-site parking spaces and a drive-thru lane with two (2) menu boards are provided to accommodate restaurant patrons.
- The site layout including access, circulation and parking meets applicable traffic engineering standards and Willingboro Ordinance requirements.

Please contact me if you have any questions.

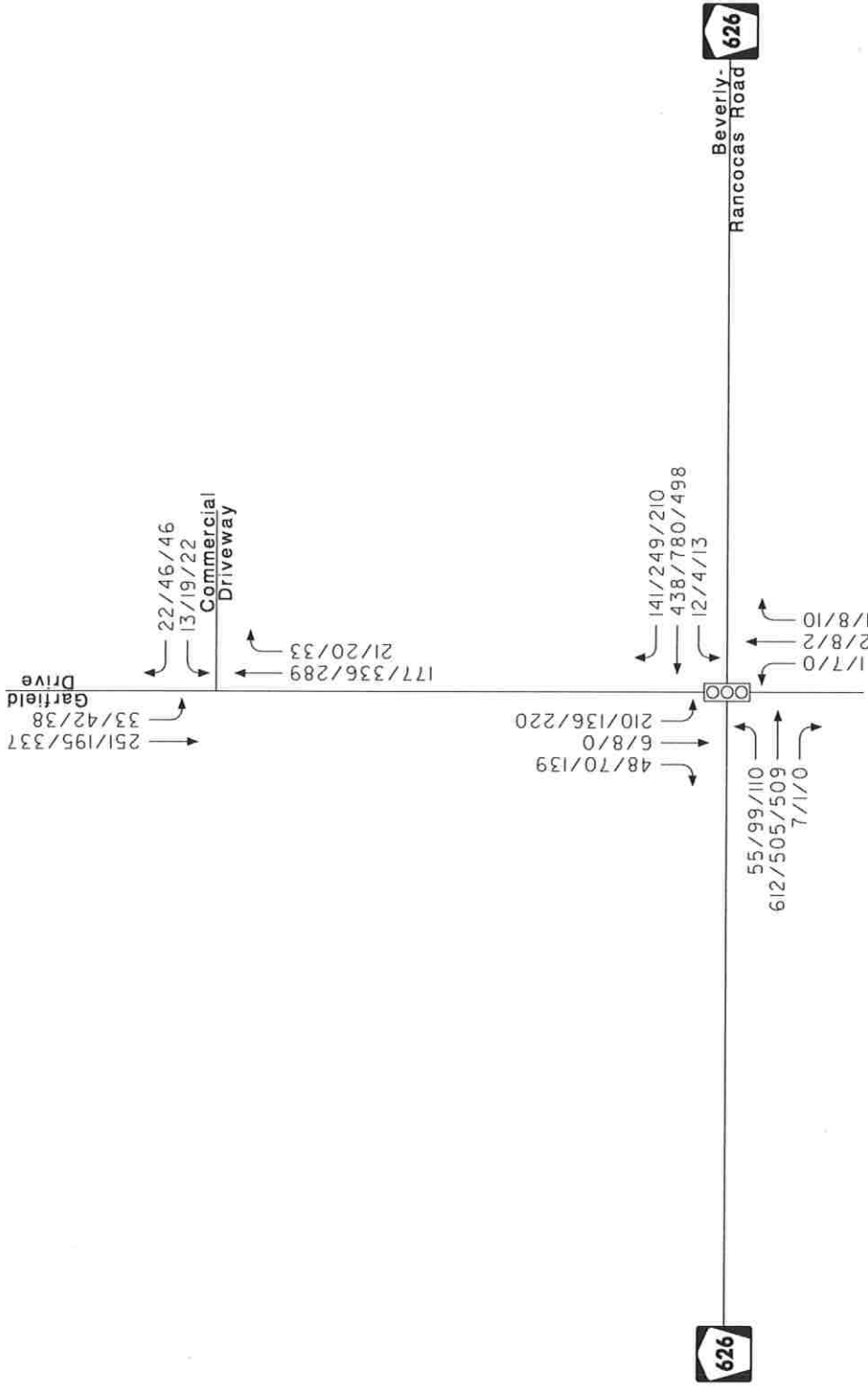
Sincerely,
Shropshire Associates LLC

A handwritten signature in black ink that reads 'A Andrew Feranda'. The signature is written in a cursive, flowing style.

A Andrew Feranda, PE, PTOE, CME
Professional Engineer
N.J. License No. #42893
AAF/jab
Attachments

cc: Cynthia Levin, Esq.
Marc Leber, PE, PP

(via e-mail: CLevin@GersteinGrayson.com)
(via e-mail: MLeber@EastPointEng.com)



603 Beverly Rancocas Road

Willingboro Township, Burlington County, NJ

May 2021

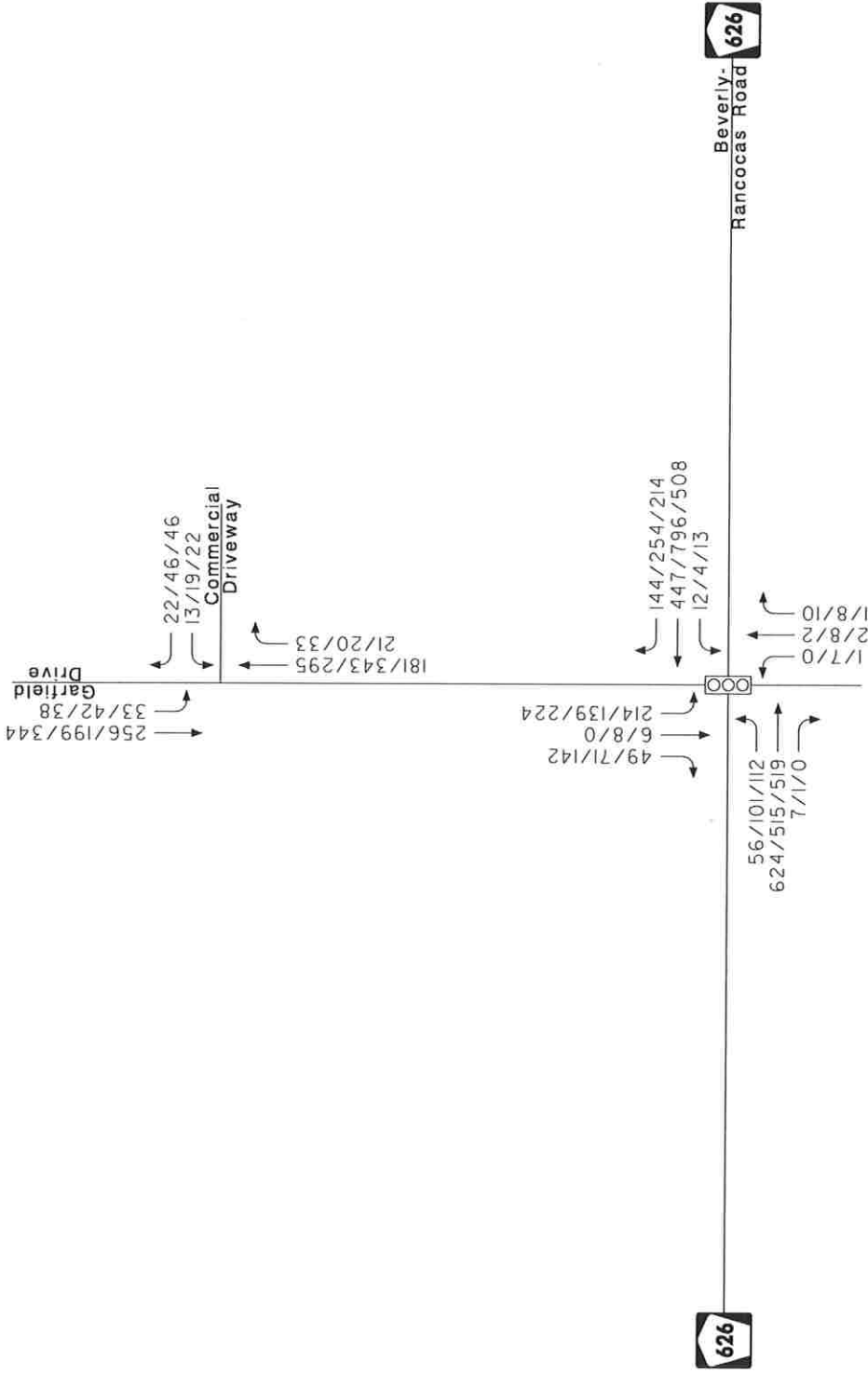


TRAFFIC SIGNAL

AM/PM/SAT PEAK HOUR

SA Project No. 21067

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603 Beverly Rancocas Road

Willingboro Township, Burlington County, NJ

May 2021



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AM/PM/SAT PEAK HOUR

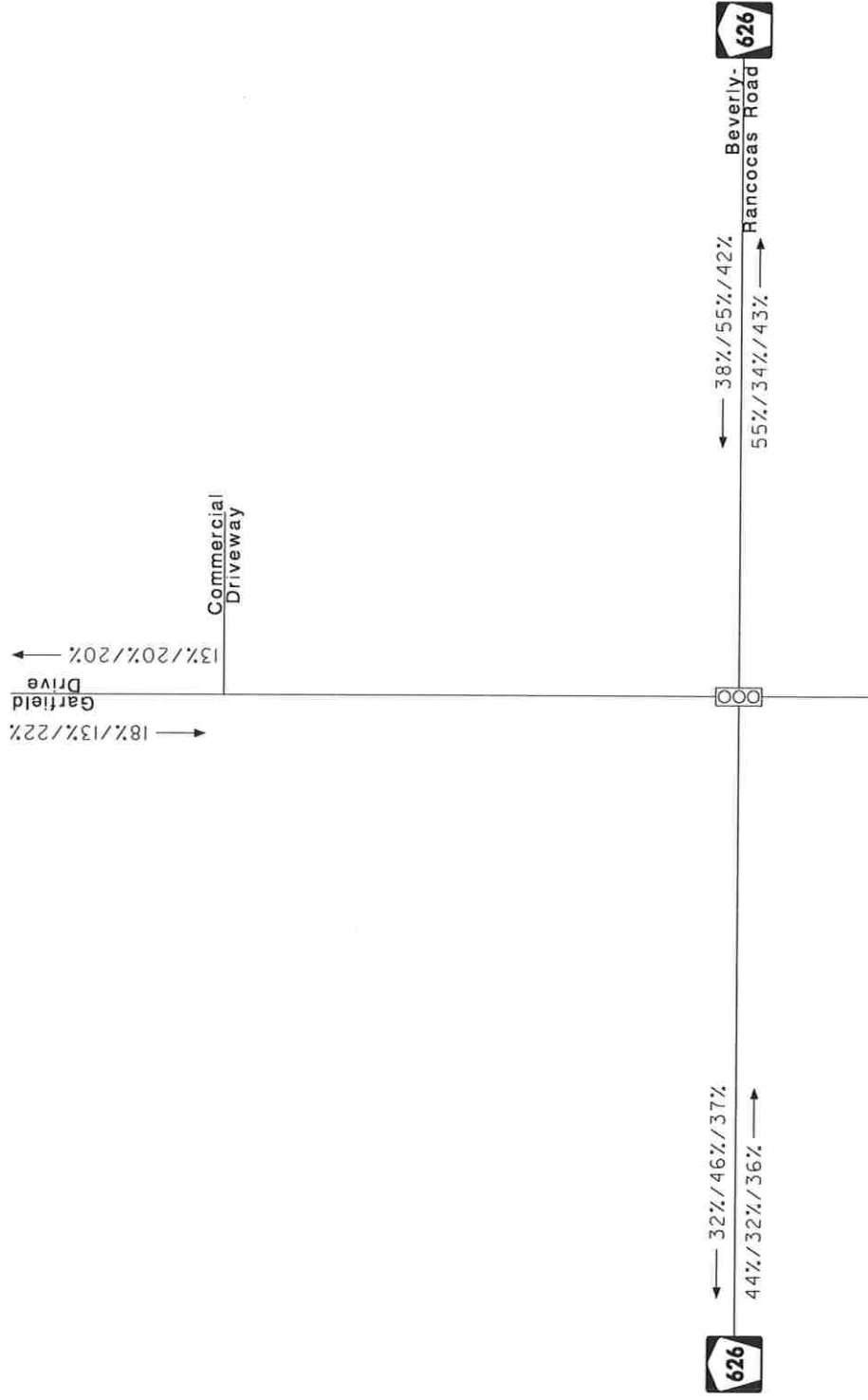
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FIGURE 3
 TRIP DISTRIBUTION
 (New)



603 Beverly Rancocas Road

Willingboro Township, Burlington County, NJ

May 2021

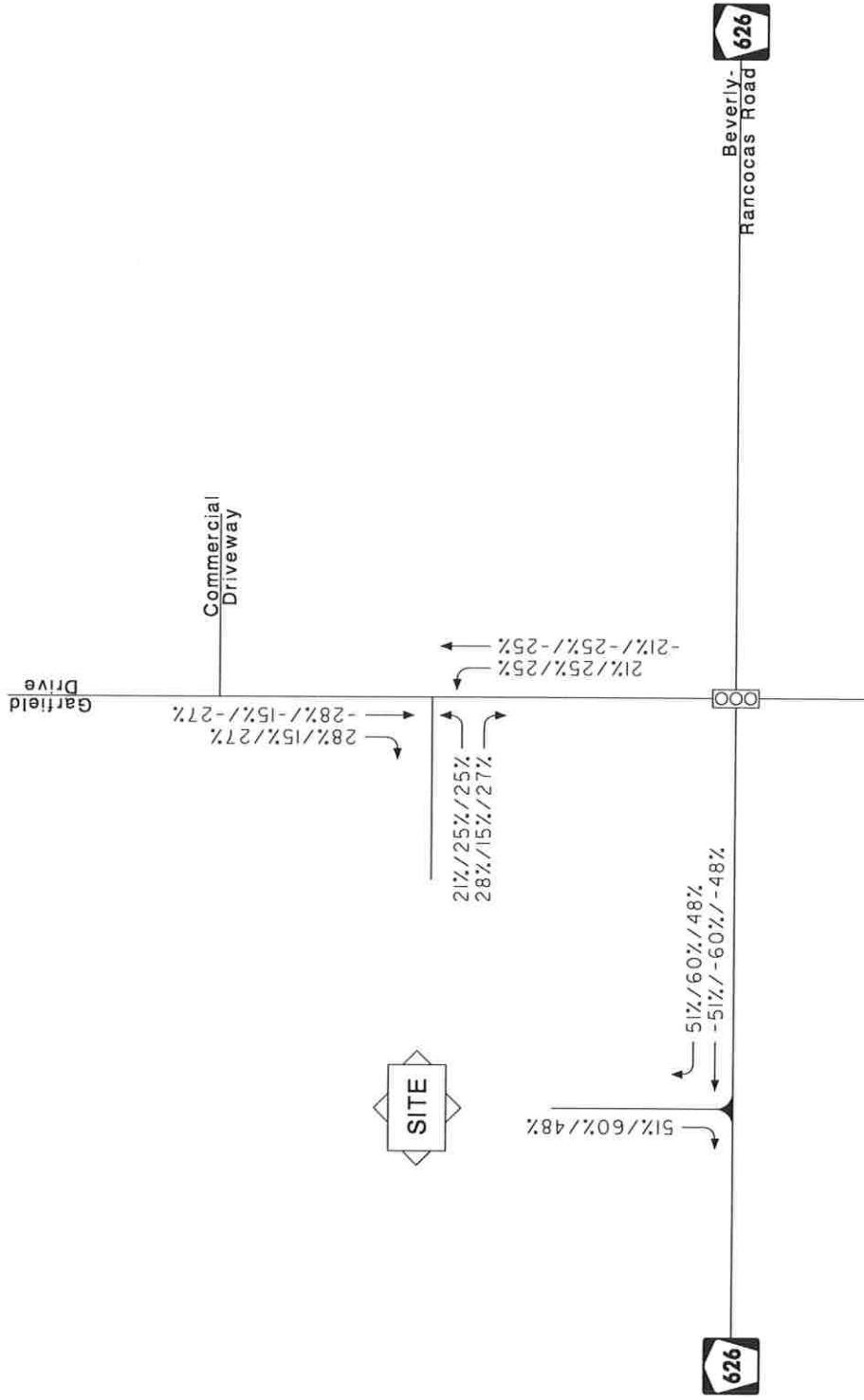


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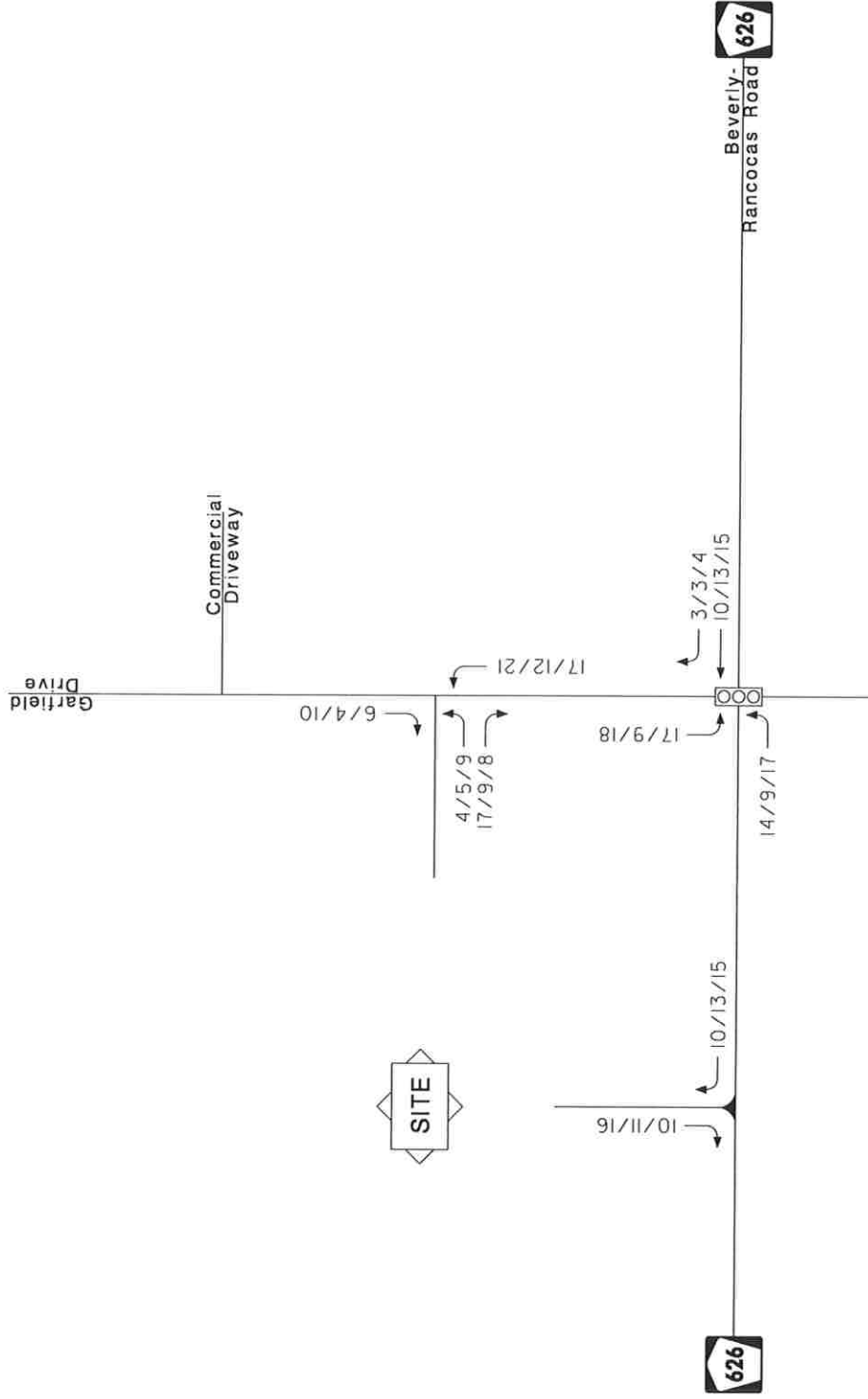
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FIGURE 5
 SITE TRAFFIC
 (New)



603 Beverly Rancocas Road

Willingboro Township, Burlington County, NJ
 May 2021

TRAFFIC SIGNAL
 AM/PM/SAT PEAK HOUR

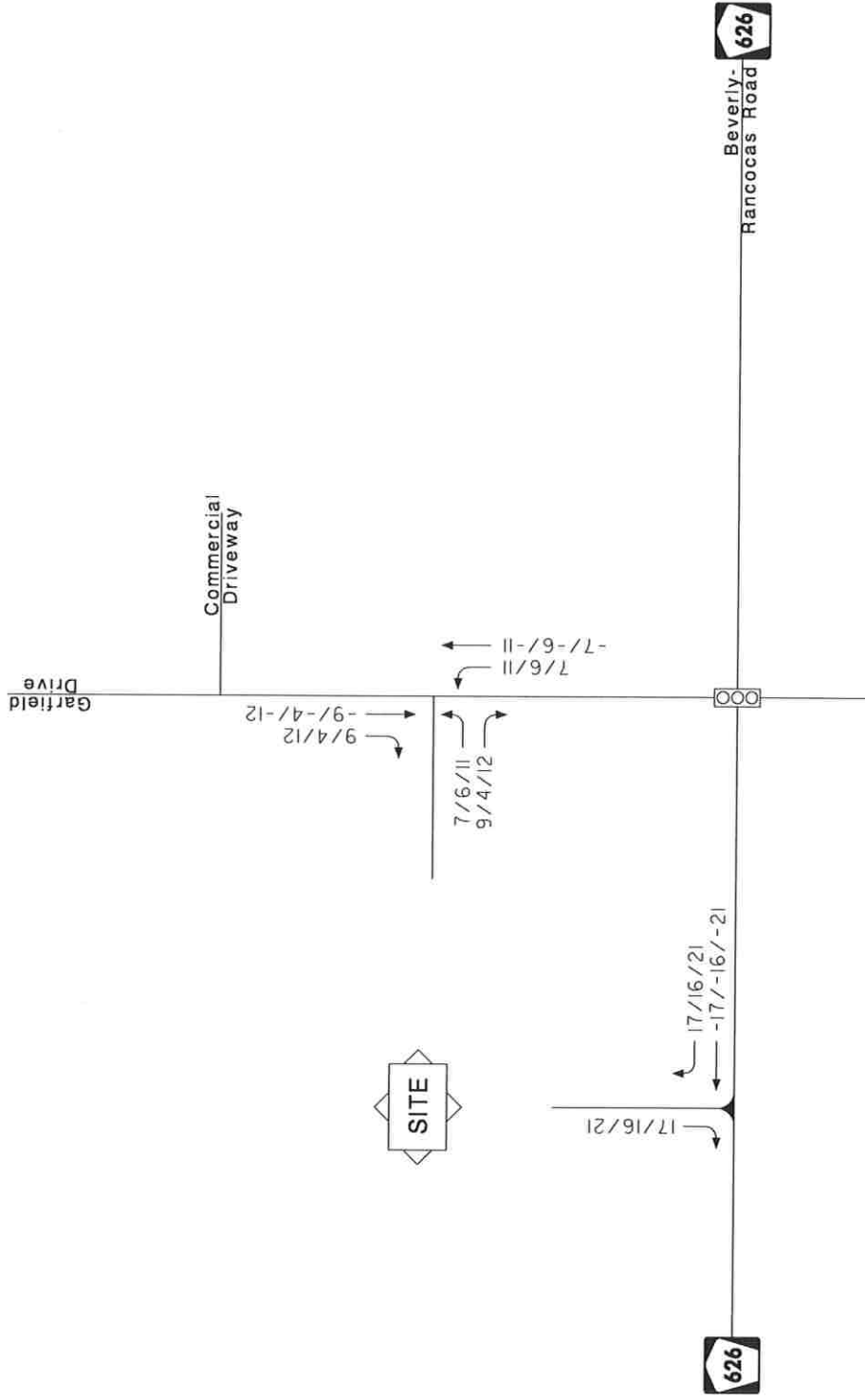
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FIGURE 6
 SITE TRAFFIC
 (Pass-By)



603 Beverly Rancocas Road

Willingboro Township, Burlington County, NJ

May 2021

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AM/PM/SAT PEAK HOUR

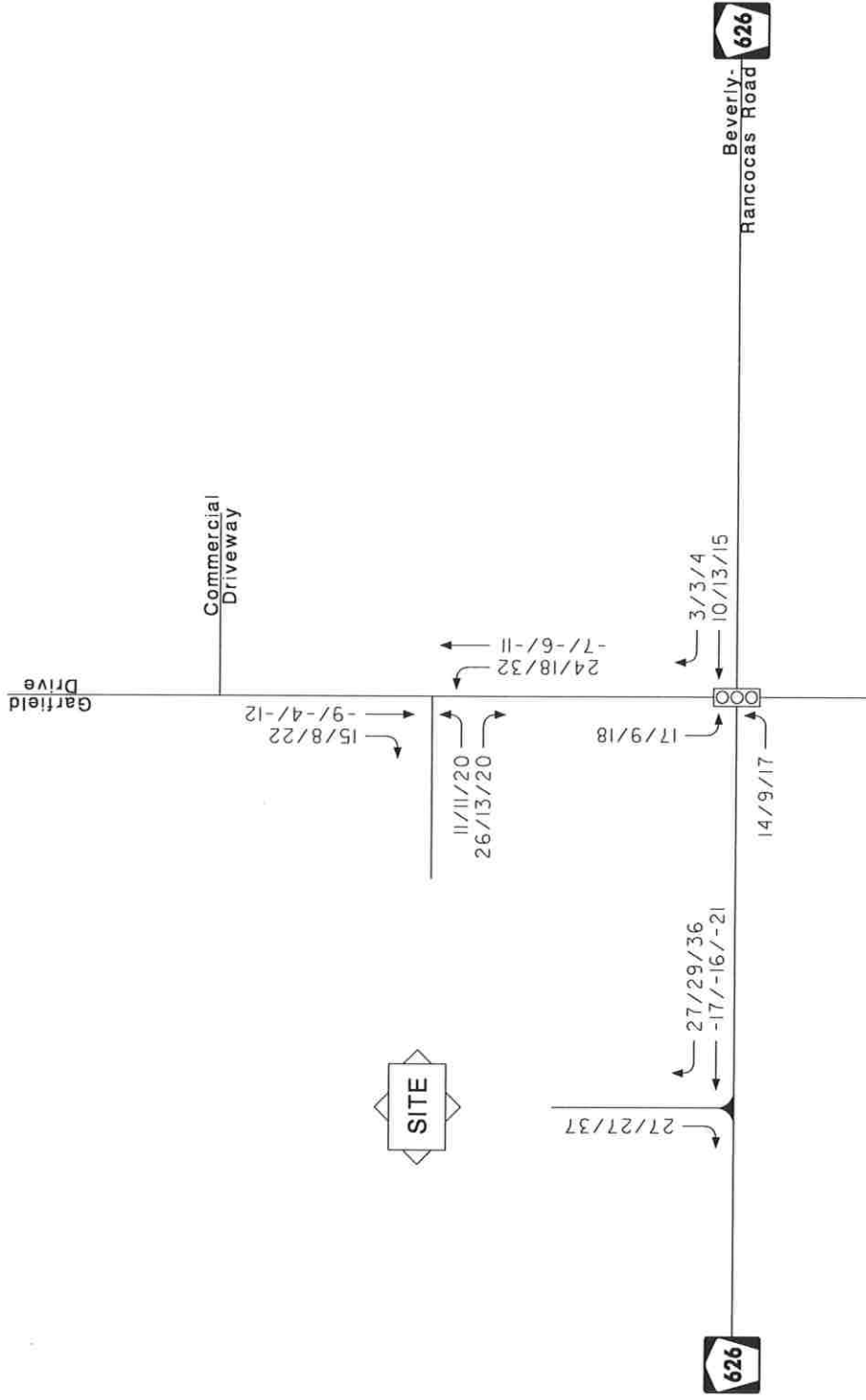
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FIGURE 7
 SITE TRAFFIC
 (Total)



603 Beverly Rancocas Road

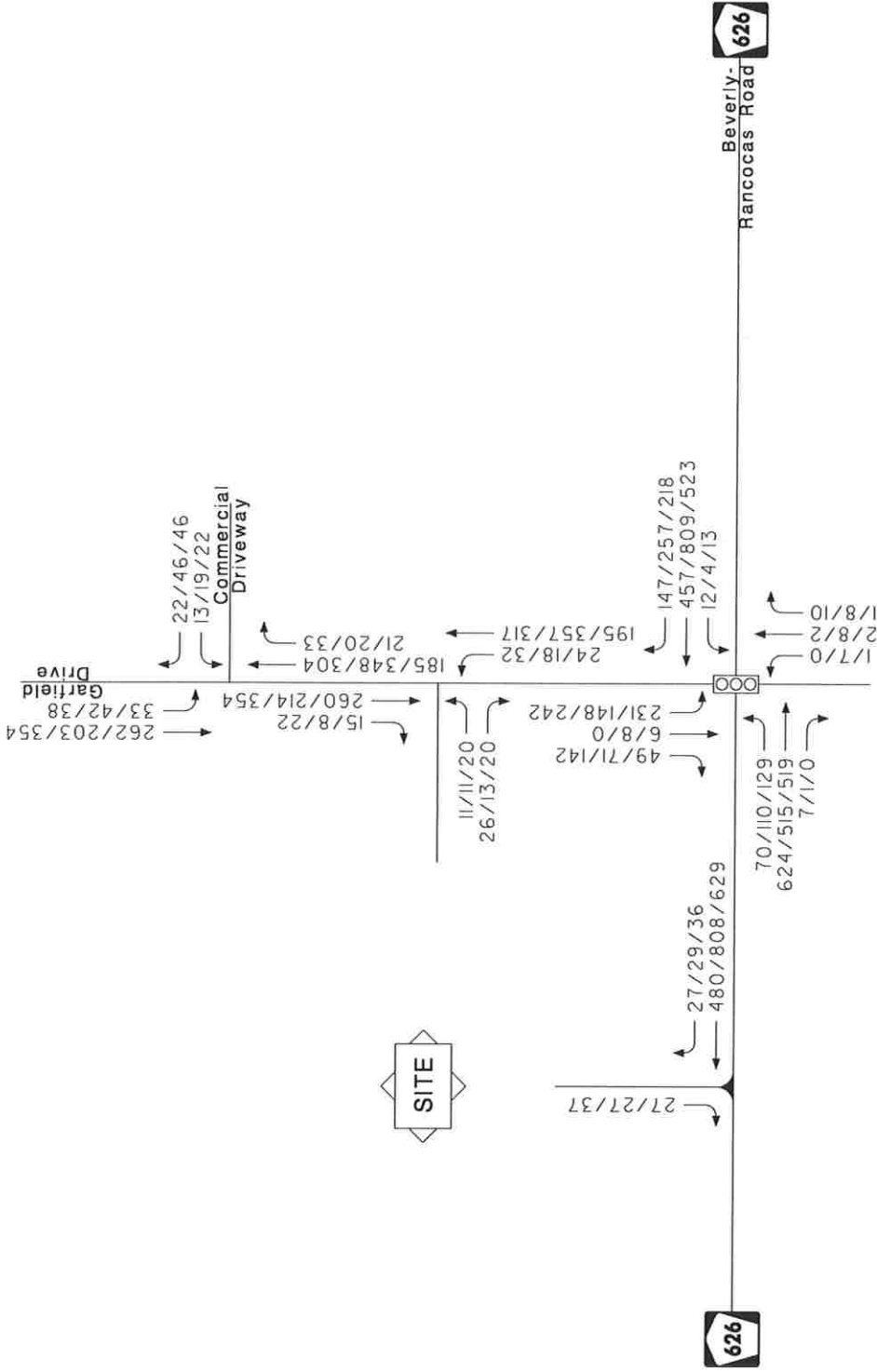
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 AM/PM/SAT PEAK HOUR

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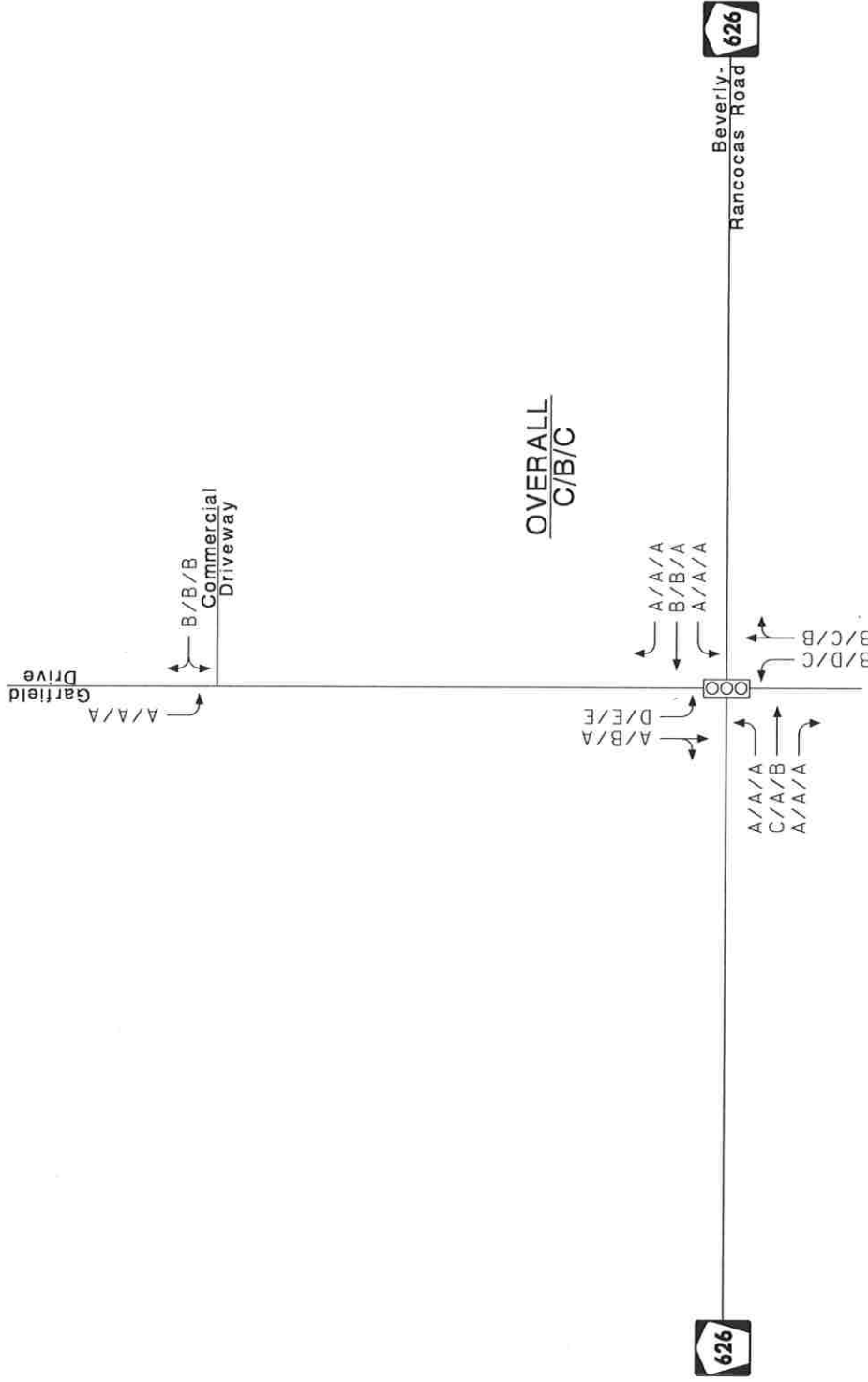


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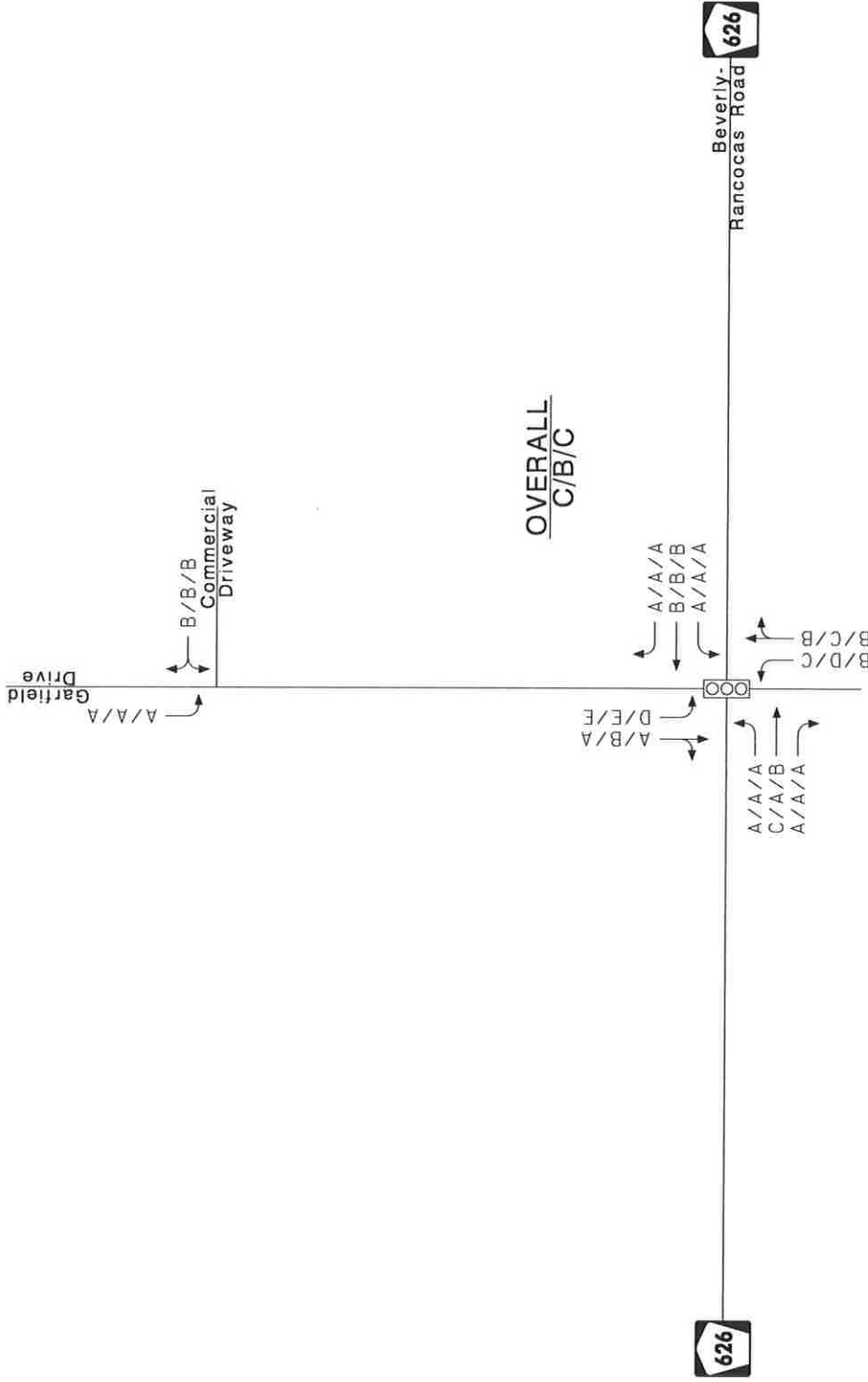
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Willingboro Township, Burlington County, NJ

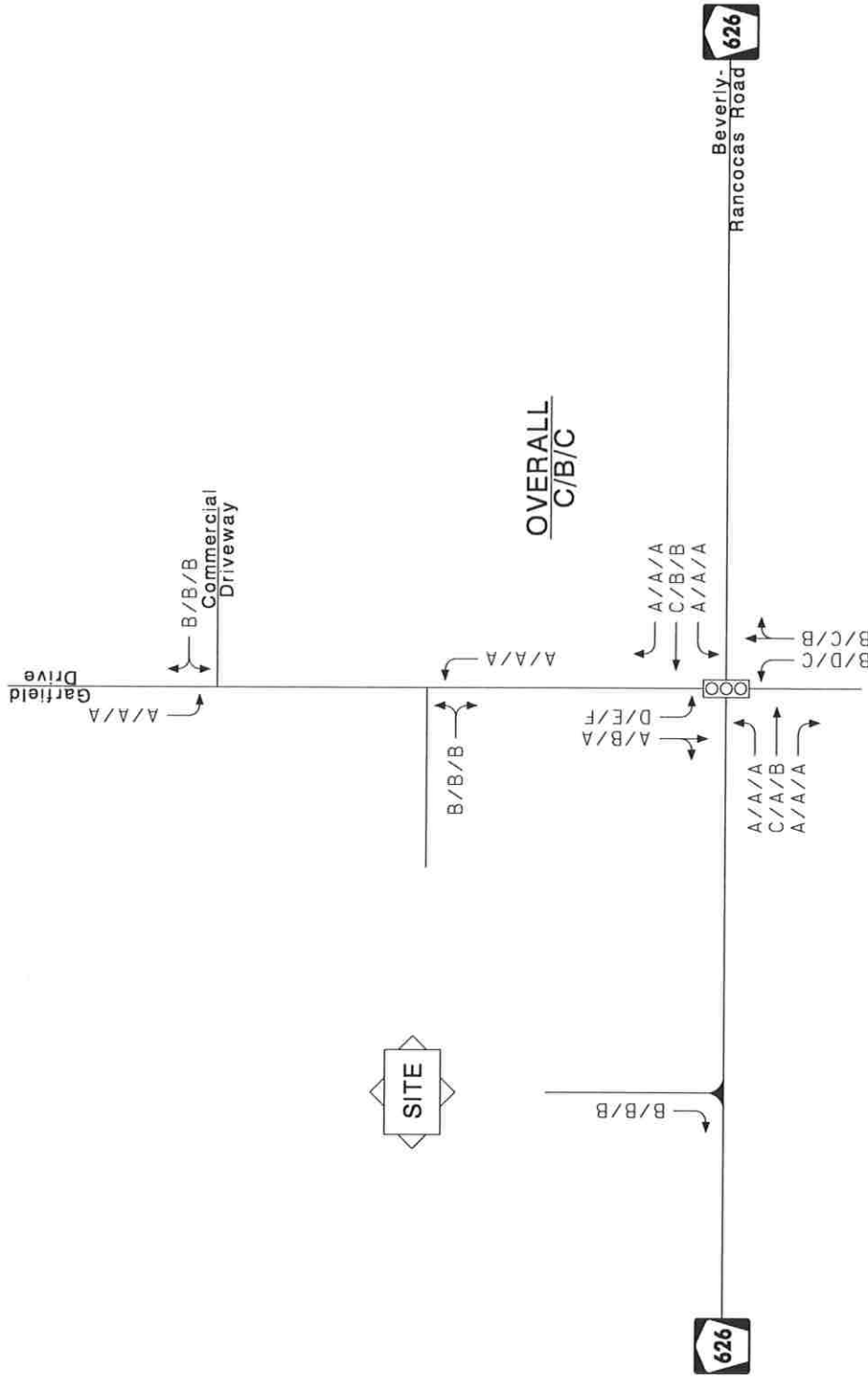
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603 Beverly Rancocas Road

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N/S Route: Garfield Dr./Business Entrance
E/W Route: Beverly Rancocas Rd.
Willingboro Township/Burlington County/NJ
Tues/Clear/EM/D4-3142

File Name : 21067001
Site Code : 21067001
Start Date : 3/23/2021
Page No : 1

Groups Printed- Unshifted - Trailers

Start Time	Garfield Dr. Southbound					Beverly Rancocas Rd. Westbound					Business Entrance Northbound					Beverly Rancocas Rd. Eastbound					Int. Total
	Right	Thru	Left	Rt on Red	App Total	Right	Thru	Left	Rt on Red	App Total	Right	Thru	Left	Rt on Red	App Total	Right	Thru	Left	Rt on Red	App Total	
07:00 AM	2	0	37	4	43	24	68	1	10	103	1	0	0	0	1	0	128	14	0	142	289
07:15 AM	3	0	48	3	54	16	95	6	16	133	0	0	0	0	0	0	140	10	0	150	337
07:30 AM	2	1	51	8	62	32	130	3	13	178	0	0	0	0	0	3	189	14	0	206	446
07:45 AM	10	3	64	8	85	29	116	2	9	156	0	0	0	0	0	2	150	20	0	172	413
Total	17	4	200	23	244	101	409	12	48	570	1	0	0	0	1	5	607	58	0	670	1485
08:00 AM	5	2	47	9	63	21	97	1	5	124	1	2	1	0	4	1	133	11	1	146	337
08:15 AM	4	1	41	9	55	19	90	4	4	117	1	1	0	1	3	0	135	13	1	149	324
08:30 AM	6	0	43	9	58	23	68	1	9	101	0	1	1	0	2	2	111	13	1	127	288
08:45 AM	10	0	42	14	66	33	96	4	1	134	0	4	0	1	5	2	111	16	0	129	334
Total	25	3	173	41	242	96	351	10	19	476	2	8	2	2	14	5	490	53	3	551	1283
*** BREAK ***																					
04:00 PM	13	0	47	10	70	30	182	0	14	226	3	0	0	0	3	0	110	20	0	130	429
04:15 PM	4	0	45	4	53	36	199	1	2	238	0	0	0	0	0	1	140	23	0	164	455
04:30 PM	12	4	31	10	57	43	209	0	33	285	4	0	2	0	6	0	117	24	0	141	489
04:45 PM	8	0	29	2	39	36	201	0	16	253	0	2	3	0	5	0	128	23	0	151	448
Total	37	4	152	26	219	145	791	1	65	1002	7	2	5	0	14	1	495	90	0	586	1821
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05:15 PM	11	2	43	8	64	43	202	2	32	279	2	4	2	0	8	0	134	20	0	154	505
05:30 PM	4	0	51	4	59	34	170	2	18	224	3	4	2	1	10	0	114	19	0	133	426
05:45 PM	8	0	44	6	58	52	178	3	12	245	1	2	0	0	3	0	113	26	0	139	445
Total	33	4	171	27	235	149	718	9	88	964	8	12	4	1	25	1	487	97	0	585	1809
Grand Total	112	15	696	117	940	491	2269	32	220	3012	18	22	11	3	54	12	2079	298	3	2392	6398
Apprch %	11.9	1.6	74	12.4		16.3	75.3	1.1	7.3		33.3	40.7	20.4	5.6		0.5	86.9	12.5	0.1		
Total %	1.8	0.2	10.9	1.8	14.7	7.7	35.5	0.5	3.4	47.1	0.3	0.3	0.2	0	0.8	0.2	32.5	4.7	0	37.4	
Unshifted	111	15	696	117	939	491	2148									2014					
% Unshifted	99.1	100	100	100	99.9	100	94.7	87.5	100	95.8	100	100	100	100	100	100	96.9	100	100	97.3	97
Tractor-Trailers																					
% Tractor-Trailers	0.9	0	0	0	0.1	0	5.3	12.5	0	4.2	0	0	0	0	0	0	3.1	0	0	2.7	3

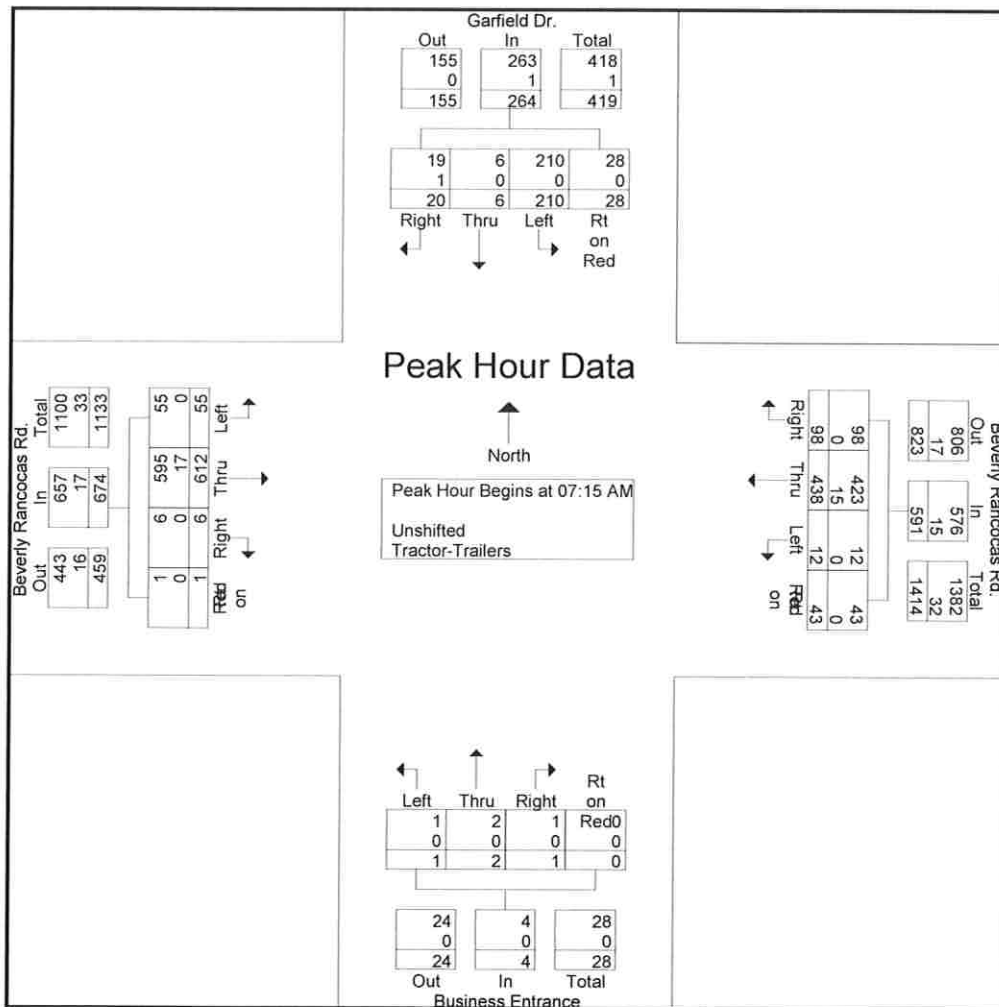
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	Right	Thru	Left	Rt on Red	App Total	Right	Thru	Left	Rt on Red	App Total	Right	Thru	Left	Rt on Red	App Total	Right	Thru	Left	Rt on Red	App Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	3	0	48	3	54	16	95	6	16	133	0	0	0	0	0	0	140	10	0	150	337
07:30 AM	2	1	51	8	62	32	130	3	13	178	0	0	0	0	0	3	189	14	0	206	446
07:45 AM	10	3	64	8	85	29	116	2	9	156	0	0	0	0	0	2	150	20	0	172	413
08:00 AM	5	2	47	9	63	21	97	1	5	124	1	2	1	0	4	1	133	11	1	146	337
Total Volume	20	6	210	28	264	98	438	12	43	591	1	2	1	0	4	6	612	55	1	674	1533
% App. Total	7.6	2.3	79.5	10.6		16.6	74.1	2	7.3		25	50	25	0		0.9	90.8	8.2	0.1		
PHF	.500	.500	.820	.778	.776	.766	.842	.500	.672	.830	.250	.250	.250	.000	.250	.500	.810	.688	.250	.818	.859
Unshifted	19	6	210	28	263	98	423	12	43	576	1	2	1	0	4	6	595	55	1	657	1500
% Unshifted	95.0	100	100	100	99.6	100	96.6	100	100	97.5	100	100	100	0	100	100	97.2	100	100	97.5	97.8
Tractor-Trailers																					
% Tractor-Trailers	5.0	0	0	0	0.4	0	3.4	0	0	2.5	0	0	0	0	0	0	2.8	0	0	2.5	2.2



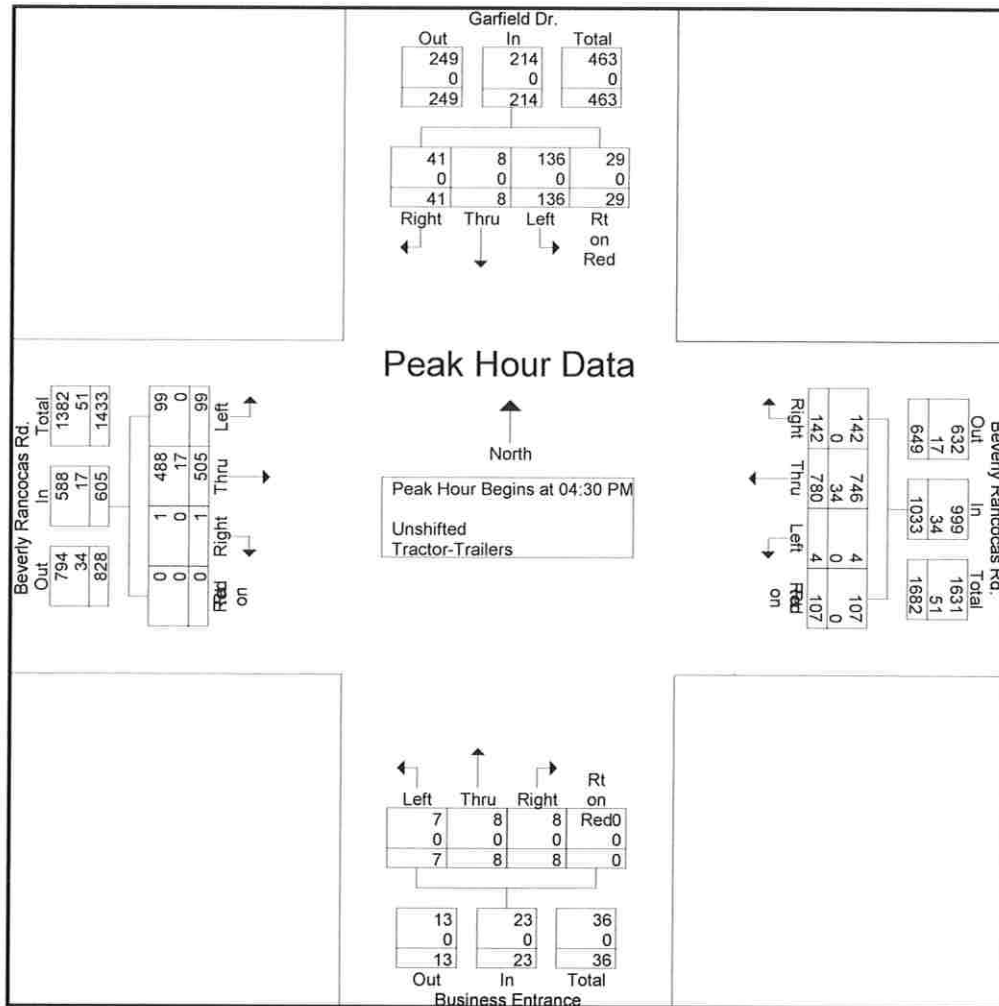
Shropshire Associates LLC

277 Whitehorse Pike, Suite 203
Atco, NJ 08004

N/S Route: Garfield Dr./Business Entrance
E/W Route: Beverly Rancocas Rd.
Willingboro Township/Burlington County/NJ
Tues/Clear/EM/D4-3142

File Name : 21067001
Site Code : 21067001
Start Date : 3/23/2021
Page No : 3

Start Time	Garfield Dr. Southbound					Beverly Rancocas Rd. Westbound					Business Entrance Northbound					Beverly Rancocas Rd. Eastbound					Int. Total
	Right	Thru	Left	Rt on Red	App. Total	Right	Thru	Left	Rt on Red	App. Total	Right	Thru	Left	Rt on Red	App. Total	Right	Thru	Left	Rt on Red	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	12	4	31	10	57	43	209	0	33	285	4	0	2	0	6	0	117	24	0	141	489
04:45 PM	8	0	29	2	39	36	201	0	16	253	0	2	3	0	5	0	128	23	0	151	448
05:00 PM	10	2	33	9	54	20	168	2	26	216	2	2	0	0	4	1	126	32	0	159	433
05:15 PM	11	2	43	8	64	43	202	2	32	279	2	4	2	0	8	0	134	20	0	154	505
Total Volume	41	8	136	29	214	142	780	4	107	1033	8	8	7	0	23	1	505	99	0	605	1875
% App. Total	19.2	3.7	63.6	13.6		13.7	75.5	0.4	10.4		34.8	34.8	30.4	0		0.2	83.5	16.4	0		
PHF	.854	.500	.791	.725	.836	.826	.933	.500	.811	.906	.500	.500	.583	.000	.719	.250	.942	.773	.000	.951	.928
Unshifted	41	8	136	29	214	142	746	4	107	999	8	8	7	0	23	1	488	99	0	588	1824
% Unshifted							95.6	100	100	96.7	100	100	100	0	100	100	96.6	100	0	97.2	97.3
Tractor-Trailers																					
% Tractor-Trailers	0	0	0	0	0	0	4.4	0	0	3.3	0	0	0	0	0	0	3.4	0	0	2.8	2.7



Shropshire Associates LLC

277 Whitehorse Pike, Suite 203
Atco, NJ 08004

N/S Route: Garfield Dr.
E/W Route: Commercial Dr.
Willingboro Township/Burlington County/NJ
Tues/Clear/EM/D4-3142

File Name : 21067001-a
Site Code : 21067001
Start Date : 3/23/2021
Page No : 1

Groups Printed- Commercial Drive

Start Time	Garfield Dr. Southbound		Commercial Dr. Westbound			Garfield Dr. Northbound		Int. Total
	Left	App. Total	Right	Left	App. Total	Right	App. Total	
07:00 AM	10	10	4	1	5	4	4	19
07:15 AM	3	3	4	2	6	4	4	13
07:30 AM	5	5	4	4	8	7	7	20
07:45 AM	13	13	5	2	7	5	5	25
Total	31	31	17	9	26	20	20	77
08:00 AM	10	10	4	3	7	3	3	20
08:15 AM	5	5	9	4	13	6	6	24
08:30 AM	2	2	4	1	5	4	4	11
08:45 AM	9	9	4	2	6	6	6	21
Total	26	26	21	10	31	19	19	76
*** BREAK ***								
04:00 PM	15	15	13	4	17	5	5	37
04:15 PM	12	12	15	8	23	2	2	37
04:30 PM	9	9	11	4	15	7	7	31
04:45 PM	6	6	7	3	10	6	6	22
Total	42	42	46	19	65	20	20	127
05:00 PM	10	10	15	4	19	7	7	36
05:15 PM	13	13	14	2	16	0	0	29
05:30 PM	8	8	1	2	3	3	3	14
05:45 PM	9	9	12	0	12	11	11	32
Total	40	40	42	8	50	21	21	111
Grand Total	139	139	126	46	172	80	80	391
Apprch %	100		73.3	26.7		100		
Total %	35.5	35.5	32.2	11.8	44	20.5	20.5	

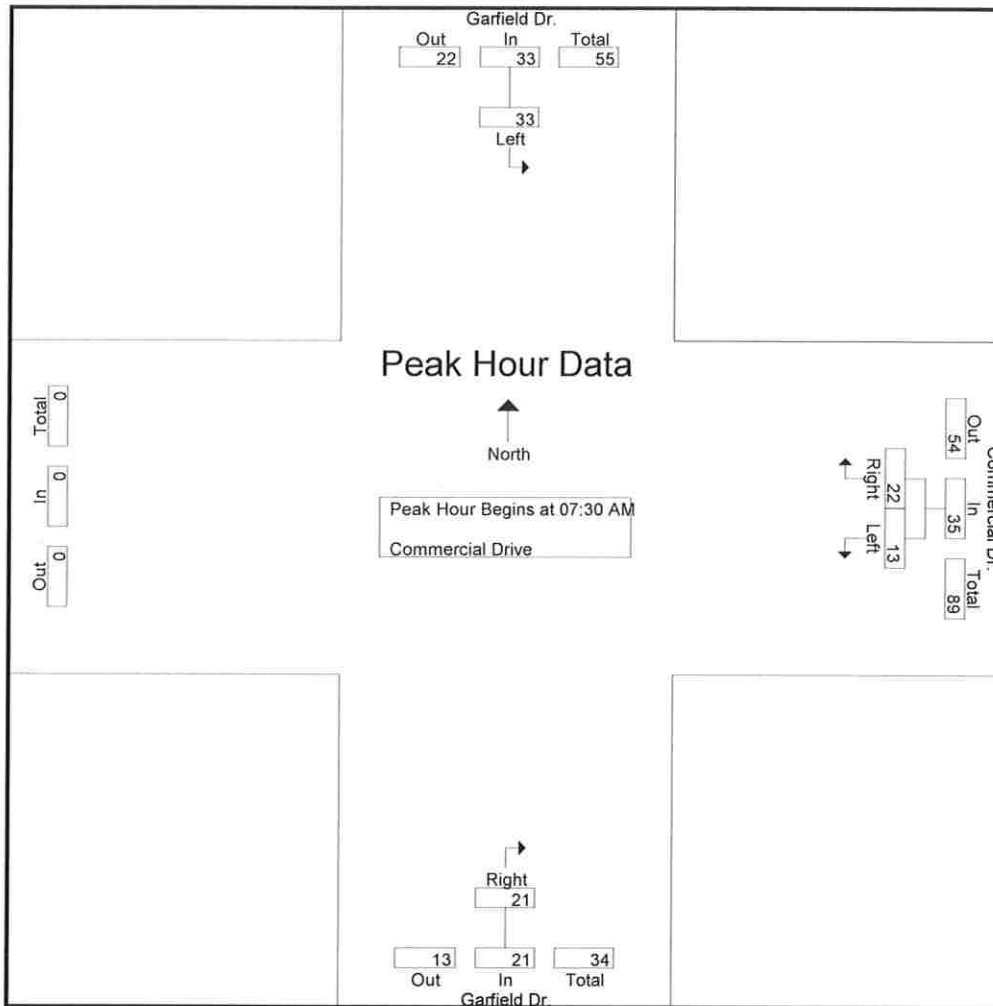
Shropshire Associates LLC

277 Whitehorse Pike, Suite 203
Atco, NJ 08004

N/S Route: Garfield Dr.
E/W Route: Commercial Dr.
Willingboro Township/Burlington County/NJ
Tues/Clear/EM/D4-3142

File Name : 21067001-a
Site Code : 21067001
Start Date : 3/23/2021
Page No : 2

Start Time	Garfield Dr. Southbound		Commercial Dr. Westbound			Garfield Dr. Northbound		Int. Total
	Left	App. Total	Right	Left	App. Total	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1								
Peak Hour for Entire Intersection Begins at 07:30 AM								
07:30 AM	5	5	4	4	8	7	7	20
07:45 AM	13	13	5	2	7	5	5	25
08:00 AM	10	10	4	3	7	3	3	20
08:15 AM	5	5	9	4	13	6	6	24
Total Volume	33	33	22	13	35	21	21	89
% App. Total	100		62.9	37.1		100		
PHF	.635	.635	.611	.813	.673	.750	.750	.890



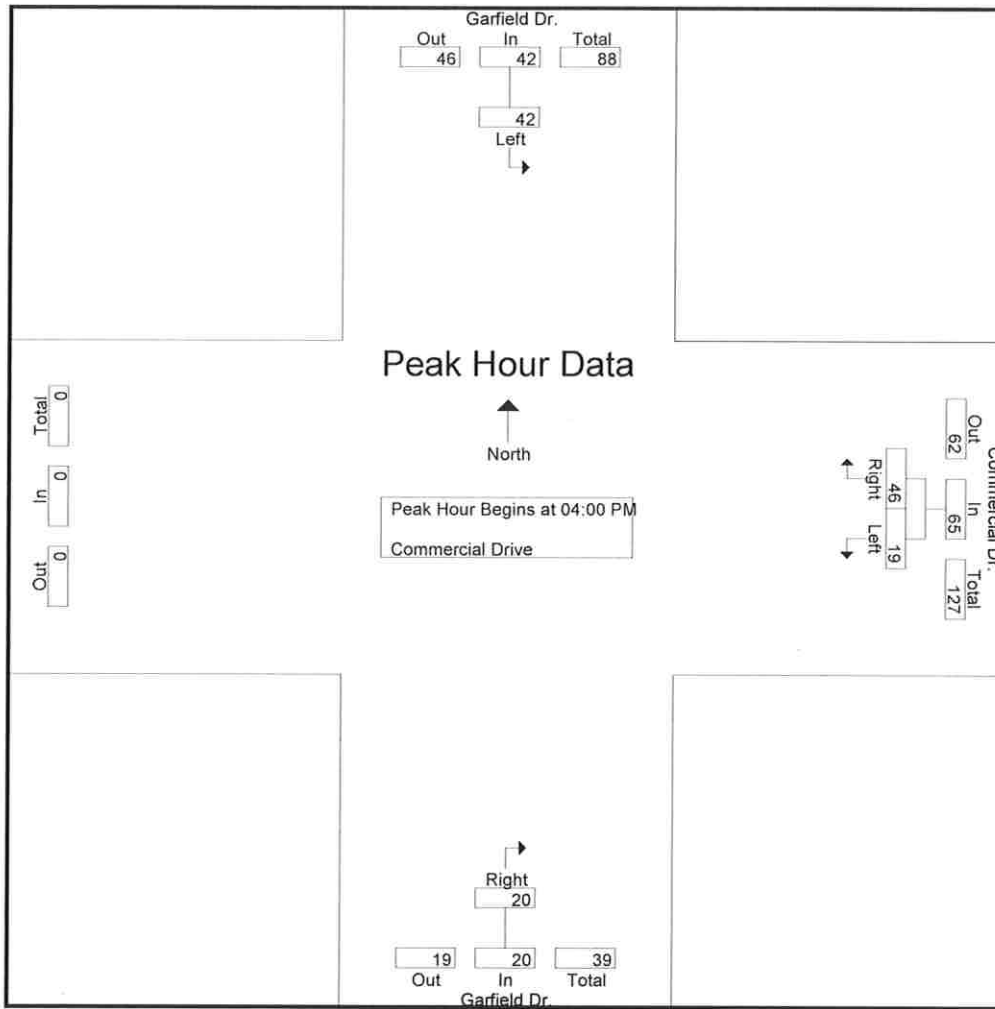
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277 Whitehorse Pike, Suite 203
Atco, NJ 08004

N/S Route: Garfield Dr.
E/W Route: Commercial Dr.
Willingboro Township/Burlington County/NJ
Tues/Clear/EM/D4-3142

File Name : 21067001-a
Site Code : 21067001
Start Date : 3/23/2021
Page No : 3

Start Time	Garfield Dr. Southbound		Commercial Dr. Westbound			Garfield Dr. Northbound		Int. Total
	Left	App. Total	Right	Left	App. Total	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1								
Peak Hour for Entire Intersection Begins at 04:00 PM								
04:00 PM	15	15	13	4	17	5	5	37
04:15 PM	12	12	15	8	23	2	2	37
04:30 PM	9	9	11	4	15	7	7	31
04:45 PM	6	6	7	3	10	6	6	22
Total Volume	42	42	46	19	65	20	20	127
% App. Total	100		70.8	29.2		100		
PHF	.700	.700	.767	.594	.707	.714	.714	.858



Shropshire Associates LLC

277 Whitehorse Pike, Suite 203
Atco, NJ 08004

N/S Route: Garfield Dr./Business Entrance
E/W Route: Beverly Rancocas Rd.
Willingboro Township/Burlington County/NJ
Sat/Clear/EM/D4-3142

File Name : 21067002
Site Code : 21067002
Start Date : 3/27/2021
Page No : 1

Groups Printed- Unshifted - Trailers

Start Time	Garfield Dr. Southbound					Beverly Rancocas Rd. Westbound					Business Entrance Northbound					Beverly Rancocas Rd. Eastbound					Int. Total
	Right	Thru	Left	Rt on Red	App. Total	Right	Thru	Left	Rt on Red	App. Total	Right	Thru	Left	Rt on Red	App. Total	Right	Thru	Left	Rt on Red	App. Total	
11:00 AM	2	0	48	20	70	37	121	0	4	162	1	0	1	2	4	0	98	15	0	113	349
11:15 AM	6	0	56	12	74	14	146	2	14	176	0	0	0	0	0	0	139	20	0	159	409
11:30 AM	12	0	36	20	68	31	134	0	6	171	0	0	4	0	4	0	114	20	0	134	377
11:45 AM	10	0	64	18	92	22	111	2	14	149	0	0	0	0	0	2	109	30	0	141	382
Total	30	0	204	70	304	104	512	4	38	658	1	0	5	2	8	2	460	85	0	547	1517
12:00 PM	6	0	57	12	75	22	131	0	22	175	0	0	0	0	0	0	112	36	0	148	398
12:15 PM	8	0	60	19	87	33	161	2	10	206	0	0	2	0	2	0	109	26	0	135	430
12:30 PM	12	0	40	16	68	35	126	7	10	178	4	2	0	2	8	0	156	18	0	174	428
12:45 PM	4	0	52	24	80	39	130	2	2	173	0	0	0	0	0	0	131	39	0	170	423
Total	30	0	209	71	310	129	548	11	44	732	4	2	2	2	10	0	508	119	0	627	1679
01:00 PM	20	0	76	18	114	36	113	2	26	177	2	0	0	0	2	0	109	24	0	133	426
01:15 PM	14	0	52	31	97	54	129	2	8	193	2	0	0	0	2	0	113	29	0	142	434
01:30 PM	6	0	50	23	79	25	132	0	6	163	0	0	0	0	0	0	118	18	0	136	378
01:45 PM	8	0	80	20	108	23	127	0	11	161	0	0	0	0	0	0	100	30	0	130	399
Total	48	0	258	92	398	138	501	4	51	694	4	0	0	0	4	0	440	101	0	541	1637
Grand Total	108	0	671	233	1012	371	1561	19	133	2084	9	2	7	4	22	2	1408	305	0	1715	4833
Apprch %	10.7	0	66.3	23		17.8	74.9	0.9	6.4		40.9	9.1	31.8	18.2		0.1	82.1	17.8	0		
Total %	2.2	0	13.9	4.8	20.9	7.7	32.3	0.4	2.8	43.1	0.2	0	0.1	0.1	0.5	0	29.1	6.3	0	35.5	
Unshifted	108	0	671	233	1012	371	1542									1393					
% Unshifted	100	0	100	100	100	100	98.8	100	100	99.1	100	100	100	100	100	100	98.9	100	0	99.1	99.3
Tractor-Trailers																					
% Tractor-Trailers	0	0	0	0	0	0	1.2	0	0	0.9	0	0	0	0	0	0	1.1	0	0	0.9	0.7

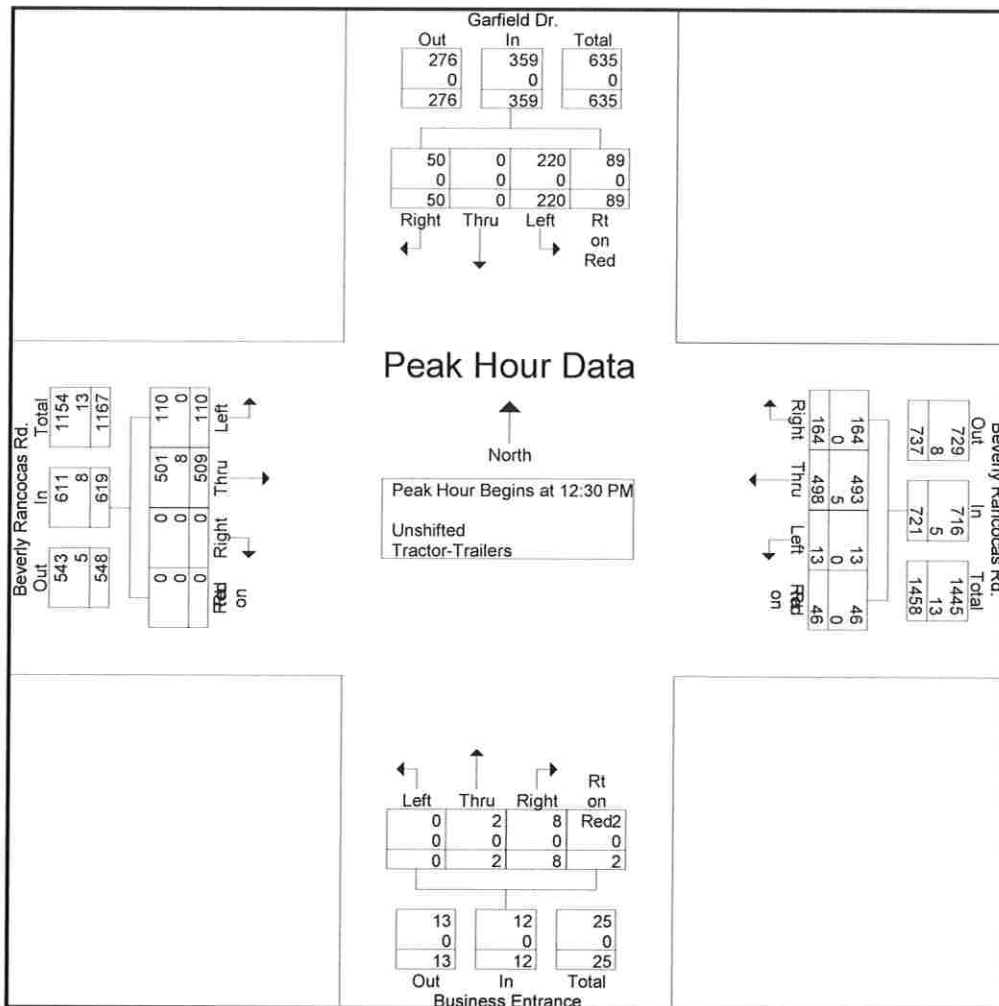
Shropshire Associates LLC

277 Whitehorse Pike, Suite 203
Atco, NJ 08004

N/S Route: Garfield Dr./Business Entrance
E/W Route: Beverly Rancocas Rd.
Willingboro Township/Burlington County/NJ
Sat/Clear/EM/D4-3142

File Name : 21067002
Site Code : 21067002
Start Date : 3/27/2021
Page No : 2

Start Time	Garfield Dr. Southbound					Beverly Rancocas Rd. Westbound					Business Entrance Northbound					Beverly Rancocas Rd. Eastbound					Int. Total
	Right	Thru	Left	Rt on Red	App. Total	Right	Thru	Left	Rt on Red	App. Total	Right	Thru	Left	Rt on Red	App. Total	Right	Thru	Left	Rt on Red	App. Total	
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:30 PM																					
12:30 PM	12	0	40	16	68	35	126	7	10	178	4	2	0	2	8	0	156	18	0	174	428
12:45 PM	4	0	52	24	80	39	130	2	2	173	0	0	0	0	0	0	131	39	0	170	423
01:00 PM	20	0	76	18	114	36	113	2	26	177	2	0	0	0	2	0	109	24	0	133	426
01:15 PM	14	0	52	31	97	54	129	2	8	193	2	0	0	0	2	0	113	29	0	142	434
Total Volume	50	0	220	89	359	164	498	13	46	721	8	2	0	2	12	0	509	110	0	619	1711
% App. Total	13.9	0	61.3	24.8		22.7	69.1	1.8	6.4		66.7	16.7	0	16.7		0	82.2	17.8	0		
PHF	.625	.000	.724	.718	.787	.759	.958	.464	.442	.934	.500	.250	.000	.250	.375	.000	.816	.705	.000	.889	.986
Unshifted	50	0	220	89	359	164	493	13	46	716	8	2	0	2	12	0	501	110	0	611	1698
% Unshifted							99.0	100	100	99.3	100	100	0	100	100	0	98.4	100	0	98.7	99.2
Tractor-Trailers																					
% Tractor-Trailers	0	0	0	0	0	0	1.0	0	0	0.7	0	0	0	0	0	0	1.6	0	0	1.3	0.8



Shropshire Associates LLC

277 Whitehorse Pike, Suite 203
Atco, NJ 08004

N/S Route: Garfield Dr.
E/W Route: Commercial Dr.
Willingboro Township/Burlington County/NJ
Sat/Clear/EM/D4-3142

File Name : 21067002-a
Site Code : 21067002
Start Date : 3/27/2021
Page No : 1

Groups Printed- Commercial Dr.

Start Time	Garfield Dr. Southbound		Commercial Dr. Westbound			Garfield Dr. Northbound		Int. Total
	Left	App. Total	Right	Left	App. Total	Right	App. Total	
11:00 AM	12	12	10	6	16	3	3	31
11:15 AM	11	11	12	2	14	8	8	33
11:30 AM	7	7	7	2	9	4	4	20
11:45 AM	4	4	11	4	15	4	4	23
Total	34	34	40	14	54	19	19	107
12:00 PM	12	12	10	6	16	13	13	41
12:15 PM	6	6	18	8	26	8	8	40
12:30 PM	11	11	10	0	10	5	5	26
12:45 PM	9	9	8	8	16	7	7	32
Total	38	38	46	22	68	33	33	139
01:00 PM	9	9	5	12	17	6	6	32
01:15 PM	13	13	8	6	14	10	10	37
01:30 PM	10	10	8	6	14	2	2	26
01:45 PM	4	4	6	10	16	7	7	27
Total	36	36	27	34	61	25	25	122
Grand Total	108	108	113	70	183	77	77	368
Apprch %	100		61.7	38.3		100		
Total %	29.3	29.3	30.7	19	49.7	20.9	20.9	

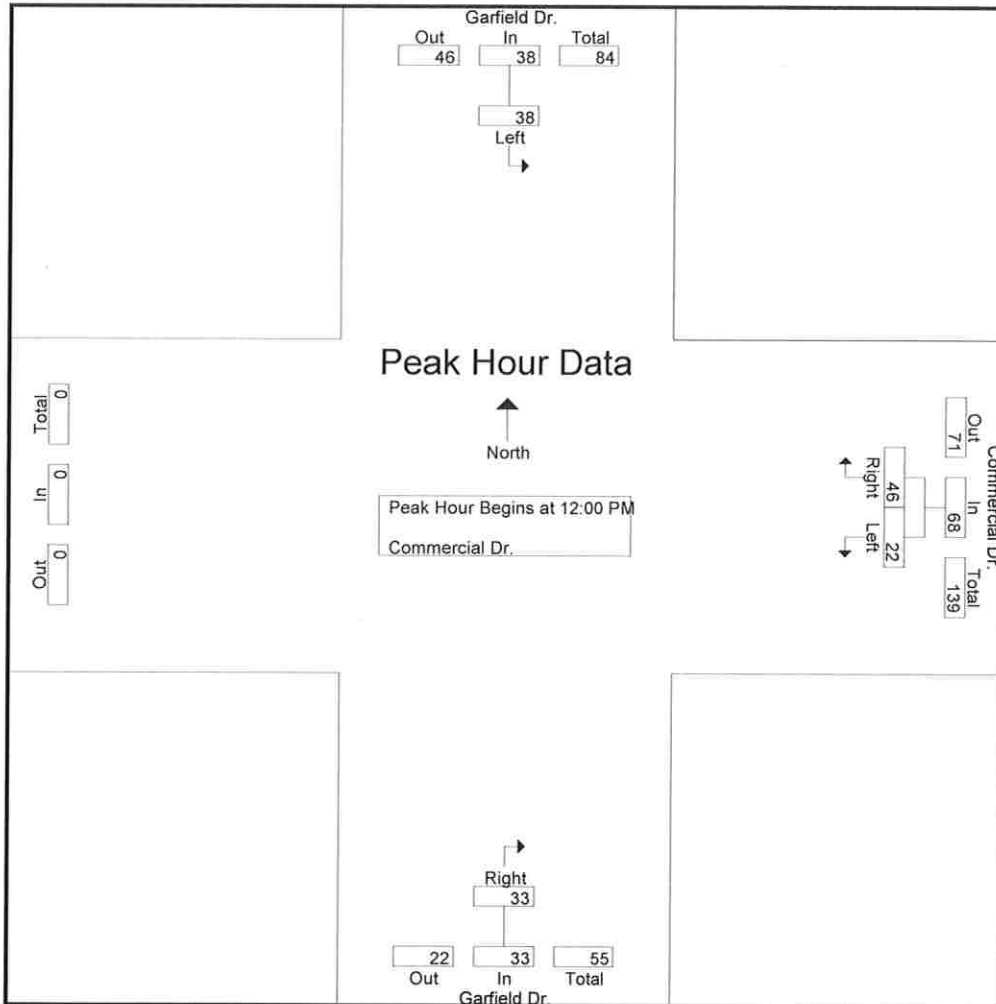
Shropshire Associates LLC

277 Whitehorse Pike, Suite 203
Atco, NJ 08004

N/S Route: Garfield Dr.
E/W Route: Commercial Dr.
Willingboro Township/Burlington County/NJ
Sat/Clear/EM/D4-3142

File Name : 21067002-a
Site Code : 21067002
Start Date : 3/27/2021
Page No : 2

Start Time	Garfield Dr. Southbound		Commercial Dr. Westbound			Garfield Dr. Northbound		Int. Total
	Left	App. Total	Right	Left	App. Total	Right	App. Total	
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1								
Peak Hour for Entire Intersection Begins at 12:00 PM								
12:00 PM	12	12	10	6	16	13	13	41
12:15 PM	6	6	18	8	26	8	8	40
12:30 PM	11	11	10	0	10	5	5	26
12:45 PM	9	9	8	8	16	7	7	32
Total Volume	38	38	46	22	68	33	33	139
% App. Total	100		67.6	32.4		100		
PHF	.792	.792	.639	.688	.654	.635	.635	.848



TRAFFIC SIGNAL TIMING & OPERATION

TS - 58
Beverly-Rancocas Rd (626) and Garfield Dr.
Willingboro Township
Burlington County

NORMAL OPERATION

PHASE	ROW	SIGNAL FACES					TIME (SECONDS)					
		4	2,3	1,5-7	8-11	12,13	PTN O	PTN 7	PTN 10	PTN 13	PTN 16	
A (1,5)	Lead Left, Beverly-Rancocas Road	G	G/<G-	R	R	DW	5-11	3-5	3-5	3-5	3-5	
	Yellow	G	G/<Y-	R	R	DW	3	3	3	3	3	
B (2,6)	Beverly-Rancocas Road (CR 626)	G	G	G	R	DW	30	64-41	74-51	84-52	94-58	
	Yellow	Y	Y	Y	R	DW	5	5	5	5	5	
	All Red	R	R	R	R	DW	1	1	1	1	1	
C (4,8)	Garfield Drive	R	R	R	G	DW	8-30	8-29	8-29	8-38	8-42	
	Yellow	R	R	R	Y	DW	4	4	4	4	4	
	All Red	R	R	R	R	DW	2	2	2	2	2	
	OFFSET						-	35	51	37	52	

*OFFSET is measured from the beginning of YELLOW to Beverly-Rancocas Rd. (626) at JFK Way (633) to the beginning of YELLOW to Beverly-Rancocas Rd. (626) at this intersection as follows:

Pedestrian Actuation of Phase B (2,6) shall provide a minimum walk time of 17 seconds and a Pedestrian Clearance Time of 13 seconds.
Pedestrian Actuation of Phase C (4,8) shall provide a Walk time of 5 seconds and a Pedestrian Clearance Time of 24 seconds.

Vehicle Interval = 2 seconds.
Memory Circuits are to be "OFF"
Manual Control is to be DISCONNECTED

Emergency Flashing Operation:
Flash YELLOW to Beverly-Rancocas Rd. (626)
Flash RED to EBD LEFT TURN, SPRINGSIDE ROAD (635) AND HIGHLAND DRIVE
Pedestrian signals are to be Dark

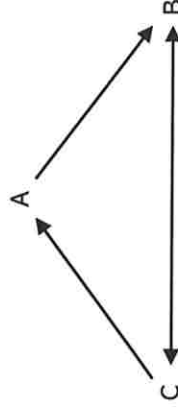
TRAFFIC SIGNAL TIMING & OPERATION

TS - 58
Beverly-Rancocas Rd (626) and Garfield Dr.
Willingboro Township
Burlington County

Time of Day Operation (Controller)

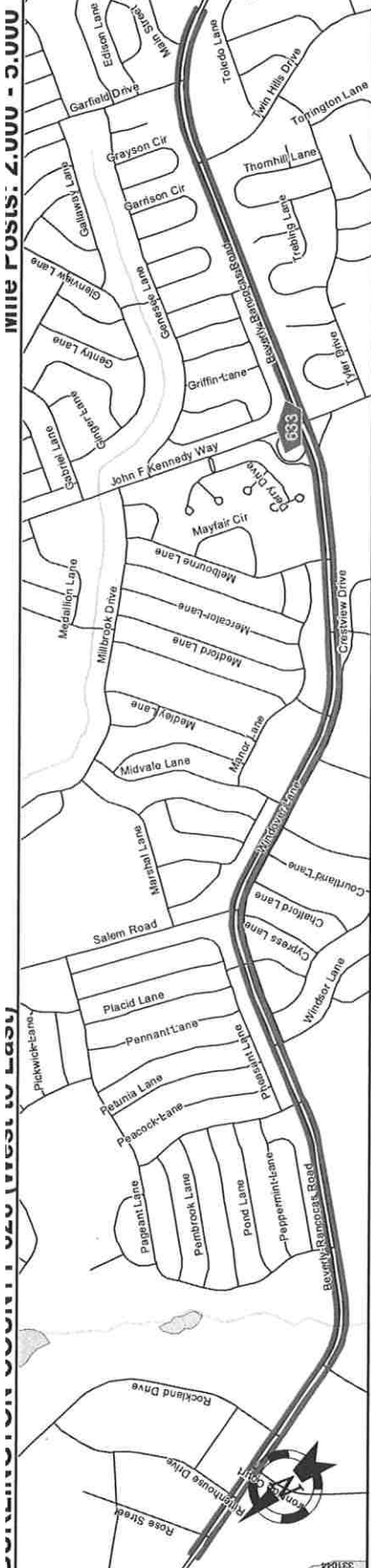
TIME OF DAY	CYCLE LENGTH	PATTERN	DAY(S) OF WEEK
0000-0700	VARIABLE	0	DAILY
0700-0900	100	10	DAILY
0900-1600	90	7	DAILY
1600-1800	100	10	DAILY
1800-2200	90	7	DAILY
2200-0000	VARIABLE	0	DAILY

PHASING DIAGRAM



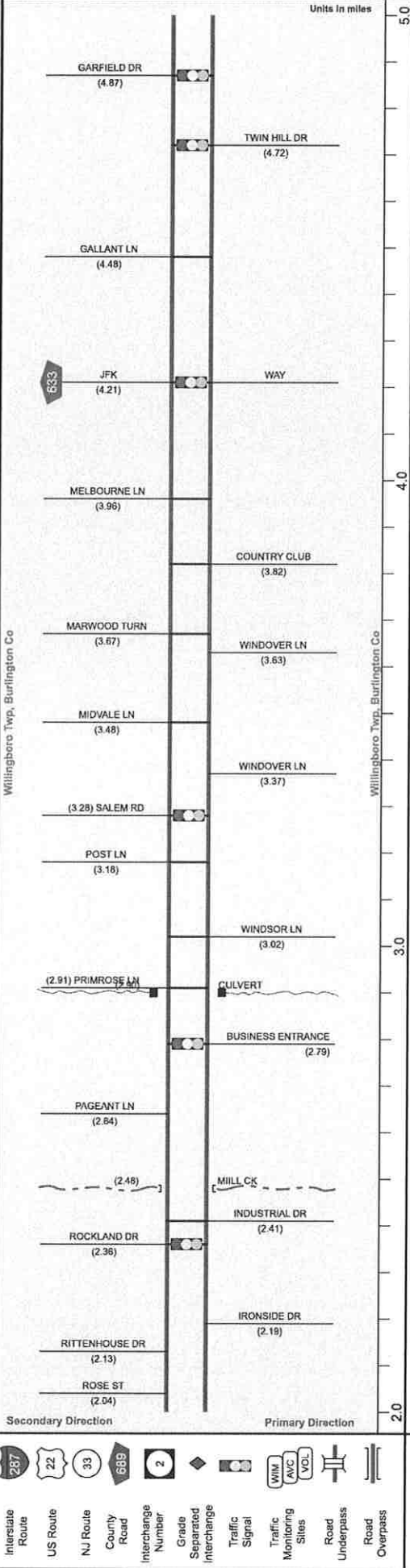
REMOTE CONTROL PRE-EMPTION NOTES

1. Remote control pre-emption is permitted from all approaches to the intersection.
2. The preemption device shall only actuate a phase displayed in the normal operation.
3. The controller shall guarantee all vehicular and pedestrian minimums, change and clearance times.
4. Normal Operation shall commence at the point in the sequence where pre-emption was terminated.
5. A minimum guaranteed green time shall be provided to the main street before servicing another pre-emption request.
6. In the event of multiple vehicles requesting pre-emption, the device shall grant pre-emption on a first come, first serve basis. All remaining requests for pre-emption will be processed in the order received.



MILE POSTS: 4.000 - 5.000

Pavement	0	24
Shoulder	1	8
Number of Lanes	2	45
Speed Limit	40	
Street Name	Beverly-Rancocas Road	



Street Name	Beverly-Rancocas Road	
Jurisdiction	County	
Functional Class	Urban Principal Arterial	
Federal Aid - NHS Sy	NHS	
Control Section	40	
Speed Limit	2	
Number of Lanes	24	
Med. Type	Curb	
Med. Width	16	
Pavement	0	
Shoulder	1	
Traffic Volume	VAR	
Traffic Sta. ID	03C3220	
Structure No.		
Enlarged Views		

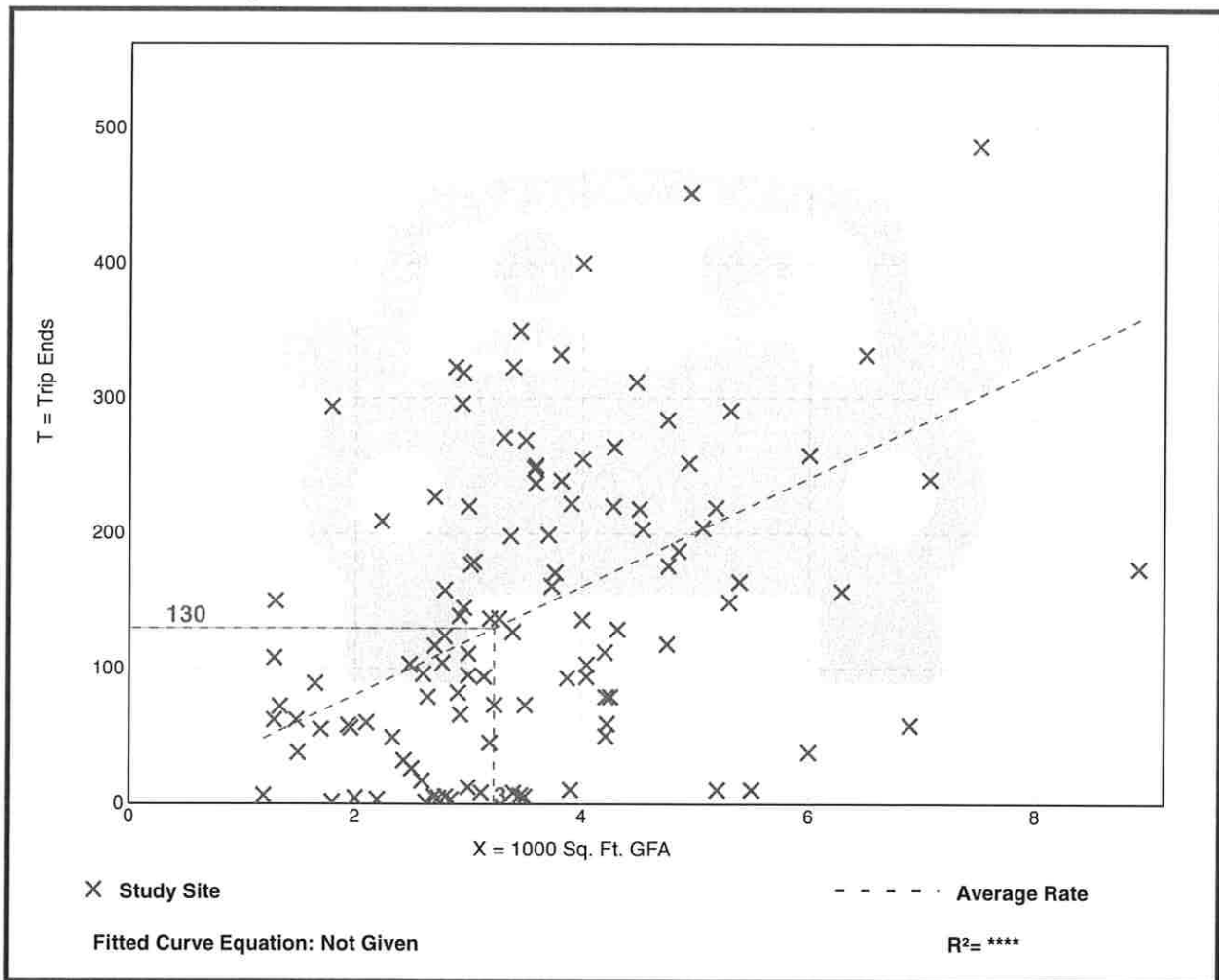
Fast-Food Restaurant with Drive-Through Window (934)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
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: 111
 Avg. 1000 Sq. Ft. GFA: 4
 Directional Distribution: 51% entering, 49% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
40.19	0.38 - 164.25	28.78

Data Plot and Equation



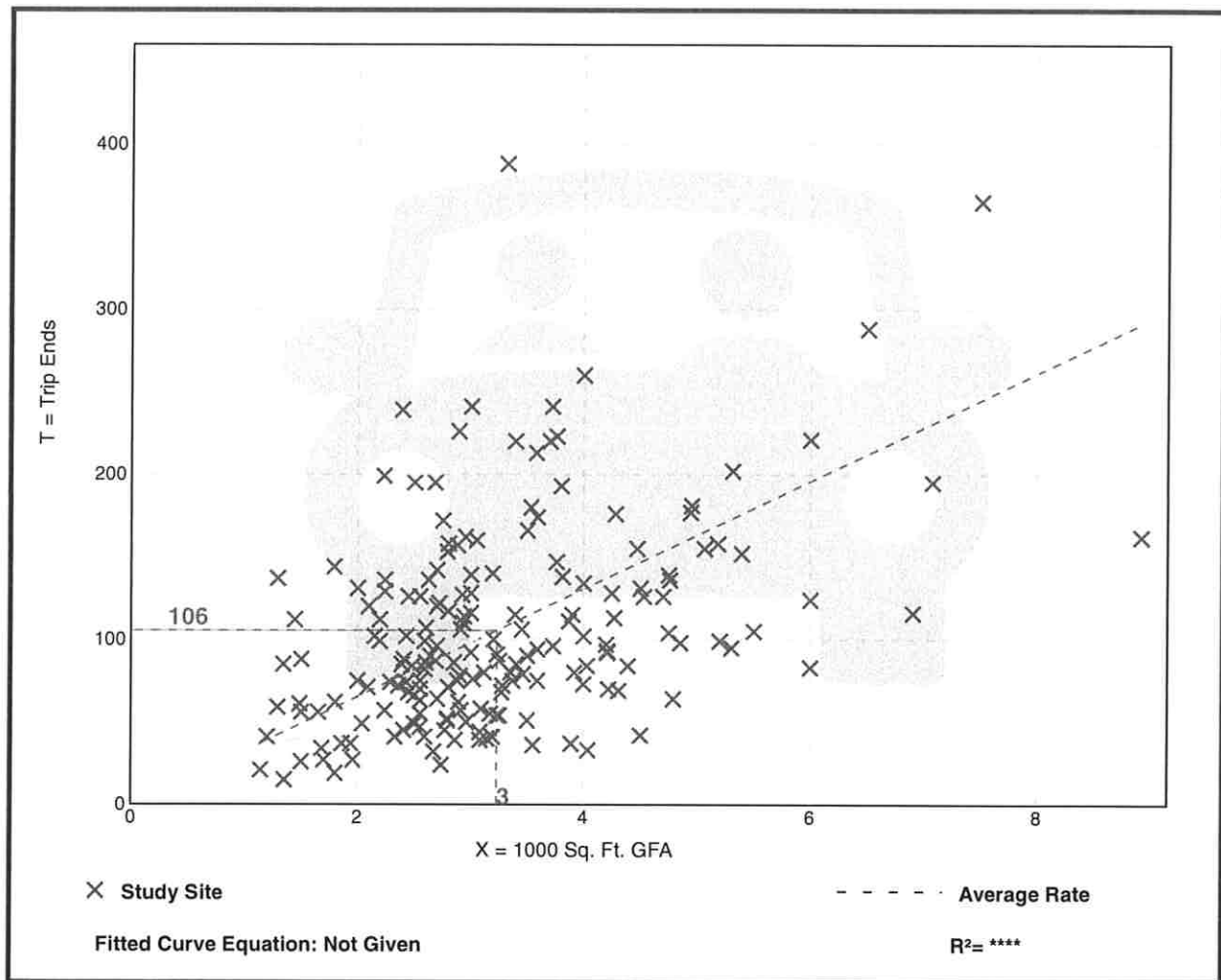
Fast-Food Restaurant with Drive-Through Window (934)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
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: 185
 Avg. 1000 Sq. Ft. GFA: 3
 Directional Distribution: 52% entering, 48% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
32.67	8.17 - 117.22	17.87

Data Plot and Equation



Fast-Food Restaurant with Drive-Through Window (934)

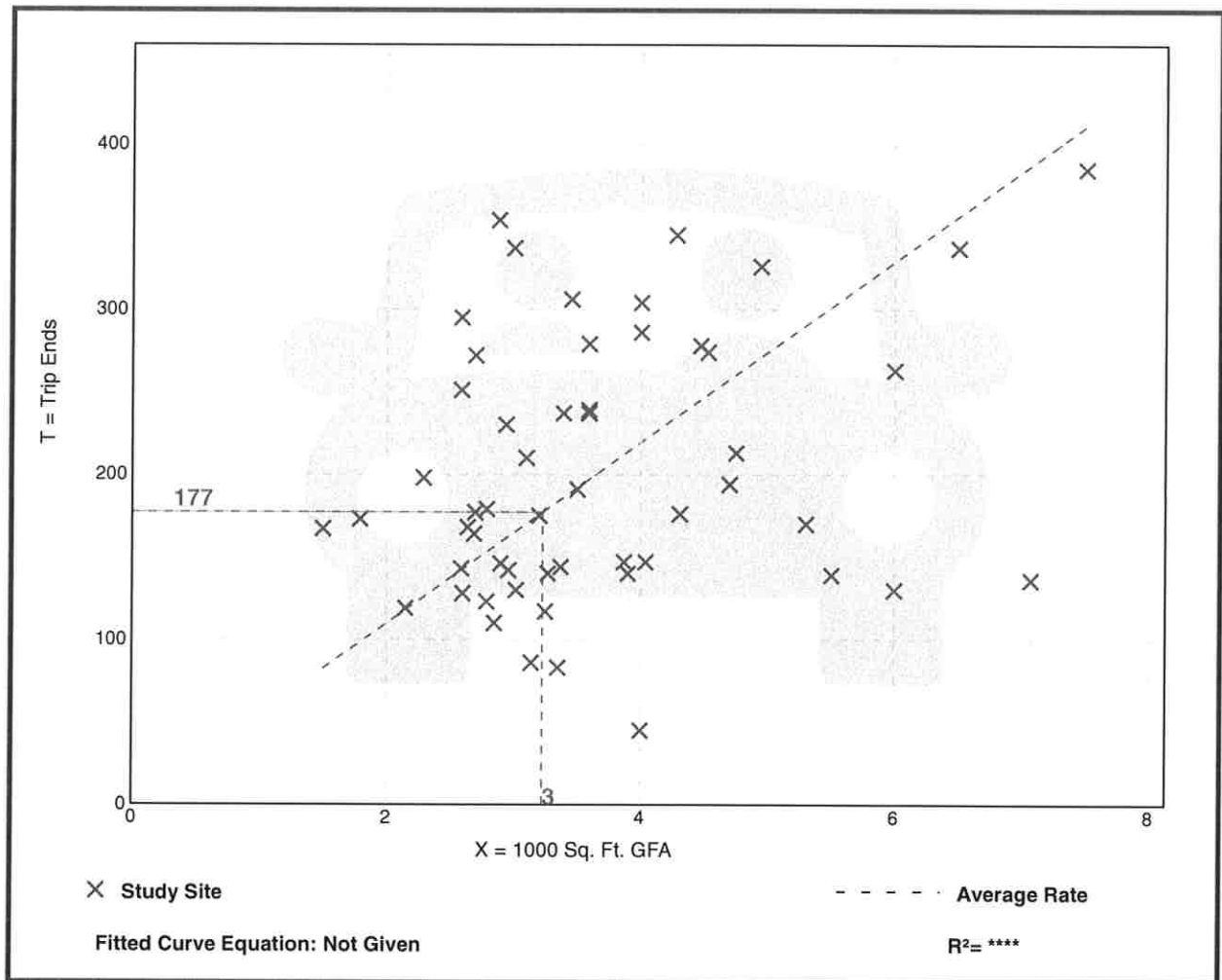
Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Saturday, Peak Hour of Generator

Setting/Location: General Urban/Suburban
Number of Studies: 54
Avg. 1000 Sq. Ft. GFA: 4
Directional Distribution: 51% entering, 49% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA























Average Rate	Range of Rates	Standard Deviation
54.86	11.25 - 122.92	24.51

Data Plot and Equation



Lanes, Volumes, Timings
3: Garfield Drive & Beverly Rancocas Road

Existing AM
05/27/2021

												
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	1	2	1	210	6	48	55	612	7	12	438	141
Future Volume (vph)	1	2	1	210	6	48	55	612	7	12	438	141
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		0	100		0	150		150	150		150
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	25			25			100			100		
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
Frnt		0.950			0.867				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1805	0	1805	1619	0	1805	1845	1615	1805	1845	1615
Flt Permitted	0.687			0.750			0.329			0.190		
Satd. Flow (perm)	1305	1805	0	1425	1619	0	625	1845	1615	361	1845	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			96				82			183
Link Speed (mph)		40			40			40			45	
Link Distance (ft)		167			253			424			434	
Travel Time (s)		2.8			4.3			7.2			6.6	
Peak Hour Factor	0.25	0.25	0.25	0.82	0.50	0.50	0.69	0.81	0.50	0.50	0.84	0.77
Heavy Vehicles (%)	0%	0%	0%	0%	0%	2%	0%	3%	0%	0%	3%	0%
Adj. Flow (vph)	4	8	4	256	12	96	80	756	14	24	521	183
Shared Lane Traffic (%)												
Lane Group Flow (vph)	4	12	0	256	108	0	80	756	14	24	521	183
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)		12			12			12			12	
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
Number of Detectors	1	1		1	1		1	0	0	1	0	0
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	40	40		40	40		40	0	0	40	0	0
Trailing Detector (ft)	-10	-10		-10	-10		-10	0	0	-10	0	0
Detector 1 Position(ft)	-10	-10		-10	-10		-10	0	0	-10	0	0
Detector 1 Size(ft)	50	50		50	50		50	6	20	50	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		2			6		7	4		3	8	
Permitted Phases	2			6			4		4	8		8
Detector Phase	2	2		6	6		7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		5.0	30.0	30.0	5.0	30.0	30.0
Minimum Split (s)	14.0	14.0		14.0	14.0		8.0	36.0	36.0	8.0	36.0	36.0

Lanes, Volumes, Timings
3: Garfield Drive & Beverly Rancocas Road

Existing AM
05/27/2021

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Total Split (s)	36.0	36.0		36.0	36.0		8.0	36.0	36.0	8.0	36.0	36.0
Total Split (%)	45.0%	45.0%		45.0%	45.0%		10.0%	45.0%	45.0%	10.0%	45.0%	45.0%
Maximum Green (s)	30.0	30.0		30.0	30.0		5.0	30.0	30.0	5.0	30.0	30.0
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	2.0	2.0		2.0	2.0		0.0	1.0	1.0	0.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0		3.0	6.0	6.0	3.0	6.0	6.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	None		None	None		None	Min	Min	None	Min	Min
Act Effct Green (s)	16.0	16.0		16.0	16.0		38.6	33.7	33.7	37.4	30.5	30.5
Actuated g/C Ratio	0.25	0.25		0.25	0.25		0.60	0.52	0.52	0.58	0.47	0.47
v/c Ratio	0.01	0.03		0.73	0.23		0.17	0.79	0.02	0.07	0.60	0.21
Control Delay	18.0	15.0		35.2	7.0		7.4	24.5	0.0	7.2	18.5	3.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.0	15.0		35.2	7.0		7.4	24.5	0.0	7.2	18.5	3.2
LOS	B	B		D	A		A	C	A	A	B	A
Approach Delay		15.8			26.9			22.5			14.3	
Approach LOS		B			C			C			B	

Intersection Summary

Area Type: Other
 Cycle Length: 80
 Actuated Cycle Length: 64.8
 Natural Cycle: 65
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.79
 Intersection Signal Delay: 20.2
 Intersection Capacity Utilization 68.0%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service C

Splits and Phases: 3: Garfield Drive & Beverly Rancocas Road

36 s	8 s	36 s
36 s	8 s	36 s

Intersection						
Int Delay, s/veh	1.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		T			4
Traffic Vol, veh/h	13	22	177	21	33	251
Future Vol, veh/h	13	22	177	21	33	251
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	81	61	92	75	64	92
Heavy Vehicles, %	0	0	2	0	0	2
Mvmt Flow	16	36	192	28	52	273























Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	583	206	0	0	220	0
Stage 1	206	-	-	-	-	-
Stage 2	377	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	478	840	-	-	1361	-
Stage 1	833	-	-	-	-	-
Stage 2	698	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	456	840	-	-	1361	-
Mov Cap-2 Maneuver	456	-	-	-	-	-
Stage 1	833	-	-	-	-	-
Stage 2	667	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.9	0	1.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	667	1361
HCM Lane V/C Ratio	-	-	0.078	0.038
HCM Control Delay (s)	-	-	10.9	7.7
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.3	0.1













Lanes, Volumes, Timings
3: Garfield Drive & Beverly Rancocas Road

Existing PM
05/27/2021

												
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	7	8	8	136	8	70	99	505	1	4	780	249
Future Volume (vph)	7	8	8	136	8	70	99	505	1	4	780	249
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		0	100		0	150		150	150		150
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	25			25			100			100		
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
Frnt		0.925			0.874				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1758	0	1805	1633	0	1805	1845	1615	1805	1827	1615
Flt Permitted	0.694			0.736			0.227			0.428		
Satd. Flow (perm)	1319	1758	0	1398	1633	0	431	1845	1615	813	1827	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16			82				54			300
Link Speed (mph)		40			40			40			45	
Link Distance (ft)		167			253			424			434	
Travel Time (s)		2.8			4.3			7.2			6.6	
Peak Hour Factor	0.58	0.50	0.50	0.79	0.50	0.85	0.77	0.94	0.25	0.50	0.93	0.83
Heavy Vehicles (%)	0%	0%	0%	0%	0%	2%	0%	3%	0%	0%	4%	0%
Adj. Flow (vph)	12	16	16	172	16	82	129	537	4	8	839	300
Shared Lane Traffic (%)												
Lane Group Flow (vph)	12	32	0	172	98	0	129	537	4	8	839	300
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)		12			12			12			12	
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
Number of Detectors	1	1		1	1		1	0	0	1	0	0
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	40	40		40	40		40	0	0	40	0	0
Trailing Detector (ft)	-10	-10		-10	-10		-10	0	0	-10	0	0
Detector 1 Position(ft)	-10	-10		-10	-10		-10	0	0	-10	0	0
Detector 1 Size(ft)	50	50		50	50		50	6	20	50	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		2			6		7	4		3	8	
Permitted Phases	2			6			4		4	8		8
Detector Phase	2	2		6	6		7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		3.0	74.0	74.0	3.0	74.0	74.0
Minimum Split (s)	14.0	14.0		14.0	14.0		6.0	80.0	80.0	6.0	80.0	80.0

Lanes, Volumes, Timings
3: Garfield Drive & Beverly Rancocas Road







Existing PM
05/27/2021

												
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Total Split (s)	35.0	35.0		35.0	35.0		6.0	80.0	80.0	6.0	80.0	80.0
Total Split (%)	28.9%	28.9%		28.9%	28.9%		5.0%	66.1%	66.1%	5.0%	66.1%	66.1%
Maximum Green (s)	29.0	29.0		29.0	29.0		3.0	74.0	74.0	3.0	74.0	74.0
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	2.0	2.0		2.0	2.0		0.0	1.0	1.0	0.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0		3.0	6.0	6.0	3.0	6.0	6.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	None		None	None		None	Min	Min	None	Min	Min
Act Effct Green (s)	18.0	18.0		18.0	18.0		82.6	79.1	79.1	80.2	74.2	74.2
Actuated g/C Ratio	0.16	0.16		0.16	0.16		0.75	0.72	0.72	0.73	0.67	0.67
v/c Ratio	0.06	0.11		0.76	0.29		0.36	0.41	0.00	0.01	0.68	0.25
Control Delay	38.0	24.1		64.6	13.8		7.6	8.5	0.0	4.8	15.6	1.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.0	24.1		64.6	13.8		7.6	8.5	0.0	4.8	15.6	1.5
LOS	D	C		E	B		A	A	A	A	B	A
Approach Delay		27.9			46.1			8.3			11.9	
Approach LOS		C			D			A			B	

Intersection Summary

Area Type: Other
 Cycle Length: 121
 Actuated Cycle Length: 110.2
 Natural Cycle: 100
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.76
 Intersection Signal Delay: 15.4
 Intersection Capacity Utilization 94.7%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service F

Splits and Phases: 3: Garfield Drive & Beverly Rancocas Road

 Ø2	 Ø3	 Ø4
35 s	6 s	80 s
 Ø6	 Ø7	 Ø8
35 s	6 s	80 s

Intersection

Int Delay, s/veh 2.2

Movement WBL WBR NBT NBR SBL SBT

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔			↔
Traffic Vol, veh/h	19	46	336	20	42	195
Future Vol, veh/h	19	46	336	20	42	195
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	59	77	92	71	70	92
Heavy Vehicles, %	0	0	2	0	0	2
Mvmt Flow	32	60	365	28	60	212

Major/Minor Minor1 Major1 Major2

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	711	379	0
Stage 1	379	-	-
Stage 2	332	-	-
Critical Hdwy	6.4	6.2	-
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	-
Pot Cap-1 Maneuver	403	672	-
Stage 1	696	-	-
Stage 2	731	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	380	672	-
Mov Cap-2 Maneuver	380	-	-
Stage 1	696	-	-
Stage 2	689	-	-

Approach WB NB SB























Approach	WB	NB	SB
HCM Control Delay, s	13.2	0	1.8
HCM LOS	B		

Minor Lane/Major Mvmt NBT NBRWBLn1 SBL SBT

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	529	1177
HCM Lane V/C Ratio	-	-	0.174	0.051
HCM Control Delay (s)	-	-	13.2	8.2
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.6	0.2

Lanes, Volumes, Timings
3: Garfield Drive & Beverly Rancocas Road

Existing SAT
05/27/2021

												
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	0	2	10	220	0	139	110	509	0	13	498	210
Future Volume (vph)	0	2	10	220	0	139	110	509	0	13	498	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		0	100		0	150		150	150		150
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	25			25			100			100		
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		0.893			0.850							0.850
Flt Protected				0.950			0.950			0.950		
Satd. Flow (prot)	1900	1697	0	1805	1615	0	1805	1863	1900	1805	1881	1615
Flt Permitted				0.739			0.368			0.329		
Satd. Flow (perm)	1900	1697	0	1404	1615	0	699	1863	1900	625	1881	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		20			387							276
Link Speed (mph)		40			40			40			45	
Link Distance (ft)		167			253			424			434	
Travel Time (s)		2.8			4.3			7.2			6.6	
Peak Hour Factor	0.25	0.25	0.50	0.72	0.25	0.62	0.70	0.82	0.25	0.46	0.96	0.76
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	1%	0%
Adj. Flow (vph)	0	8	20	306	0	224	157	621	0	28	519	276
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	28	0	306	224	0	157	621	0	28	519	276
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)		12			12			12			12	
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
Number of Detectors	1	1		1	1		1	0	0	1	0	0
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	40	40		40	40		40	0	0	40	0	0
Trailing Detector (ft)	-10	-10		-10	-10		-10	0	0	-10	0	0
Detector 1 Position(ft)	-10	-10		-10	-10		-10	0	0	-10	0	0
Detector 1 Size(ft)	50	50		50	50		50	6	20	50	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		2			6		7	4		3	8	
Permitted Phases	2			6			4		4	8		8
Detector Phase	2	2		6	6		7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		3.0	64.0	64.0	3.0	64.0	64.0
Minimum Split (s)	14.0	14.0		14.0	14.0		8.0	70.0	70.0	8.0	70.0	70.0

Lanes, Volumes, Timings
3: Garfield Drive & Beverly Rancocas Road

Existing SAT
05/27/2021



Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Total Split (s)	35.0	35.0		35.0	35.0		8.0	70.0	70.0	8.0	70.0	70.0
Total Split (%)	31.0%	31.0%		31.0%	31.0%		7.1%	61.9%	61.9%	7.1%	61.9%	61.9%
Maximum Green (s)	29.0	29.0		29.0	29.0		5.0	64.0	64.0	5.0	64.0	64.0
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	2.0	2.0		2.0	2.0		0.0	1.0	1.0	0.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0		3.0	6.0	6.0	3.0	6.0	6.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	None		None	None		None	Min	Min	None	Min	Min
Act Effct Green (s)		26.4		26.4	26.4		73.3	67.4		72.0	64.1	64.1
Actuated g/C Ratio		0.24		0.24	0.24		0.66	0.61		0.65	0.58	0.58
v/c Ratio		0.07		0.91	0.33		0.31	0.55		0.06	0.48	0.26
Control Delay		16.9		72.9	1.3		8.5	16.2		6.8	15.8	2.0
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay		16.9		72.9	1.3		8.5	16.2		6.8	15.8	2.0
LOS		B		E	A		A	B		A	B	A
Approach Delay		16.9			42.6			14.7			10.9	
Approach LOS		B			D			B			B	

Intersection Summary

Area Type: Other
 Cycle Length: 113
 Actuated Cycle Length: 110.5
 Natural Cycle: 105
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.91
 Intersection Signal Delay: 20.1
 Intersection Capacity Utilization 91.6%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service F

Splits and Phases: 3: Garfield Drive & Beverly Rancocas Road

Ø2	Ø3	Ø4
35 s	3 s	70 s
Ø6	Ø7	Ø8
35 s	3 s	70 s

Intersection						
Int Delay, s/veh	2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		↑			↑
Traffic Vol, veh/h	22	46	289	33	38	337
Future Vol, veh/h	22	46	289	33	38	337
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	69	64	92	64	79	92
Heavy Vehicles, %	0	0	2	0	0	2
Mvmt Flow	32	72	314	52	48	366

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	802	340	0	0	366	0
Stage 1	340	-	-	-	-	-
Stage 2	462	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	356	707	-	-	1204	-
Stage 1	725	-	-	-	-	-
Stage 2	638	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	338	707	-	-	1204	-
Mov Cap-2 Maneuver	338	-	-	-	-	-
Stage 1	725	-	-	-	-	-
Stage 2	606	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.5	0	0.9
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	529	1204
HCM Lane V/C Ratio	-	-	0.196	0.04
HCM Control Delay (s)	-	-	13.5	8.1
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.7	0.1

Lanes, Volumes, Timings
3: Garfield Drive & Beverly Rancocas Road

No-Build AM
05/27/2021

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	1	2	1	214	6	49	56	624	7	12	447	144
Future Volume (vph)	1	2	1	214	6	49	56	624	7	12	447	144
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		0	100		0	150		150	150		150
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	25			25			100			100		
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
Frnt		0.950			0.866				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1805	0	1805	1617	0	1805	1845	1615	1805	1845	1615
Flt Permitted	0.686			0.750			0.318			0.177		
Satd. Flow (perm)	1303	1805	0	1425	1617	0	604	1845	1615	336	1845	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			98				82			187
Link Speed (mph)		40			40			40			45	
Link Distance (ft)		167			253			424			434	
Travel Time (s)		2.8			4.3			7.2			6.6	
Peak Hour Factor	0.25	0.25	0.25	0.82	0.50	0.50	0.69	0.81	0.50	0.50	0.84	0.77
Heavy Vehicles (%)	0%	0%	0%	0%	0%	2%	0%	3%	0%	0%	3%	0%
Adj. Flow (vph)	4	8	4	261	12	98	81	770	14	24	532	187
Shared Lane Traffic (%)												
Lane Group Flow (vph)	4	12	0	261	110	0	81	770	14	24	532	187
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)		12			12			12			12	
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
Number of Detectors	1	1		1	1		1	0	0	1	0	0
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	40	40		40	40		40	0	0	40	0	0
Trailing Detector (ft)	-10	-10		-10	-10		-10	0	0	-10	0	0
Detector 1 Position(ft)	-10	-10		-10	-10		-10	0	0	-10	0	0
Detector 1 Size(ft)	50	50		50	50		50	6	20	50	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		2			6		7	4		3	8	
Permitted Phases	2			6			4		4	8		8
Detector Phase	2	2		6	6		7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		5.0	30.0	30.0	5.0	30.0	30.0
Minimum Split (s)	14.0	14.0		14.0	14.0		8.0	36.0	36.0	8.0	36.0	36.0

Lanes, Volumes, Timings
 3: Garfield Drive & Beverly Rancocas Road

No-Build AM
 05/27/2021



Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Total Split (s)	36.0	36.0		36.0	36.0		8.0	36.0	36.0	8.0	36.0	36.0
Total Split (%)	45.0%	45.0%		45.0%	45.0%		10.0%	45.0%	45.0%	10.0%	45.0%	45.0%
Maximum Green (s)	30.0	30.0		30.0	30.0		5.0	30.0	30.0	5.0	30.0	30.0
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	2.0	2.0		2.0	2.0		0.0	1.0	1.0	0.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0		3.0	6.0	6.0	3.0	6.0	6.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	None		None	None		None	Min	Min	None	Min	Min
Act Effct Green (s)	16.3	16.3		16.3	16.3		38.6	33.7	33.7	37.4	30.5	30.5
Actuated g/C Ratio	0.25	0.25		0.25	0.25		0.59	0.52	0.52	0.57	0.47	0.47
v/c Ratio	0.01	0.03		0.74	0.23		0.18	0.81	0.02	0.08	0.62	0.22
Control Delay	18.0	15.0		35.5	6.9		7.6	25.6	0.0	7.3	19.0	3.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.0	15.0		35.5	6.9		7.6	25.6	0.0	7.3	19.0	3.2
LOS	B	B		D	A		A	C	A	A	B	A
Approach Delay		15.8			27.0			23.5			14.6	
Approach LOS		B			C			C			B	

Intersection Summary

Area Type: Other
 Cycle Length: 80
 Actuated Cycle Length: 65.1
 Natural Cycle: 65
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.81
 Intersection Signal Delay: 20.8
 Intersection Capacity Utilization 68.9%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service C

Splits and Phases: 3: Garfield Drive & Beverly Rancocas Road

Ø2 36 s	Ø3 8 s	Ø4 36 s
Ø6 36 s	Ø7 8 s	Ø8 36 s

Intersection

Int Delay, s/veh 1.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		↑			↖
Traffic Vol, veh/h	13	22	181	21	33	256
Future Vol, veh/h	13	22	181	21	33	256
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	81	61	92	75	64	92
Heavy Vehicles, %	0	0	2	0	0	2
Mvmt Flow	16	36	197	28	52	278























Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	593	211	0	0	225
Stage 1	211	-	-	-	-
Stage 2	382	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	472	834	-	-	1356
Stage 1	829	-	-	-	-
Stage 2	694	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	451	834	-	-	1356
Mov Cap-2 Maneuver	451	-	-	-	-
Stage 1	829	-	-	-	-
Stage 2	663	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.9	0	1.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	661	1356
HCM Lane V/C Ratio	-	-	0.079	0.038
HCM Control Delay (s)	-	-	10.9	7.8
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.3	0.1

Lanes, Volumes, Timings
3: Garfield Drive & Beverly Rancocas Road

No-Build PM
05/27/2021

												
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	7	8	8	139	8	71	101	515	1	4	796	254
Future Volume (vph)	7	8	8	139	8	71	101	515	1	4	796	254
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		0	100		0	150		150	150		150
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	25			25			100			100		
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		0.925			0.874				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1758	0	1805	1633	0	1805	1845	1615	1805	1827	1615
Flt Permitted	0.692			0.736			0.217			0.421		
Satd. Flow (perm)	1315	1758	0	1398	1633	0	412	1845	1615	800	1827	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16			84				54			301
Link Speed (mph)		40			40			40			45	
Link Distance (ft)		167			253			424			434	
Travel Time (s)		2.8			4.3			7.2			6.6	
Peak Hour Factor	0.58	0.50	0.50	0.79	0.50	0.85	0.77	0.94	0.25	0.50	0.93	0.83
Heavy Vehicles (%)	0%	0%	0%	0%	0%	2%	0%	3%	0%	0%	4%	0%
Adj. Flow (vph)	12	16	16	176	16	84	131	548	4	8	856	306
Shared Lane Traffic (%)												
Lane Group Flow (vph)	12	32	0	176	100	0	131	548	4	8	856	306
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)		12			12			12			12	
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
Number of Detectors	1	1		1	1		1	0	0	1	0	0
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	40	40		40	40		40	0	0	40	0	0
Trailing Detector (ft)	-10	-10		-10	-10		-10	0	0	-10	0	0
Detector 1 Position(ft)	-10	-10		-10	-10		-10	0	0	-10	0	0
Detector 1 Size(ft)	50	50		50	50		50	6	20	50	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		2			6		7	4		3	8	
Permitted Phases	2			6			4		4	8		8
Detector Phase	2	2		6	6		7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		3.0	74.0	74.0	3.0	74.0	74.0
Minimum Split (s)	14.0	14.0		14.0	14.0		6.0	80.0	80.0	6.0	80.0	80.0

Lanes, Volumes, Timings
 3: Garfield Drive & Beverly Rancocas Road

No-Build PM
 05/27/2021



Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Total Split (s)	35.0	35.0		35.0	35.0		6.0	80.0	80.0	6.0	80.0	80.0
Total Split (%)	28.9%	28.9%		28.9%	28.9%		5.0%	66.1%	66.1%	5.0%	66.1%	66.1%
Maximum Green (s)	29.0	29.0		29.0	29.0		3.0	74.0	74.0	3.0	74.0	74.0
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	2.0	2.0		2.0	2.0		0.0	1.0	1.0	0.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0		3.0	6.0	6.0	3.0	6.0	6.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	None		None	None		None	Min	Min	None	Min	Min
Act Effct Green (s)	18.3	18.3		18.3	18.3		82.7	79.1	79.1	80.2	74.2	74.2
Actuated g/C Ratio	0.17	0.17		0.17	0.17		0.75	0.72	0.72	0.73	0.67	0.67
v/c Ratio	0.06	0.11		0.76	0.29		0.38	0.42	0.00	0.01	0.70	0.26
Control Delay	37.9	24.1		64.8	13.6		8.1	8.7	0.0	4.8	16.3	1.6
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.9	24.1		64.8	13.6		8.1	8.7	0.0	4.8	16.3	1.6
LOS	D	C		E	B		A	A	A	A	B	A
Approach Delay		27.8			46.2			8.6			12.4	
Approach LOS		C			D			A			B	

Intersection Summary

Area Type: Other
 Cycle Length: 121
 Actuated Cycle Length: 110.6
 Natural Cycle: 100
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.76
 Intersection Signal Delay: 15.8 Intersection LOS: B
 Intersection Capacity Utilization 95.0% ICU Level of Service F
 Analysis Period (min) 15

Splits and Phases: 3: Garfield Drive & Beverly Rancocas Road

↑ Ø2 35 s	↙ Ø3 5 s	↘ Ø4 80 s
↓ Ø6 35 s	↗ Ø7 5 s	↖ Ø8 80 s

Intersection						
Int Delay, s/veh	2.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		Y			Y
Traffic Vol, veh/h	19	46	343	20	43	198
Future Vol, veh/h	19	46	343	20	43	198
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	59	77	92	71	70	92
Heavy Vehicles, %	0	0	2	0	0	2
Mvmt Flow	32	60	373	28	61	215























Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	724	387	0 0 401 0
Stage 1	387	-	- - - -
Stage 2	337	-	- - - -
Critical Hdwy	6.4	6.2	- - 4.1 -
Critical Hdwy Stg 1	5.4	-	- - - -
Critical Hdwy Stg 2	5.4	-	- - - -
Follow-up Hdwy	3.5	3.3	- - 2.2 -
Pot Cap-1 Maneuver	396	665	- - 1169 -
Stage 1	691	-	- - - -
Stage 2	728	-	- - - -
Platoon blocked, %			- - - -
Mov Cap-1 Maneuver	373	665	- - 1169 -
Mov Cap-2 Maneuver	373	-	- - - -
Stage 1	691	-	- - - -
Stage 2	685	-	- - - -

Approach	WB	NB	SB
HCM Control Delay, s	13.4	0	1.8
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	522	1169
HCM Lane V/C Ratio	-	-	0.176	0.053
HCM Control Delay (s)	-	-	13.4	8.2
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.6	0.2

Lanes, Volumes, Timings
3: Garfield Drive & Beverly Rancocas Road

No-Build SAT
05/27/2021

												
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	0	2	10	224	0	142	112	519	0	13	508	214
Future Volume (vph)	0	2	10	224	0	142	112	519	0	13	508	214
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		0	100		0	150		150	150		150
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	25			25			100			100		
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
Frnt		0.893			0.850							0.850
Flt Protected				0.950			0.950			0.950		
Satd. Flow (prot)	1900	1697	0	1805	1615	0	1805	1863	1900	1805	1881	1615
Flt Permitted				0.739			0.360			0.320		
Satd. Flow (perm)	1900	1697	0	1404	1615	0	684	1863	1900	608	1881	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		20			381							282
Link Speed (mph)		40			40			40			45	
Link Distance (ft)		167			253			424			434	
Travel Time (s)		2.8			4.3			7.2			6.6	
Peak Hour Factor	0.25	0.25	0.50	0.72	0.25	0.62	0.70	0.82	0.25	0.46	0.96	0.76
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	1%	0%
Adj. Flow (vph)	0	8	20	311	0	229	160	633	0	28	529	282
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	28	0	311	229	0	160	633	0	28	529	282
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)		12			12			12			12	
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
Number of Detectors	1	1		1	1		1	0	0	1	0	0
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	40	40		40	40		40	0	0	40	0	0
Trailing Detector (ft)	-10	-10		-10	-10		-10	0	0	-10	0	0
Detector 1 Position(ft)	-10	-10		-10	-10		-10	0	0	-10	0	0
Detector 1 Size(ft)	50	50		50	50		50	6	20	50	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		2			6		7	4		3	8	
Permitted Phases	2			6			4		4	8		8
Detector Phase	2	2		6	6		7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		3.0	64.0	64.0	3.0	64.0	64.0
Minimum Split (s)	14.0	14.0		14.0	14.0		8.0	70.0	70.0	8.0	70.0	70.0

Lanes, Volumes, Timings
3: Garfield Drive & Beverly Rancocas Road

No-Build SAT
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Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Total Split (s)	35.0	35.0		35.0	35.0		8.0	70.0	70.0	8.0	70.0	70.0
Total Split (%)	31.0%	31.0%		31.0%	31.0%		7.1%	61.9%	61.9%	7.1%	61.9%	61.9%
Maximum Green (s)	29.0	29.0		29.0	29.0		5.0	64.0	64.0	5.0	64.0	64.0
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	2.0	2.0		2.0	2.0		0.0	1.0	1.0	0.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0		3.0	6.0	6.0	3.0	6.0	6.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	None		None	None		None	Min	Min	None	Min	Min
Act Effct Green (s)		26.7		26.7	26.7		73.3	67.4		72.0	64.1	64.1
Actuated g/C Ratio		0.24		0.24	0.24		0.66	0.61		0.65	0.58	0.58
v/c Ratio		0.07		0.92	0.34		0.32	0.56		0.06	0.49	0.27
Control Delay		16.9		73.9	1.3		8.7	16.6		6.8	16.1	2.0
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay		16.9		73.9	1.3		8.7	16.6		6.8	16.1	2.0
LOS		B		E	A		A	B		A	B	A
Approach Delay		16.9			43.1			15.0			11.0	
Approach LOS		B			D			B			B	

Intersection Summary

Area Type: Other
 Cycle Length: 113
 Actuated Cycle Length: 110.8
 Natural Cycle: 105
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.92
 Intersection Signal Delay: 20.4
 Intersection Capacity Utilization 91.9%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service F

Splits and Phases: 3: Garfield Drive & Beverly Rancocas Road

Ø2	Ø3	Ø4
35 s	3 s	70 s
Ø6	Ø7	Ø8
35 s	3 s	70 s

Intersection						
Int Delay, s/veh	2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		Y			Y
Traffic Vol, veh/h	22	46	295	33	38	344
Future Vol, veh/h	22	46	295	33	38	344
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	69	64	92	64	79	92
Heavy Vehicles, %	0	0	2	0	0	2
Mvmt Flow	32	72	321	52	48	374























Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	817	347	0	0	373
Stage 1	347	-	-	-	-
Stage 2	470	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	349	701	-	-	1197
Stage 1	720	-	-	-	-
Stage 2	633	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	331	701	-	-	1197
Mov Cap-2 Maneuver	331	-	-	-	-
Stage 1	720	-	-	-	-
Stage 2	601	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.6	0	0.9
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	522	1197
HCM Lane V/C Ratio	-	-	0.199	0.04
HCM Control Delay (s)	-	-	13.6	8.1
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.7	0.1

Lanes, Volumes, Timings
3: Garfield Drive & Beverly Rancocas Road

Build AM
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Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	1	2	1	231	6	49	70	624	7	12	457	147
Future Volume (vph)	1	2	1	231	6	49	70	624	7	12	457	147
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		0	100		0	150		150	150		150
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	25			25			100			100		
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
Frnt		0.950			0.866				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1805	0	1805	1617	0	1805	1845	1615	1805	1845	1615
Flt Permitted	0.686			0.750			0.302			0.167		
Satd. Flow (perm)	1303	1805	0	1425	1617	0	574	1845	1615	317	1845	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			98				82			191
Link Speed (mph)		40			40			40			45	
Link Distance (ft)		167			128			292			434	
Travel Time (s)		2.8			2.2			5.0			6.6	
Peak Hour Factor	0.25	0.25	0.25	0.82	0.50	0.50	0.69	0.81	0.50	0.50	0.84	0.77
Heavy Vehicles (%)	0%	0%	0%	0%	0%	2%	0%	3%	0%	0%	3%	0%
Adj. Flow (vph)	4	8	4	282	12	98	101	770	14	24	544	191
Shared Lane Traffic (%)												
Lane Group Flow (vph)	4	12	0	282	110	0	101	770	14	24	544	191
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)		12			12			12			12	
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
Number of Detectors	1	1		1	1		1	2	1	1	2	0
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	40	40		40	40		40	100	20	20	100	0
Trailing Detector (ft)	-10	-10		-10	-10		-10	0	0	0	0	0
Detector 1 Position(ft)	-10	-10		-10	-10		-10	0	0	0	0	0
Detector 1 Size(ft)	50	50		50	50		50	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)								94			94	
Detector 2 Size(ft)								6			6	
Detector 2 Type								Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)								0.0			0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		2			6		7	4		3		8

Lanes, Volumes, Timings
3: Garfield Drive & Beverly Rancocas Road

Build AM
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Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Permitted Phases	2			6			4		4	8		8
Detector Phase	2	2		6	6		7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		5.0	30.0	30.0	5.0	30.0	30.0
Minimum Split (s)	14.0	14.0		14.0	14.0		8.0	36.0	36.0	8.0	36.0	36.0
Total Split (s)	36.0	36.0		36.0	36.0		8.0	36.0	36.0	8.0	36.0	36.0
Total Split (%)	45.0%	45.0%		45.0%	45.0%		10.0%	45.0%	45.0%	10.0%	45.0%	45.0%
Maximum Green (s)	30.0	30.0		30.0	30.0		5.0	30.0	30.0	5.0	30.0	30.0
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	2.0	2.0		2.0	2.0		0.0	1.0	1.0	0.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0		3.0	6.0	6.0	3.0	6.0	6.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	None		None	None		None	Min	Min	None	Min	Min
Act Effct Green (s)	17.4	17.4		17.4	17.4		38.6	33.8	33.8	37.4	30.6	30.6
Actuated g/C Ratio	0.26	0.26		0.26	0.26		0.58	0.51	0.51	0.56	0.46	0.46
v/c Ratio	0.01	0.03		0.75	0.22		0.24	0.82	0.02	0.08	0.64	0.23
Control Delay	17.0	14.7		35.9	6.6		8.6	27.3	0.0	7.9	20.6	3.4
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.0	14.7		35.9	6.6		8.6	27.3	0.0	7.9	20.6	3.4
LOS	B	B		D	A		A	C	A	A	C	A
Approach Delay		15.3			27.7			24.7			15.9	
Approach LOS		B			C			C			B	

Intersection Summary

Area Type:	Other
Cycle Length:	80
Actuated Cycle Length:	66.3
Natural Cycle:	70
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.82
Intersection Signal Delay:	21.9
Intersection LOS:	C
Intersection Capacity Utilization:	69.8%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 3: Garfield Drive & Beverly Rancocas Road

Ø2	Ø3	Ø4
36 s	8 s	36 s
Ø6	Ø7	Ø8
36 s	8 s	36 s

Intersection						
Int Delay, s/veh	1.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		T			T
Traffic Vol, veh/h	13	22	185	21	33	262
Future Vol, veh/h	13	22	185	21	33	262
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	81	61	92	75	64	92
Heavy Vehicles, %	0	0	2	0	0	2
Mvmt Flow	16	36	201	28	52	285

Major/Minor	Minor1	Major1	Major2	Major2	Major2
Conflicting Flow All	604	215	0	0	229
Stage 1	215	-	-	-	-
Stage 2	389	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	465	830	-	-	1351
Stage 1	826	-	-	-	-
Stage 2	689	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	444	830	-	-	1351
Mov Cap-2 Maneuver	444	-	-	-	-
Stage 1	826	-	-	-	-
Stage 2	657	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11	0	1.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	655	1351
HCM Lane V/C Ratio	-	-	0.08	0.038
HCM Control Delay (s)	-	-	11	7.8
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.3	0.1

Intersection						
Int Delay, s/veh	1.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y		↑		↑	
Traffic Vol, veh/h	11	26	24	195	260	15
Future Vol, veh/h	11	26	24	195	260	15
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	28	26	212	283	16

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	555	291	299	0	-	0
Stage 1	291	-	-	-	-	-
Stage 2	264	-	-	-	-	-
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	493	748	1262	-	-	-
Stage 1	759	-	-	-	-	-
Stage 2	780	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	482	748	1262	-	-	-
Mov Cap-2 Maneuver	482	-	-	-	-	-
Stage 1	742	-	-	-	-	-
Stage 2	780	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11	0.9	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1262	-	643	-	-
HCM Lane V/C Ratio	0.021	-	0.063	-	-
HCM Control Delay (s)	7.9	0	11	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations		↑↑	↑↑			↑
Traffic Vol, veh/h	0	0	480	27	0	27
Future Vol, veh/h	0	0	480	27	0	27
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	522	29	0	29























Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	-	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	6.94
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	3.32
Pot Cap-1 Maneuver	0	-	0
Stage 1	0	-	0
Stage 2	0	-	0
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	721
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SW
HCM Control Delay, s	0	0	10.2
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SWLn1
Capacity (veh/h)	-	-	-	721
HCM Lane V/C Ratio	-	-	-	0.041
HCM Control Delay (s)	-	-	-	10.2
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.1













Lanes, Volumes, Timings
3: Garfield Drive & Beverly Rancocas Road

Build PM
05/27/2021

												
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	7	8	8	148	8	71	110	515	1	4	809	257
Future Volume (vph)	7	8	8	148	8	71	110	515	1	4	809	257
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		0	100		0	150		150	150		150
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	25			25			100			100		
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
Frnt		0.925			0.874				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1758	0	1805	1633	0	1805	1845	1615	1805	1827	1615
Flt Permitted	0.692			0.736			0.206			0.418		
Satd. Flow (perm)	1315	1758	0	1398	1633	0	391	1845	1615	794	1827	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16			84				54			300
Link Speed (mph)		40			40			40			45	
Link Distance (ft)		167			133			292			434	
Travel Time (s)		2.8			2.3			5.0			6.6	
Peak Hour Factor	0.58	0.50	0.50	0.79	0.50	0.85	0.77	0.94	0.25	0.50	0.93	0.83
Heavy Vehicles (%)	0%	0%	0%	0%	0%	2%	0%	3%	0%	0%	4%	0%
Adj. Flow (vph)	12	16	16	187	16	84	143	548	4	8	870	310
Shared Lane Traffic (%)												
Lane Group Flow (vph)	12	32	0	187	100	0	143	548	4	8	870	310
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)		12			12			12			12	
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
Number of Detectors	1	1		1	1		1	2	1	1	2	0
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	40	40		40	40		40	100	20	20	100	0
Trailing Detector (ft)	-10	-10		-10	-10		-10	0	0	0	0	0
Detector 1 Position(ft)	-10	-10		-10	-10		-10	0	0	0	0	0
Detector 1 Size(ft)	50	50		50	50		50	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)								94			94	
Detector 2 Size(ft)								6			6	
Detector 2 Type								Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)								0.0			0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		2			6		7	4		3	8	

Lanes, Volumes, Timings
3: Garfield Drive & Beverly Rancocas Road







Build PM
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Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Permitted Phases	2			6			4		4	8		8
Detector Phase	2	2		6	6		7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		3.0	74.0	74.0	3.0	74.0	74.0
Minimum Split (s)	14.0	14.0		14.0	14.0		6.0	80.0	80.0	6.0	80.0	80.0
Total Split (s)	35.0	35.0		35.0	35.0		6.0	80.0	80.0	6.0	80.0	80.0
Total Split (%)	28.9%	28.9%		28.9%	28.9%		5.0%	66.1%	66.1%	5.0%	66.1%	66.1%
Maximum Green (s)	29.0	29.0		29.0	29.0		3.0	74.0	74.0	3.0	74.0	74.0
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	2.0	2.0		2.0	2.0		0.0	1.0	1.0	0.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0		3.0	6.0	6.0	3.0	6.0	6.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	None		None	None		None	Min	Min	None	Min	Min
Act Effct Green (s)	19.3	19.3		19.3	19.3		82.7	79.1	79.1	80.2	74.2	74.2
Actuated g/C Ratio	0.17	0.17		0.17	0.17		0.74	0.71	0.71	0.72	0.67	0.67
v/c Ratio	0.05	0.10		0.78	0.28		0.44	0.42	0.00	0.01	0.72	0.26
Control Delay	37.4	23.8		65.2	13.2		9.8	9.2	0.0	5.2	17.5	1.8
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.4	23.8		65.2	13.2		9.8	9.2	0.0	5.2	17.5	1.8
LOS	D	C		E	B		A	A	A	A	B	A
Approach Delay		27.5			47.1			9.2			13.3	
Approach LOS		C			D			A			B	

Intersection Summary

Area Type:	Other
Cycle Length:	121
Actuated Cycle Length:	111.5
Natural Cycle:	100
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.78
Intersection Signal Delay:	16.7
Intersection LOS:	B
Intersection Capacity Utilization:	96.0%
ICU Level of Service:	F
Analysis Period (min):	15

Splits and Phases: 3: Garfield Drive & Beverly Rancocas Road

 Ø2	 Ø3	 Ø4
35 s	6 s	80 s
 Ø6	 Ø7	 Ø8
35 s	6 s	80 s

Intersection						
Int Delay, s/veh	2.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		Y			Y
Traffic Vol, veh/h	19	46	348	20	43	203
Future Vol, veh/h	19	46	348	20	43	203
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	59	77	92	71	70	92
Heavy Vehicles, %	0	0	2	0	0	2
Mvmt Flow	32	60	378	28	61	221

Major/Minor	Minor1	Major1	Major2	Major2	Major2
Conflicting Flow All	735	392	0	0	406
Stage 1	392	-	-	-	-
Stage 2	343	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	390	661	-	-	1164
Stage 1	687	-	-	-	-
Stage 2	723	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	367	661	-	-	1164
Mov Cap-2 Maneuver	367	-	-	-	-
Stage 1	687	-	-	-	-
Stage 2	680	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.5	0	1.8
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	516	1164
HCM Lane V/C Ratio	-	-	0.178	0.053
HCM Control Delay (s)	-	-	13.5	8.3
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.6	0.2

Intersection						
Int Delay, s/veh	0.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y		↕		↗	
Traffic Vol, veh/h	11	13	18	357	214	8
Future Vol, veh/h	11	13	18	357	214	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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	14	20	388	233	9

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	666	238	242	0	-	0
Stage 1	238	-	-	-	-	-
Stage 2	428	-	-	-	-	-
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	425	801	1324	-	-	-
Stage 1	802	-	-	-	-	-
Stage 2	657	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	417	801	1324	-	-	-
Mov Cap-2 Maneuver	417	-	-	-	-	-
Stage 1	787	-	-	-	-	-
Stage 2	657	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.7	0.4	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1324	-	563	-	-
HCM Lane V/C Ratio	0.015	-	0.046	-	-
HCM Control Delay (s)	7.8	0	11.7	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑			↑
Traffic Vol, veh/h	0	0	808	29	0	27
Future Vol, veh/h	0	0	808	29	0	27
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	878	32	0	29























Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	-	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	6.94
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	3.32
Pot Cap-1 Maneuver	0	-	0
Stage 1	0	-	0
Stage 2	0	-	0
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	552
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	11.9
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR SBLn1
Capacity (veh/h)	-	-	552
HCM Lane V/C Ratio	-	-	0.053
HCM Control Delay (s)	-	-	11.9
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.2

Lanes, Volumes, Timings
3: Garfield Drive & Beverly Rancocas Road

Build SAT
05/27/2021

												
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	0	2	10	242	0	142	129	519	0	13	523	218
Future Volume (vph)	0	2	10	242	0	142	129	519	0	13	523	218
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		0	100		0	150		150	150		150
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	25			25			100			100		
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
Frnt		0.893			0.850							0.850
Flt Protected				0.950			0.950			0.950		
Satd. Flow (prot)	1900	1697	0	1805	1615	0	1805	1863	1900	1805	1881	1615
Flt Permitted				0.739			0.345			0.314		
Satd. Flow (perm)	1900	1697	0	1404	1615	0	656	1863	1900	597	1881	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		20			369							287
Link Speed (mph)		40			40			40			45	
Link Distance (ft)		167			155			277			434	
Travel Time (s)		2.8			2.6			4.7			6.6	
Peak Hour Factor	0.25	0.25	0.50	0.72	0.25	0.62	0.70	0.82	0.25	0.46	0.96	0.76
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	1%	0%
Adj. Flow (vph)	0	8	20	336	0	229	184	633	0	28	545	287
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	28	0	336	229	0	184	633	0	28	545	287
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)		12			12			12			12	
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
Number of Detectors	1	1		1	1		1	2	1	1	2	0
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	40	40		40	40		40	100	20	20	100	0
Trailing Detector (ft)	-10	-10		-10	-10		-10	0	0	0	0	0
Detector 1 Position(ft)	-10	-10		-10	-10		-10	0	0	0	0	0
Detector 1 Size(ft)	50	50		50	50		50	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)								94			94	
Detector 2 Size(ft)								6			6	
Detector 2 Type								Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)								0.0			0.0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		2			6		7	4		3	8	

Lanes, Volumes, Timings
3: Garfield Drive & Beverly Rancocas Road

Build SAT
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Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Permitted Phases	2			6			4		4	8		8
Detector Phase	2	2		6	6		7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		3.0	64.0	64.0	3.0	64.0	64.0
Minimum Split (s)	14.0	14.0		14.0	14.0		8.0	70.0	70.0	8.0	70.0	70.0
Total Split (s)	35.0	35.0		35.0	35.0		8.0	70.0	70.0	8.0	70.0	70.0
Total Split (%)	31.0%	31.0%		31.0%	31.0%		7.1%	61.9%	61.9%	7.1%	61.9%	61.9%
Maximum Green (s)	29.0	29.0		29.0	29.0		5.0	64.0	64.0	5.0	64.0	64.0
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	5.0	5.0	3.0	5.0	5.0
All-Red Time (s)	2.0	2.0		2.0	2.0		0.0	1.0	1.0	0.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0		3.0	6.0	6.0	3.0	6.0	6.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	None		None	None		None	Min	Min	None	Min	Min
Act Effct Green (s)		28.1		28.1	28.1		73.2	67.2		71.8	64.0	64.0
Actuated g/C Ratio		0.25		0.25	0.25		0.65	0.60		0.64	0.57	0.57
v/c Ratio		0.06		0.95	0.34		0.38	0.57		0.06	0.51	0.27
Control Delay		16.8		80.2	1.3		9.8	17.0		6.9	16.8	2.0
Queue Delay		0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay		16.8		80.2	1.3		9.8	17.0		6.9	16.8	2.0
LOS		B		F	A		A	B		A	B	A
Approach Delay		16.8			48.2			15.4			11.6	
Approach LOS		B			D			B			B	

Intersection Summary

Area Type: Other
 Cycle Length: 113
 Actuated Cycle Length: 112.1
 Natural Cycle: 105
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.95
 Intersection Signal Delay: 22.1
 Intersection Capacity Utilization 93.9%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service F

Splits and Phases: 3: Garfield Drive & Beverly Rancocas Road

Ø2	Ø3	Ø4
35 s	8 s	70 s
Ø6	Ø7	Ø8
35 s	8 s	70 s

Intersection						
Int Delay, s/veh	2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		T			T
Traffic Vol, veh/h	22	46	304	33	38	354
Future Vol, veh/h	22	46	304	33	38	354
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	69	64	92	64	79	92
Heavy Vehicles, %	0	0	2	0	0	2
Mvmt Flow	32	72	330	52	48	385

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	837	356	0	0	382
Stage 1	356	-	-	-	-
Stage 2	481	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	339	693	-	-	1188
Stage 1	713	-	-	-	-
Stage 2	626	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	322	693	-	-	1188
Mov Cap-2 Maneuver	322	-	-	-	-
Stage 1	713	-	-	-	-
Stage 2	594	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.8	0	0.9
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	512	1188
HCM Lane V/C Ratio	-	-	0.203	0.04
HCM Control Delay (s)	-	-	13.8	8.2
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.8	0.1

Intersection						
Int Delay, s/veh	1.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↕		↔	
Traffic Vol, veh/h	20	30	32	317	354	22
Future Vol, veh/h	20	30	32	317	354	22
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	22	33	35	345	385	24

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	812	397	409	0	-	0
Stage 1	397	-	-	-	-	-
Stage 2	415	-	-	-	-	-
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	348	652	1150	-	-	-
Stage 1	679	-	-	-	-	-
Stage 2	666	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	335	652	1150	-	-	-
Mov Cap-2 Maneuver	335	-	-	-	-	-
Stage 1	653	-	-	-	-	-
Stage 2	666	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.6	0.8	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1150	-	473	-	-
HCM Lane V/C Ratio	0.03	-	0.115	-	-
HCM Control Delay (s)	8.2	0	13.6	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.4	-	-

Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑↑			↑
Traffic Vol, veh/h	0	0	629	36	0	37
Future Vol, veh/h	0	0	629	36	0	37
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	684	39	0	40

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	-	0	0 - 362
Stage 1	-	-	- - -
Stage 2	-	-	- - -
Critical Hdwy	-	-	- - 6.93
Critical Hdwy Stg 1	-	-	- - -
Critical Hdwy Stg 2	-	-	- - -
Follow-up Hdwy	-	-	- - 3.319
Pot Cap-1 Maneuver	0	-	- - 0 635
Stage 1	0	-	- - 0 -
Stage 2	0	-	- - 0 -
Platoon blocked, %	-	-	- - -
Mov Cap-1 Maneuver	-	-	- - 635
Mov Cap-2 Maneuver	-	-	- - -
Stage 1	-	-	- - -
Stage 2	-	-	- - -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	11.1
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR SBLn1
Capacity (veh/h)	-	-	- 635
HCM Lane V/C Ratio	-	-	- 0.063
HCM Control Delay (s)	-	-	- 11.1
HCM Lane LOS	-	-	- B
HCM 95th %tile Q(veh)	-	-	- 0.2