Shropshire Associates LLC

SBE Certified

Traffic Engineering, Transportation Planning & Design

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

David R. Shropshire, PE, PP
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March 15, 2024

Mr. Jason M. Fogler, PE
MidAtlantic Engineering Partners
1971 Highway 34 - Suite 201
Wall Township, NJ 07719

(via UPS email:JFogler@MidAtlanticEng.com)

Re: **Traffic Engineering Assessment**
Beachway Avenue Residential Redevelopment
Keansburg Borough, Monmouth County, NJ
SA Project No. 23131

Dear Jay:

At your request, Shropshire Associates, LLC prepared the following Traffic Engineering for the proposed residential development along Beachway Avenue in the Borough of Keansburg, Monmouth County, NJ.

The site currently has two (2) curb openings along Beachway Avenue but is vacant. The proposal is to construct three (3) four-story condominium buildings with a total of 96 units and corresponding site improvements for access circulation and parking. Additionally, a parking lot with 199 spaces will be provided for parking. The site has two (2) existing driveways along Beachway Avenue that will be used as driveways for the proposed development. The purpose of this assessment is to determine the amount of traffic to be generated by the proposed condominium development and to analyze the impact of site traffic on the adjacent roadway network.

Existing Conditions

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

In the vicinity of the site, **Beachway Avenue** is a two (2) lane local roadway under the jurisdiction of the Borough of Keansburg. Beachway Avenue has an approximate cartway width of 24 feet (ft) with one (1) 12 ft lane in each direction. The posted speed limit along this section of Beachway Avenue is 25 MPH. For the purpose of this study, Beachway Avenue is assumed to extend in a general north-south direction.

In the vicinity of the site, **Oakwood Place** is a two (2) lane local roadway under the jurisdiction of the Borough of Keansburg. Oakwood Place has an approximate cartway width of 30 ft with one (1) 15 ft lane in each direction. The posted speed limit along this section of Oakwood Place is 25 MPH. For the purpose of this study, Oakwood Place is assumed to extend in a general east-west direction.

In the vicinity of the site, **Seabreeze Way** is a two (2) lane local roadway under the jurisdiction of the Borough of Keansburg. Seabreeze Way has an approximate cartway width of 26 ft with one (1) 13 foot lane in each direction. The posted speed limit along Seabreeze Way is 25 MPH. For the purpose of this study, Seabreeze Way is assumed to extend in a general east-west direction.

In the vicinity of the site, **Charles Avenue** is a two (2) lane local roadway under the jurisdiction of the Borough of Keansburg. Charles Avenue has an approximate cartway width of 28 feet with one (1) 14 foot lane in each direction. The posted speed limit along Charles Avenue is 25 MPH. For the purpose of this study, Charles Avenue is assumed to extend in a general north-south direction.

The **Beachway Avenue/Oakwood Place** intersection is a T-type intersection that is stop-controlled along the westbound Oakwood Place approach. All approaches consist of a single lane for all permitted units.

The **Beachway Avenue/Seabreeze Way/Charles Avenue** intersection is a four-way intersection that is stop-controlled along the eastbound Charles Avenue approach and the westbound Seabreeze Way approach. All approaches consist of a single lane for all permitted movements.

Traffic Count Data

To determine the amount of traffic on the adjacent roadway network, manual turning movement counts (MTMC) were conducted on Thursday, May 25, 2023 during the morning (7:00AM-9:00AM) and afternoon (4:00PM-6:00PM) commuter peak periods. A summary of the traffic counts can be found in the appendix to this assessment, with the existing AM and PM peak hour volumes shown in Figure 1.

Future Conditions

The traffic resulting from the proposed condominium development will not affect the adjacent roadway network until it is fully built-out and occupied, which is anticipated to be by the year 2025.

With the site along the New Jersey coast, a NJDOT seasonal factor of 1.014% was applied to adjust existing volumes to account for the additional traffic in the vicinity of the site during the peak time of year. It also can be expected that the traffic volumes along the adjacent roadway network will increase as a result of other developments in the area of the site and general area traffic growth. Based on the *Annual Background Growth Table* prepared by the New Jersey Department of Transportation (NJDOT), a 2.50% annual traffic growth is projected along Beachway Avenue vicinity of the site. By applying a 2.50% annual growth rate to the respective 2025 roadway volumes, the 2025 No-Build volumes were calculated and are indicated on Figure 2.

Trip Generation

The proposed development includes three (3) four-story condominium buildings with a total of 96 units. The amount of traffic to be generated by the proposed condominium can best be estimated based on data published by the Institute of Transportation Engineers (ITE). ITE has compiled data from thousands of studies for various land uses, independent

variables and study periods, and published the results in *Trip Generation, 11th Edition*. The proposed development is most similar to ITE Land Use 411: Public Park. The detailed trip generation worksheets are attached for reference. The trips generated by the proposed development are summarized in Table 1.

Table 1
ITE Trip Generation - Beachway Avenue Condominiums

Land Use	AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total
Residential Condos (96 Units)	13	40	53	39	23	62

The site traffic generated by this development was distributed to the adjacent roadway network in a manner in which residents are expected to travel. The site trips were assigned based on existing traffic distributions in the vicinity of the site. The resulting trip distributions and site traffic assignments are illustrated on Figure 3 and 4; respectively. In order to project the 2025 Build traffic conditions, the 2025 No-Build traffic volumes (Figure 2) were combined with the site traffic assignments (Figure 4). The 2025 Build traffic volumes are illustrated on Figure 5.

Operational Analysis

In order to measure the quality of the traffic flow for the adjacent roadway and proposed driveways, capacity analyses 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 a LOS A representing the best operating conditions and a LOS F representing the worst operating conditions.

The determination for the Level of Service 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 unsignalized intersections is summarized below in Table 2.

Table 2
Level of Service Criteria

Level of Service	Unsignalized Delay (sec)
A	≤ 10
B	> 10 and ≤ 15
C	> 15 and ≤ 25
D	> 25 and ≤ 35
E	> 35 and ≤ 50
F	> 50

In order to assess the traffic impact of the proposed development, the roadway network was evaluated under the Existing, 2025 No-Build and 2025 Build conditions using the above-described methodology. A detailed description of the study intersections' operations under the three scenarios is provided below, with the resulting Existing, No-Build and Build Levels of Service illustrated on Figures 6, 7, and 8; respectively. The capacity analysis worksheets are attached for reference.

Beachway Avenue/Seabreeze Way/Charles Avenue Intersection

Under the Existing conditions, all individual movements at the intersection currently operate with LOS A during the weekday AM and weekday PM peak hours with the exception of the westbound Seabreeze Way approach which operates with LOS B during the weekday AM and weekday PM peak hours.

Under the 2025 No-Build conditions, all individual movements will continue to operate at existing levels of service.

Under the 2025 Build conditions all individual movements will continue to operate at 2025 No-Build levels of service with the exception of the eastbound Charles Avenue approach which will operate at a LOS B during the weekday PM peak hour.

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Beachway Avenue/Oakwood Place Intersection

Under the Existing conditions, all individual movements at the intersection currently operate with LOS A during the weekday AM and weekday PM peak hours.

Under the 2025 No-Build and Build scenarios, all individual movements will continue to operate at existing levels of service.

Site Driveways/Beachway Avenue Intersections

Under the 2025 Build conditions, two (2) new driveways will be constructed along southbound Beachway Avenue to provide access to the proposed development. All conflicting movements at the driveways will operate at a LOS A during the weekday AM and weekday PM peak hours with the exception of the northern driveway outbound movement which will operate at a LOS B during the weekday PM.

Site Layout

The proposal is for three (3) four-story buildings each with 32 condominium units and 25 underdeck parking spaces on the ground floor. Entry to the underdeck parking is provided via a single 22 ft wide two-way driveway for each of the three (3) buildings. The site will have two (2) full movement driveways along southbound Beachway Avenue for access to the site. The two (2) driveways connect with a 24 ft circulation aisle for access to parking. There are 75 underdeck parking spaces (25 underdeck parking spaces in each of the 3 buildings) and 124 parking spaces distributed around the buildings for a total of 199 parking spaces. The 199 parking spaces include five (5) handicap parking spaces and 29 electronic vehicle (EV) charging spaces. One of the HC spaces is designated for EV charging.

Conclusion

Based on the traffic analysis provided in this report, the proposed condominium development including 96 units will have a minimal impact on the adjacent roadway network and the study intersections based on the following findings:

- The proposed site will generate 53 AM trips and 62 PM trips during the critical morning and afternoon peak hours. These trips will be distributed via two (2) driveways for access to Beachway Avenue.

- Under the Build conditions, all individual movements at the site driveway and study intersections will operate with a LOS B or better.

- Under the Build conditions, all the individual movements at the site driveways will operate at a LOS A with the exception of the PM exit movements at the northern site driveway.

- The site layout meets generally accepted traffic engineering design standards. The site has two (2) driveways for access. Circulation on site provided efficient access to parking. A total of 199 parking spaces are provided including 5 HC spaces and 29 EV spaces.

Please call if you have any questions.

Sincerely,
Shropshire Associates LLC

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

Shropshire Associates LLC
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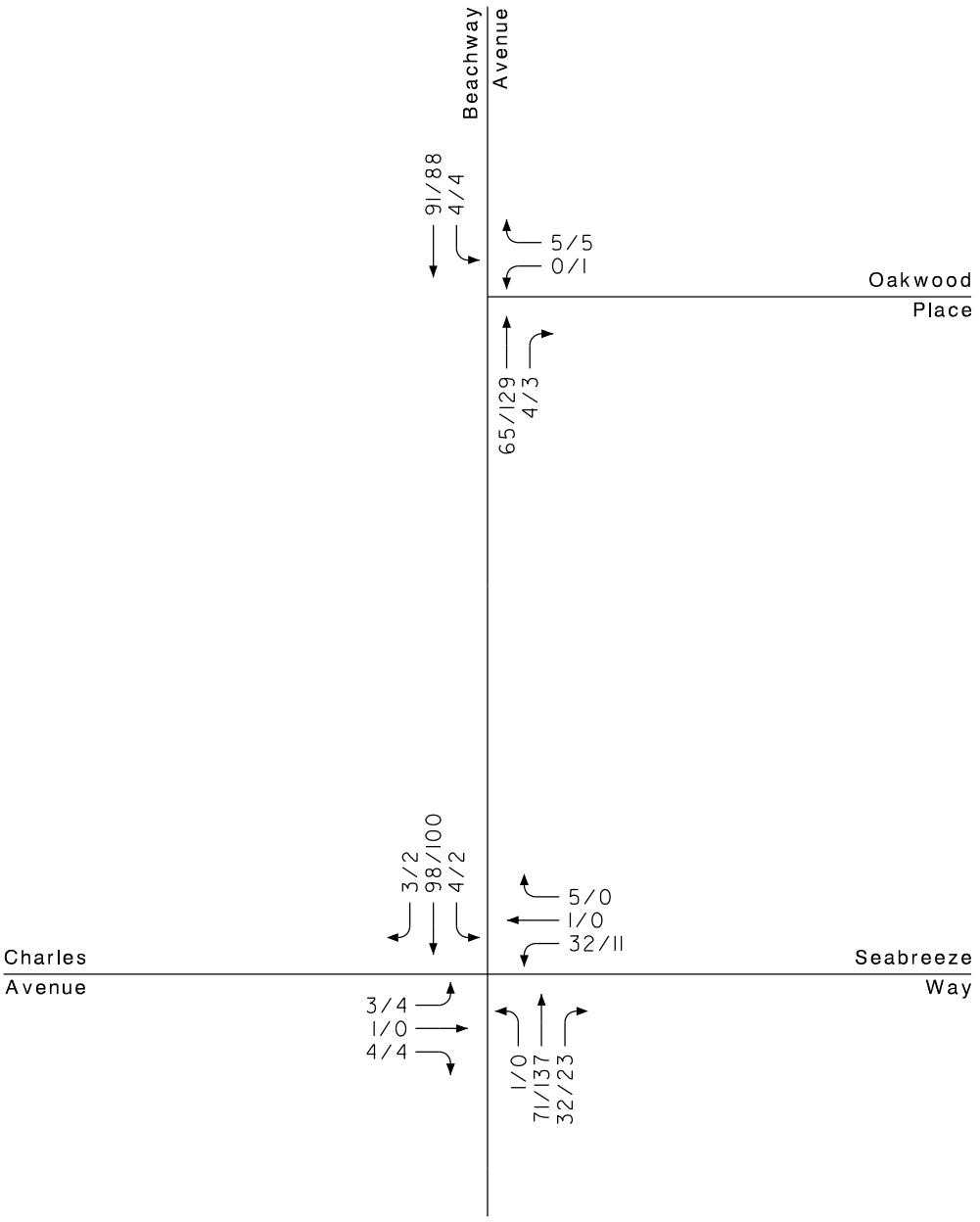
FIGURE 1
EXISTING VOLUMES

N



Beachway Avenue Residential Development

Keensburg Borough, Monmouth County, NJ

March 2024

TRAFFIC SIGNAL

AM/PM PEAK HOUR

SA Project No. 23131

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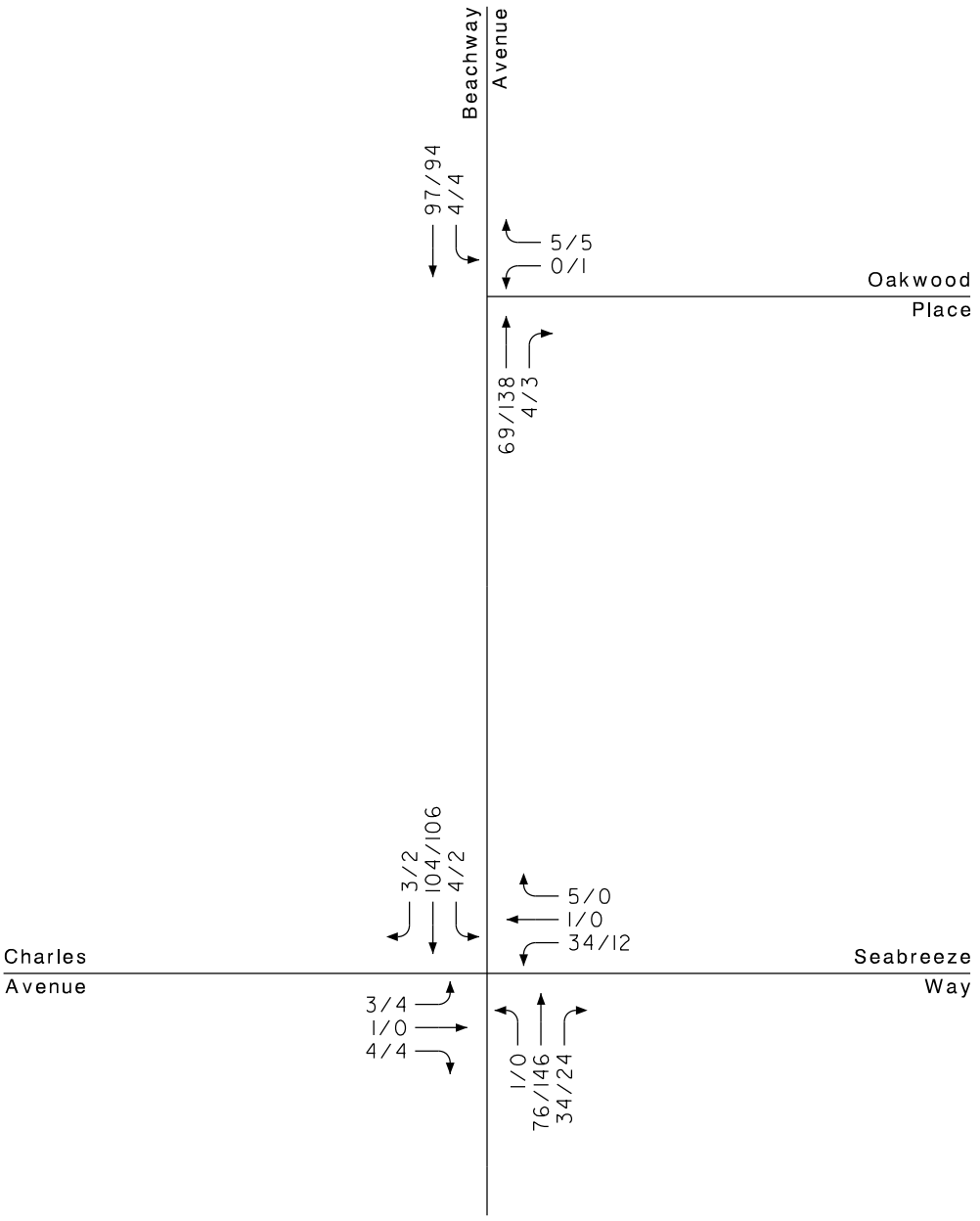
FIGURE 2
NO-BUILD VOLUMES

N



Beachway Avenue Residential Development

Keensburg Borough, Monmouth County, NJ
March 2024

TRAFFIC SIGNAL
AM/PM PEAK HOUR

SA Project No. 23131

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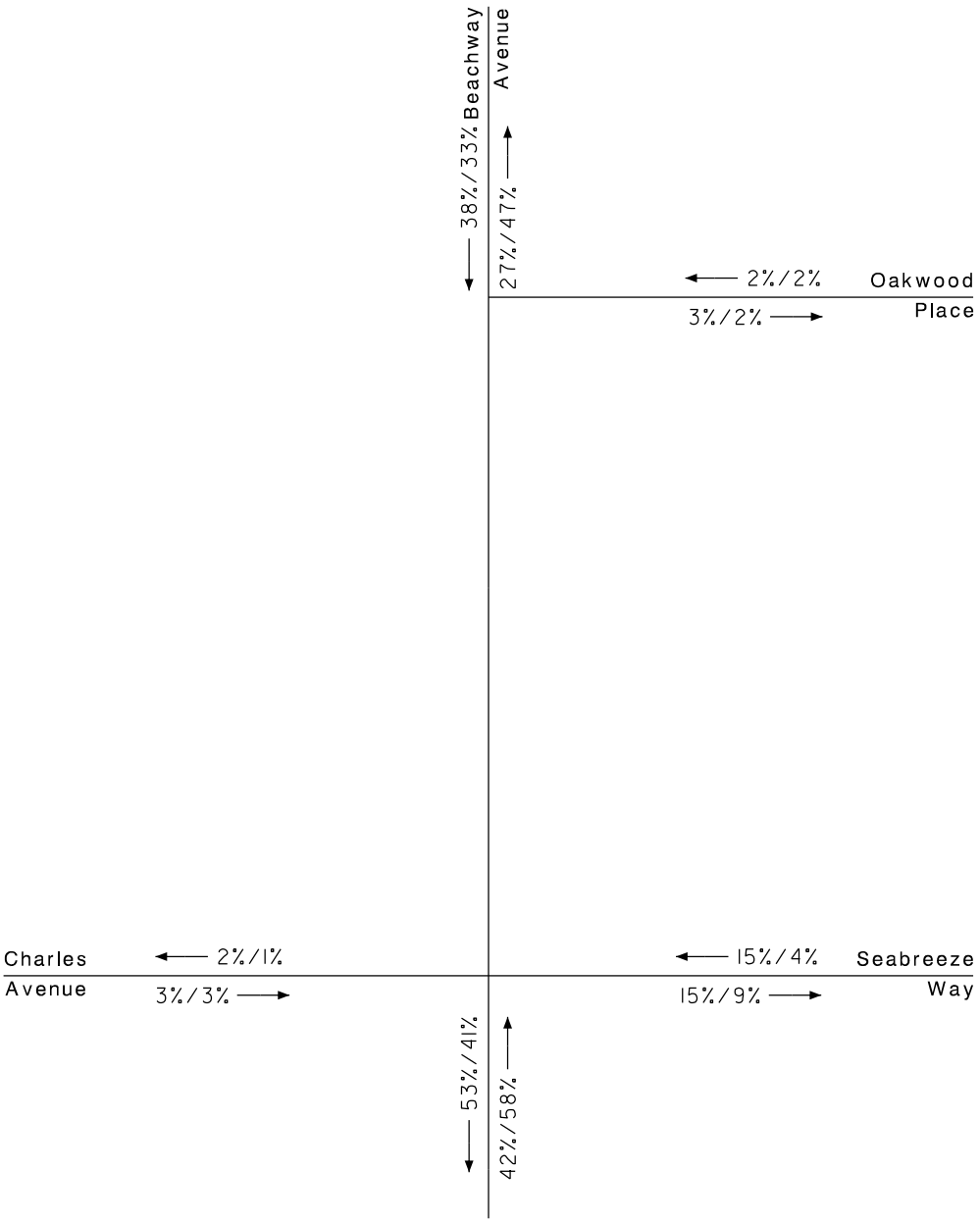
FIGURE 3
TRIP DISTRIBUTION



Beachway Avenue Residential Development

Keensburg Borough, Monmouth County, NJ
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TRAFFIC SIGNAL
AM/PM PEAK HOUR

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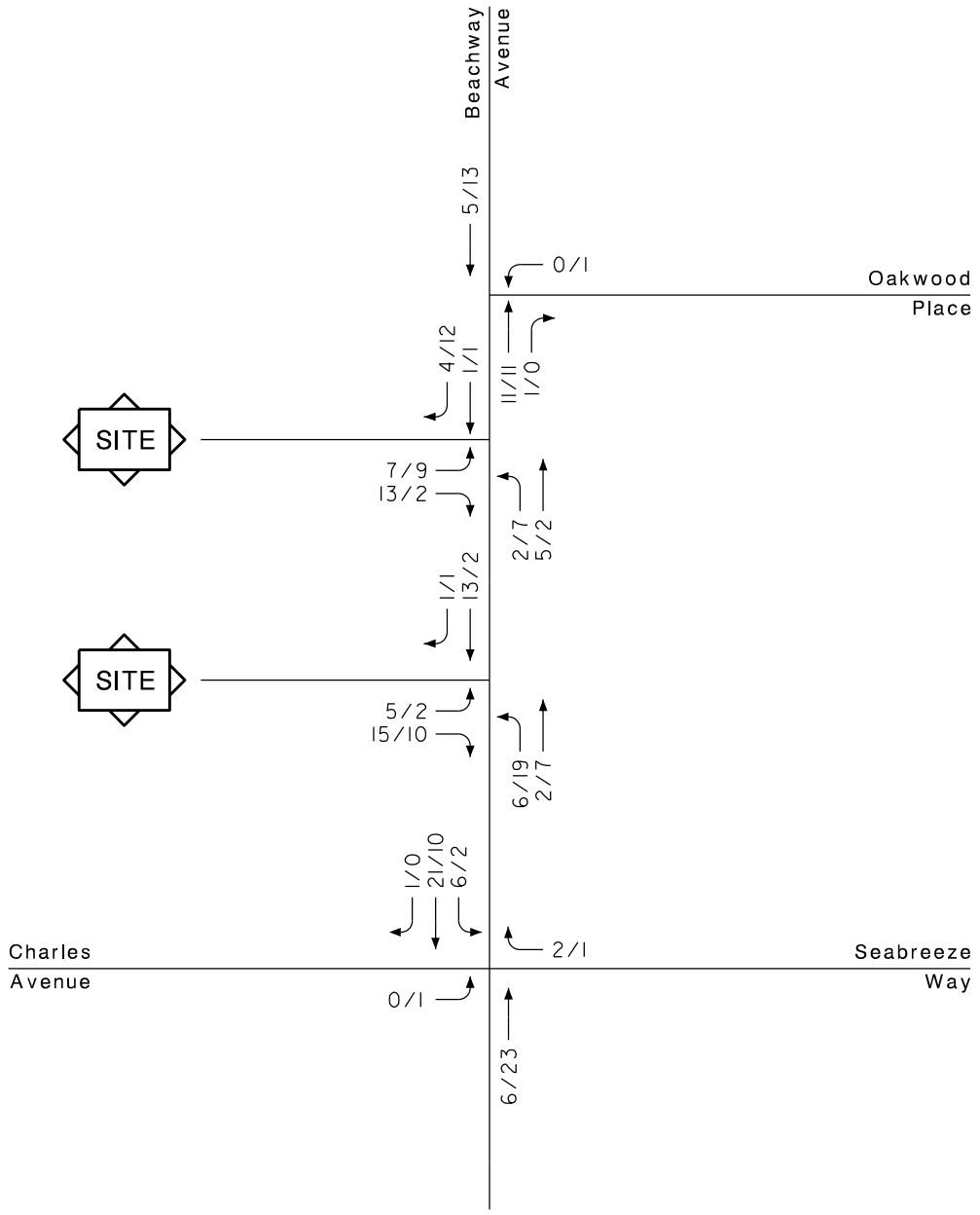
FIGURE 4
SITE TRAFFIC



Beachway Avenue Residential Development

Keensburg Borough, Monmouth County, NJ
March 2024

TRAFFIC SIGNAL

AM/PM PEAK HOUR

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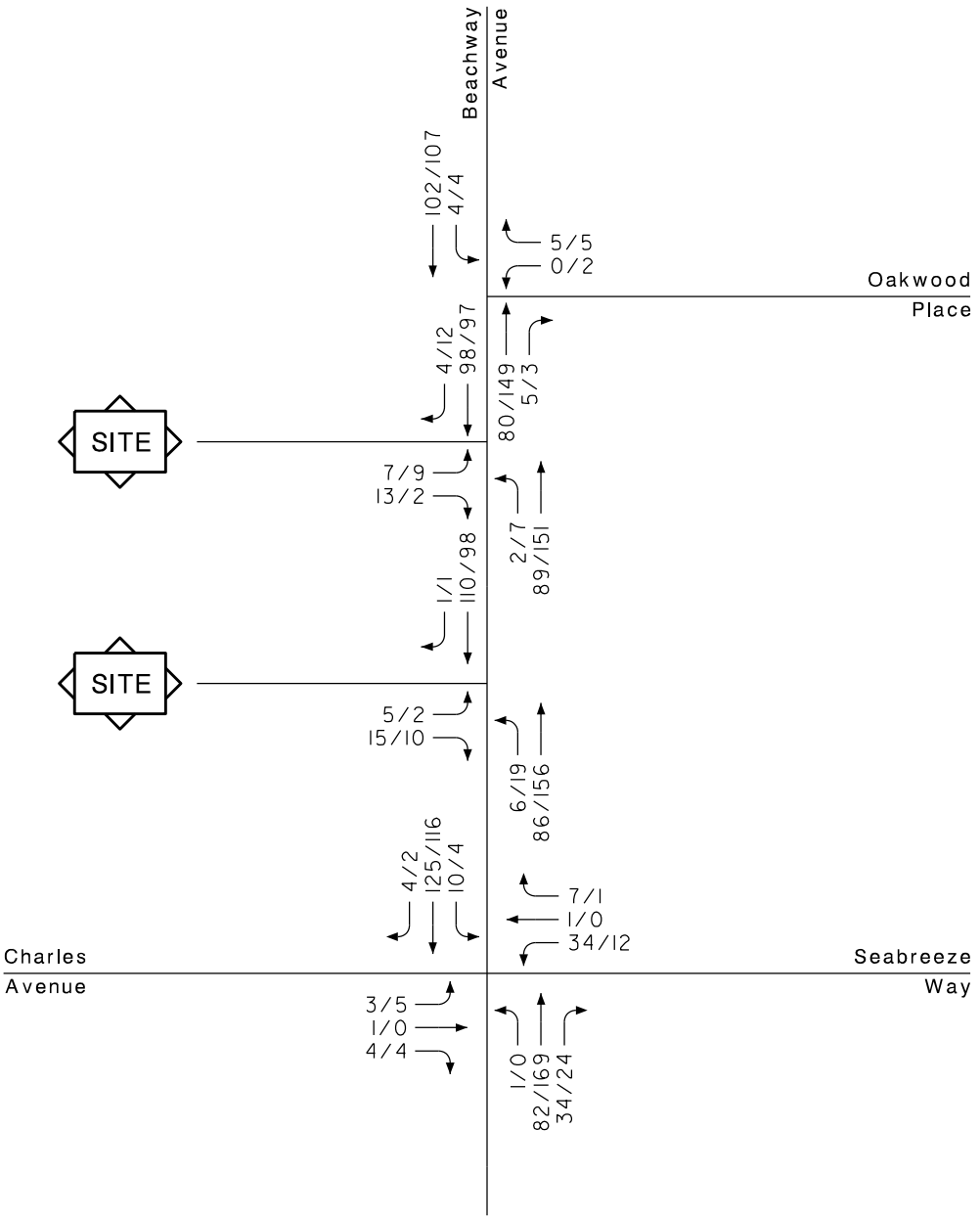
FIGURE 5
BUILD VOLUMES

N



Beachway Avenue Residential Development

Keensburg Borough, Monmouth County, NJ
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TRAFFIC SIGNAL
AM/PM PEAK HOUR

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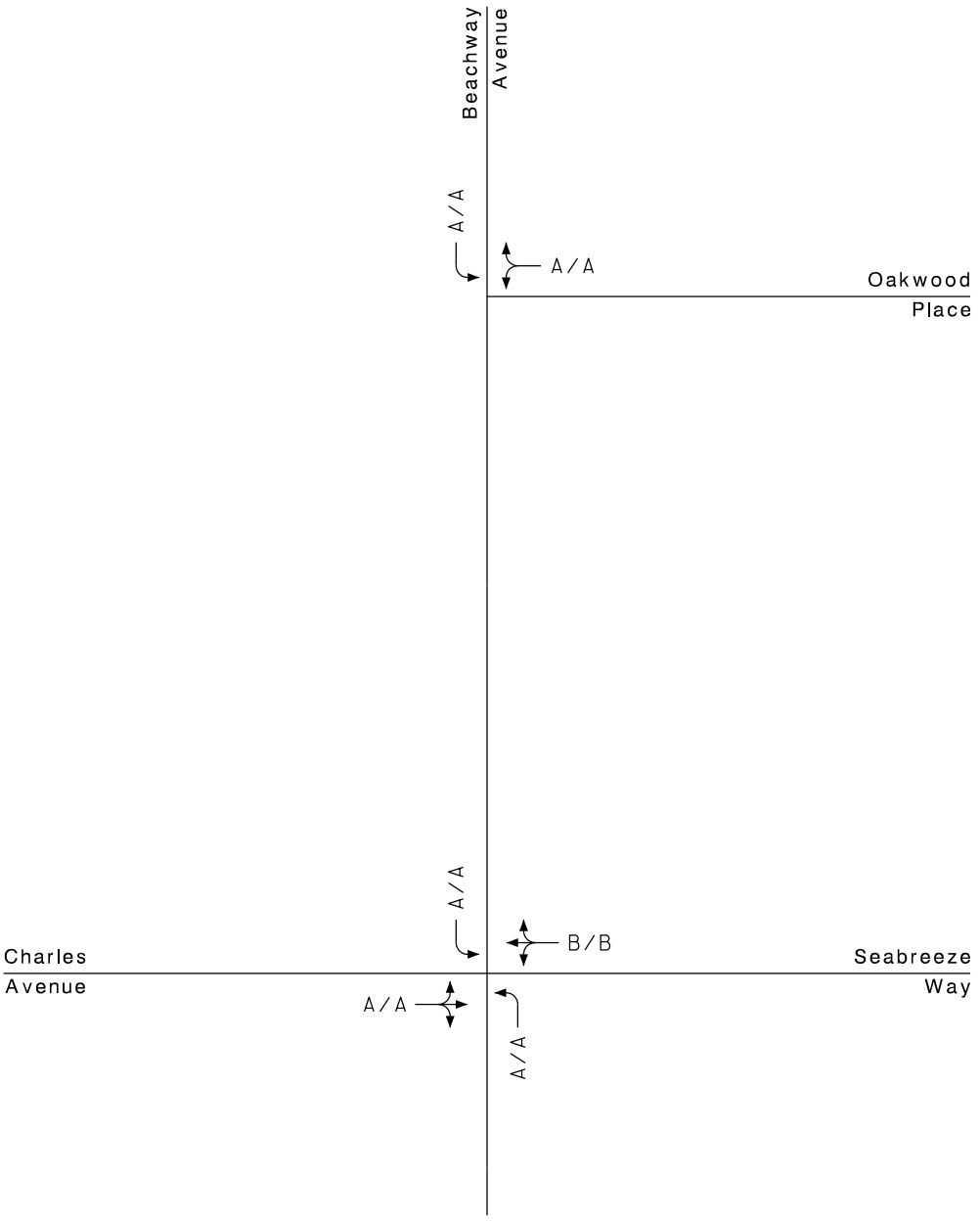
FIGURE 6
EXISTING LEVELS OF SERVICE

N



Beachway Avenue Residential Development

Keensburg Borough, Monmouth County, NJ
March 2024

TRAFFIC SIGNAL
AM/PM PEAK HOUR

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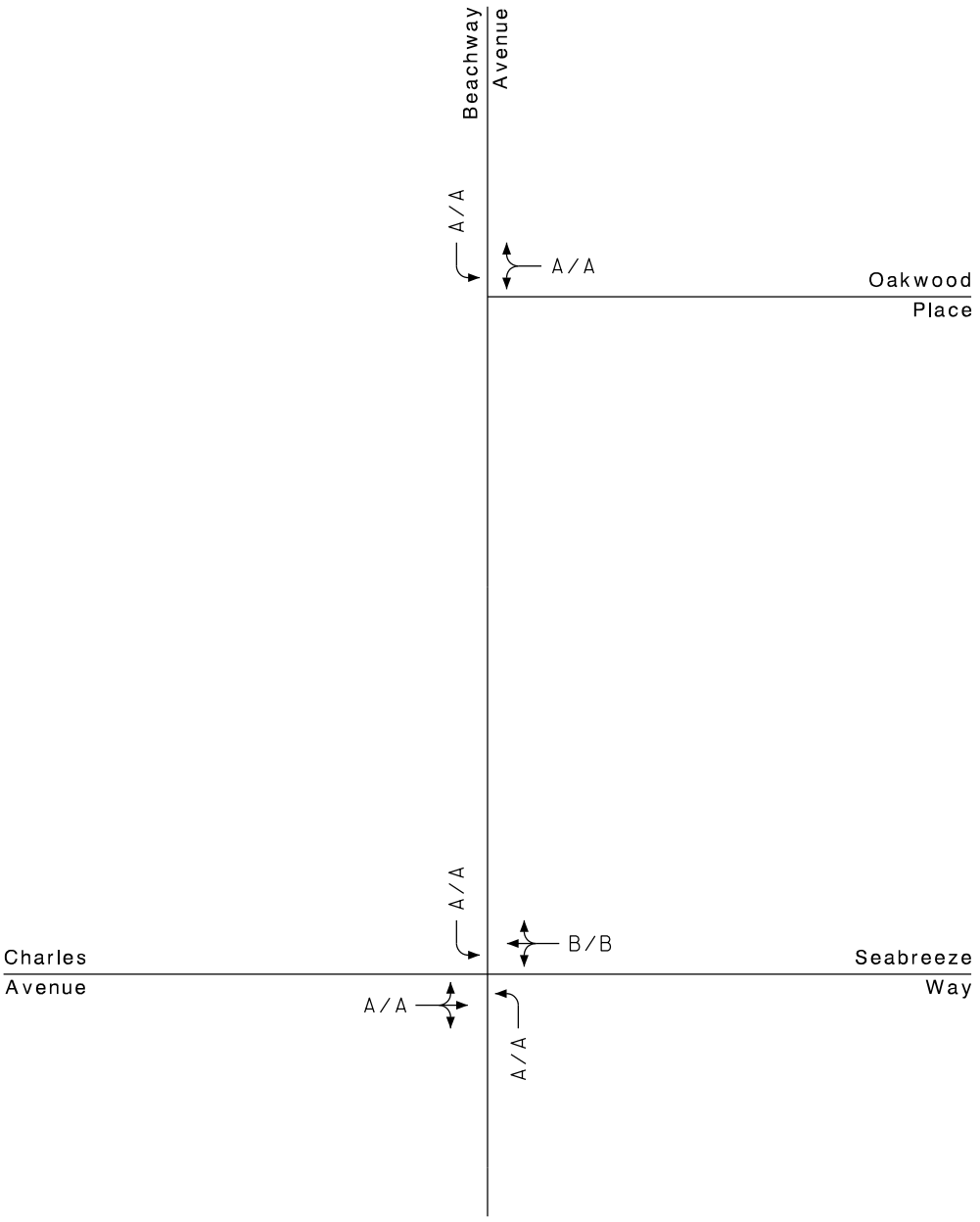
FIGURE 7
NO-BUILD LEVELS OF SERVICE

N



Beachway Avenue Residential Development

Keensburg Borough, Monmouth County, NJ
March 2024

TRAFFIC SIGNAL
AM/PM PEAK HOUR

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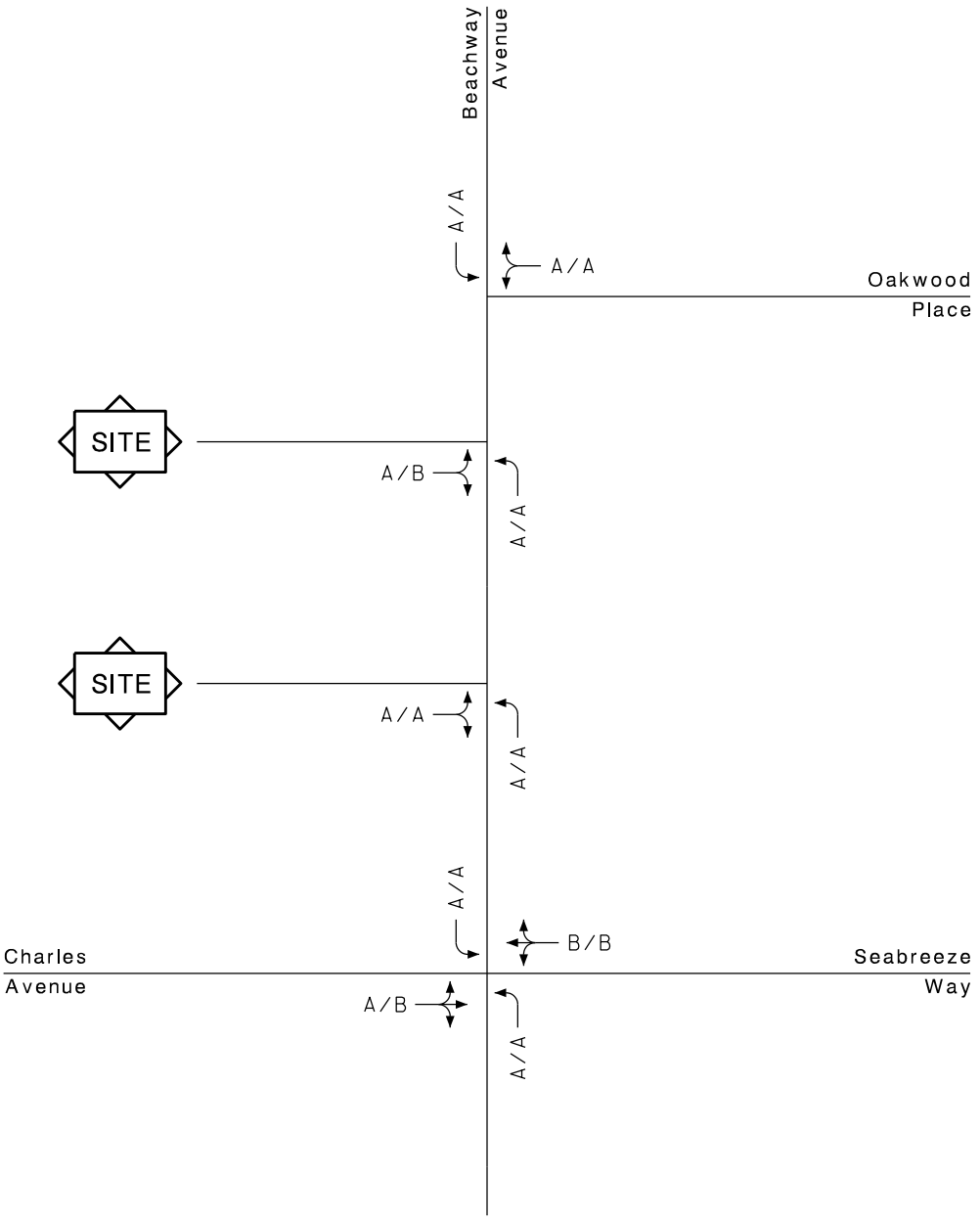
FIGURE 8
BUILD LEVELS OF SERVICE

N



Beachway Avenue Residential Development

Keensburg Borough, Monmouth County, NJ
March 2024

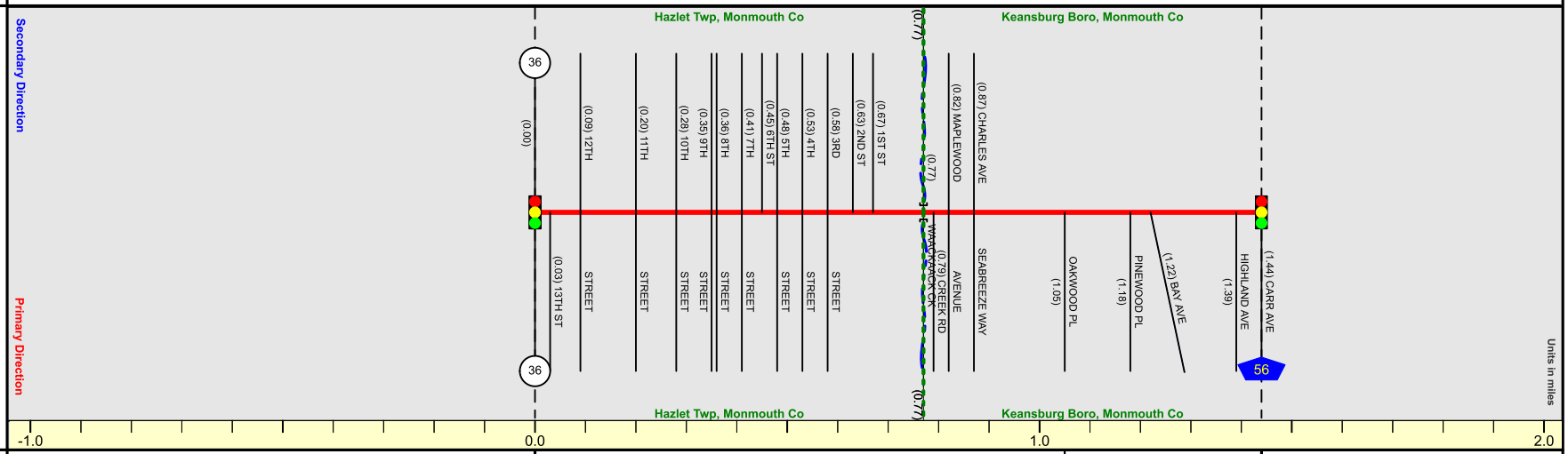
TRAFFIC SIGNAL
AM/PM PEAK HOUR

SA Project No. 23131

LAUREL AVE (South to North)

Mile Posts: 0.000 - 1.440

Pavement	
Shoulder	
Number of Lanes	
Speed Limit	
Street Name	



Street Name	Laurel Avenue	Beachway	
Jurisdiction	Municipal		
Functional Class	Urban Major Collector		
Federal Aid - NHS Sy	STP		
Control Section			
Speed Limit	35	25	
Number of Lanes	2		
Med. Type	None		
Med. Width			
Pavement	40	26 / 32 / 28 / 40	
Shoulder			
Traffic Volume			
Traffic Sta. ID			
Structure No.	1300R11		
Enlarged Views			

Begin Laurel Ave MP=0

End Laurel Ave MP=1.44

SRI = 13391283__

Date last inventoried: July 2017

Page Created: June, 2020

Shropshire Associates LLC

277 Whitehorse Pike, Suite 203
Atco, NJ 08004

N/S Route: Laurel Ave./Beachway Ave.
E/W Route: Seabreeze Way/Charles Ave.
Keansburg/Monmouth County/NJ
Thursday/Clear/JH/D4-2870

File Name : 23131001
Site Code : 23131001
Start Date : 5/25/2023

Groups Printed- Unshifted - Tractor Trailers

	Beachway Ave. Southbound				Seabreeze Way Westbound				Laurel Ave. Northbound				Charles Ave. Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
07:00 AM	1	27	1	29	4	0	8	12	3	20	0	23	4	0	1	5	69
07:15 AM	0	18	4	22	1	0	5	6	3	10	0	13	0	0	0	0	41
07:30 AM	3	25	2	30	2	1	8	11	6	10	0	16	3	0	0	3	60
07:45 AM	0	30	0	30	1	0	9	10	10	22	1	33	1	0	1	2	75
Total	4	100	7	111	8	1	30	39	22	62	1	85	8	0	2	10	245
08:00 AM	0	25	0	25	1	0	7	8	9	19	0	28	0	1	2	3	64
08:15 AM	0	18	2	20	1	0	8	9	7	20	0	27	0	0	0	0	56
08:30 AM	0	17	2	19	1	0	9	10	1	12	1	14	0	0	0	0	43
08:45 AM	0	19	1	20	1	0	4	5	2	21	0	23	0	0	0	0	48
Total	0	79	5	84	4	0	28	32	19	72	1	92	0	1	2	3	211
*** BREAK ***																	
04:00 PM	0	28	1	29	0	0	3	3	7	38	0	45	2	0	2	4	81
04:15 PM	0	21	0	21	0	0	4	4	2	38	0	40	1	0	1	2	67
04:30 PM	2	26	0	28	0	0	3	3	7	36	0	43	1	0	0	1	75
04:45 PM	0	25	1	26	0	0	1	1	7	25	0	32	0	0	1	1	60
Total	2	100	2	104	0	0	11	11	23	137	0	160	4	0	4	8	283
05:00 PM	0	24	0	24	1	0	2	3	1	39	0	40	1	0	0	1	68
05:15 PM	0	10	0	10	0	0	2	2	6	37	0	43	1	0	0	1	56
05:30 PM	0	30	0	30	0	0	5	5	2	32	1	35	1	0	0	1	71
05:45 PM	0	18	0	18	0	0	6	6	7	40	1	48	1	0	0	1	73
Total	0	82	0	82	1	0	15	16	16	148	2	166	4	0	0	4	268
Grand Total	6	361	14	381	13	1	84	98	80	419	4	503	16	1	8	25	1007
Apprch %	1.6	94.8	3.7		13.3	1	85.7		15.9	83.3	0.8		64	4	32		
Total %	0.6	35.8	1.4	37.8	1.3	0.1	8.3	9.7	7.9	41.6	0.4	50	1.6	0.1	0.8	2.5	
Unshifted	6	361	14	381	13	1	84	98	80	419	4	503	16	1	8	25	1007
% Unshifted	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Tractor Trailers	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Tractor Trailers	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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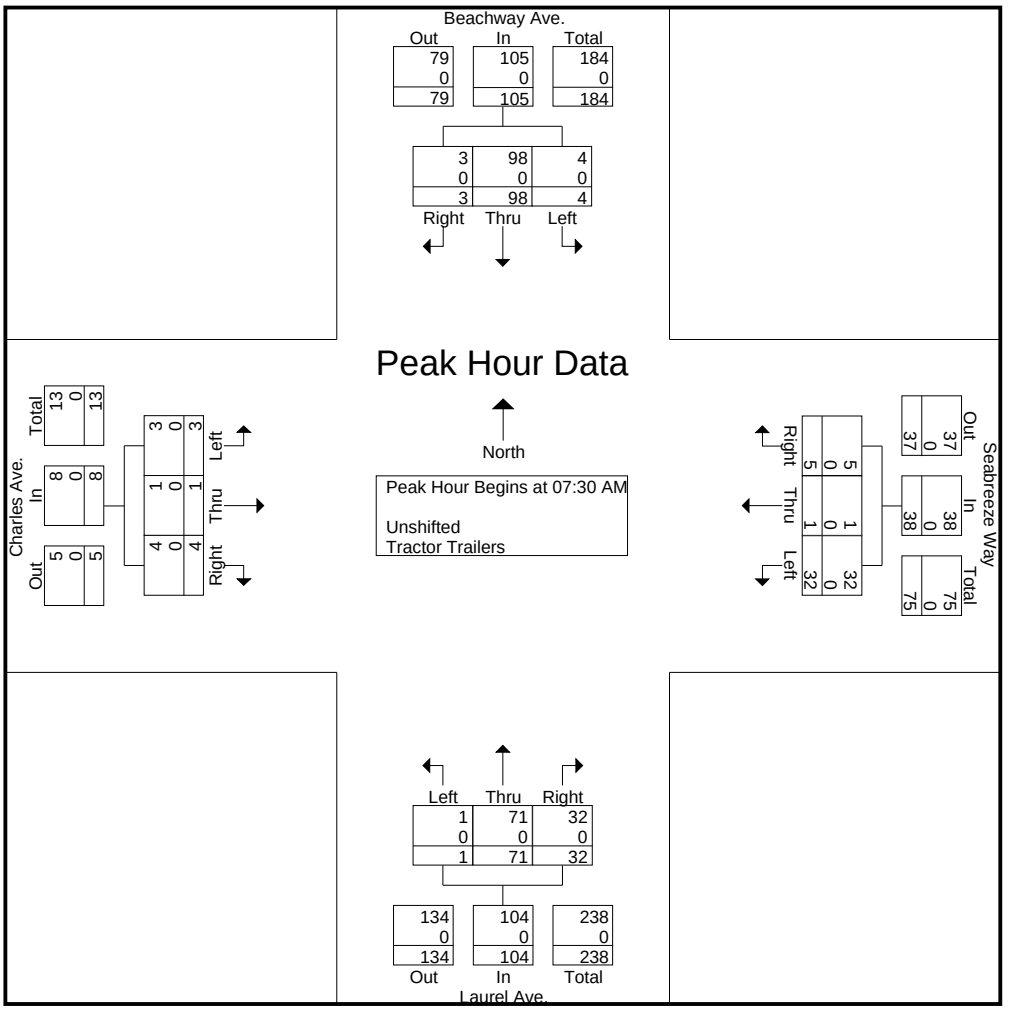
Start Date : 5/25/2023
Page No : 2

	Beachway Ave. Southbound				Seabreeze Way Westbound				Laurel Ave. Northbound				Charles Ave. Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	**3**	25	**2**	**30**	**2**	**1**	8	**11**	6	10	0	16	**3**	0	0	**3**	60
07:45 AM	0	**30**	0	30	1	0	**9**	10	**10**	**22**	**1**	**33**	1	0	1	2	**75**
08:00 AM	0	25	0	25	1	0	7	8	9	19	0	28	0	**1**	**2**	3	64
08:15 AM	0	18	2	20	1	0	8	9	7	20	0	27	0	0	0	0	56
Total Volume	3	98	4	105	5	1	32	38	32	71	1	104	4	1	3	8	255
% App. Total	2.9	93.3	3.8		13.2	2.6	84.2		30.8	68.3	1		50	12.5	37.5		
PHF	.250	.817	.500	.875	.625	.250	.889	.864	.800	.807	.250	.788	.333	.250	.375	.667	.850
Unshifted	3	98	4	105	5	1	32	38	32	71	1	104	4	1	3	8	255
% Unshifted	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Tractor Trailers	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Tractor Trailers	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



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File Name : 23131001
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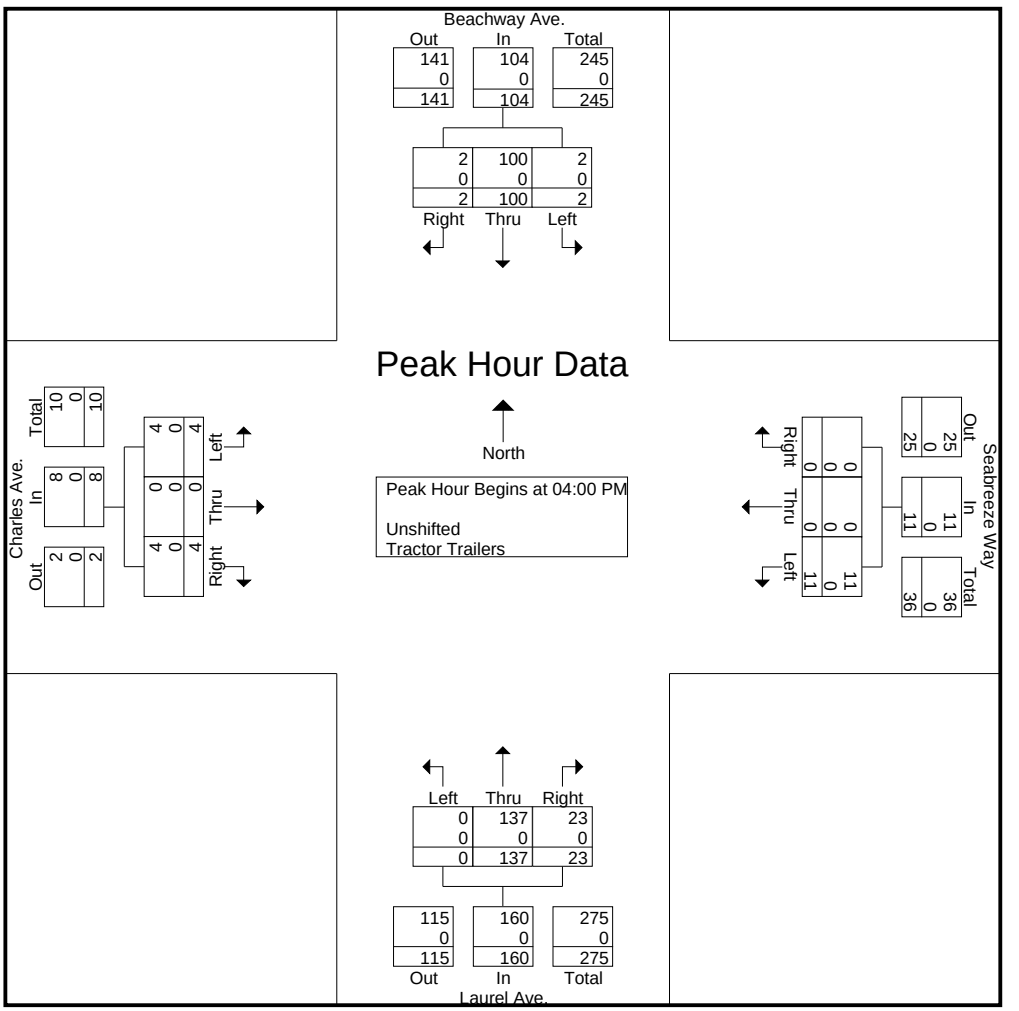
Start Date : 5/25/2023
Page No : 3

	Beachway Ave. Southbound				Seabreeze Way Westbound				Laurel Ave. Northbound				Charles Ave. Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	**28**	**1**	**29**	0	0	3	3	**7**	**38**	0	**45**	**2**	0	**2**	**4**	**81**
04:15 PM	0	21	0	21	0	0	**4**	**4**	2	38	0	40	1	0	1	2	67
04:30 PM	**2**	26	0	28	0	0	3	3	7	36	0	43	1	0	0	1	75
04:45 PM	0	25	1	26	0	0	1	1	7	25	0	32	0	0	1	1	60
Total Volume	2	100	2	104	0	0	11	11	23	137	0	160	4	0	4	8	283
% App. Total	1.9	96.2	1.9		0	0	100		14.4	85.6	0		50	0	50		
PHF	.250	.893	.500	.897	.000	.000	.688	.688	.821	.901	.000	.889	.500	.000	.500	.500	.873
Unshifted	2	100	2	104	0	0	11	11	23	137	0	160	4	0	4	8	283
% Unshifted	100	100	100	100	0	0	100	100	100	100	0	100	100	0	100	100	100
Tractor Trailers	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Tractor Trailers	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



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E/W Route: Oakwood Place
Keansburg/Monmouth County/NJ
Thursday/Clear/EM/D4-3730

File Name : 23131002
Site Code : 23131002
Start Date : 5/25/2023
Page No : 1

Groups Printed- Unshifted - Tractor Trailers

	Beachway Ave. Southbound			Oakwood Place Westbound			Beachway Ave. Northbound			
Start Time	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	Int. Total
07:00 AM	20	1	21	0	1	1	1	8	9	31
07:15 AM	18	3	21	1	0	1	1	8	9	31
07:30 AM	25	0	25	2	0	2	0	11	11	38
07:45 AM	25	2	27	0	0	0	1	20	21	48
Total	88	6	94	3	1	4	3	47	50	148
08:00 AM	23	1	24	1	0	1	2	15	17	42
08:15 AM	18	1	19	2	0	2	1	19	20	41
08:30 AM	15	1	16	2	0	2	0	7	7	25
08:45 AM	19	1	20	1	0	1	0	20	20	41
Total	75	4	79	6	0	6	3	61	64	149
*** BREAK ***										
04:00 PM	18	1	19	2	1	3	0	33	33	55
04:15 PM	17	1	18	1	0	1	1	38	39	58
04:30 PM	29	1	30	2	0	2	2	32	34	66
04:45 PM	24	1	25	0	0	0	0	26	26	51
Total	88	4	92	5	1	6	3	129	132	230
05:00 PM	20	0	20	0	0	0	0	33	33	53
05:15 PM	11	2	13	1	0	1	1	32	33	47
05:30 PM	29	1	30	0	0	0	2	29	31	61
05:45 PM	14	1	15	0	1	1	0	37	37	53
Total	74	4	78	1	1	2	3	131	134	214
Grand Total	325	18	343	15	3	18	12	368	380	741
Apprch %	94.8	5.2		83.3	16.7		3.2	96.8		
Total %	43.9	2.4	46.3	2	0.4	2.4	1.6	49.7	51.3	
Unshifted	325	18	343	15	3	18	12	368	380	741
% Unshifted	100	100	100	100	100	100	100	100	100	100
Tractor Trailers	0	0	0	0	0	0	0	0	0	0
% Tractor Trailers	0	0	0	0	0	0	0	0	0	0

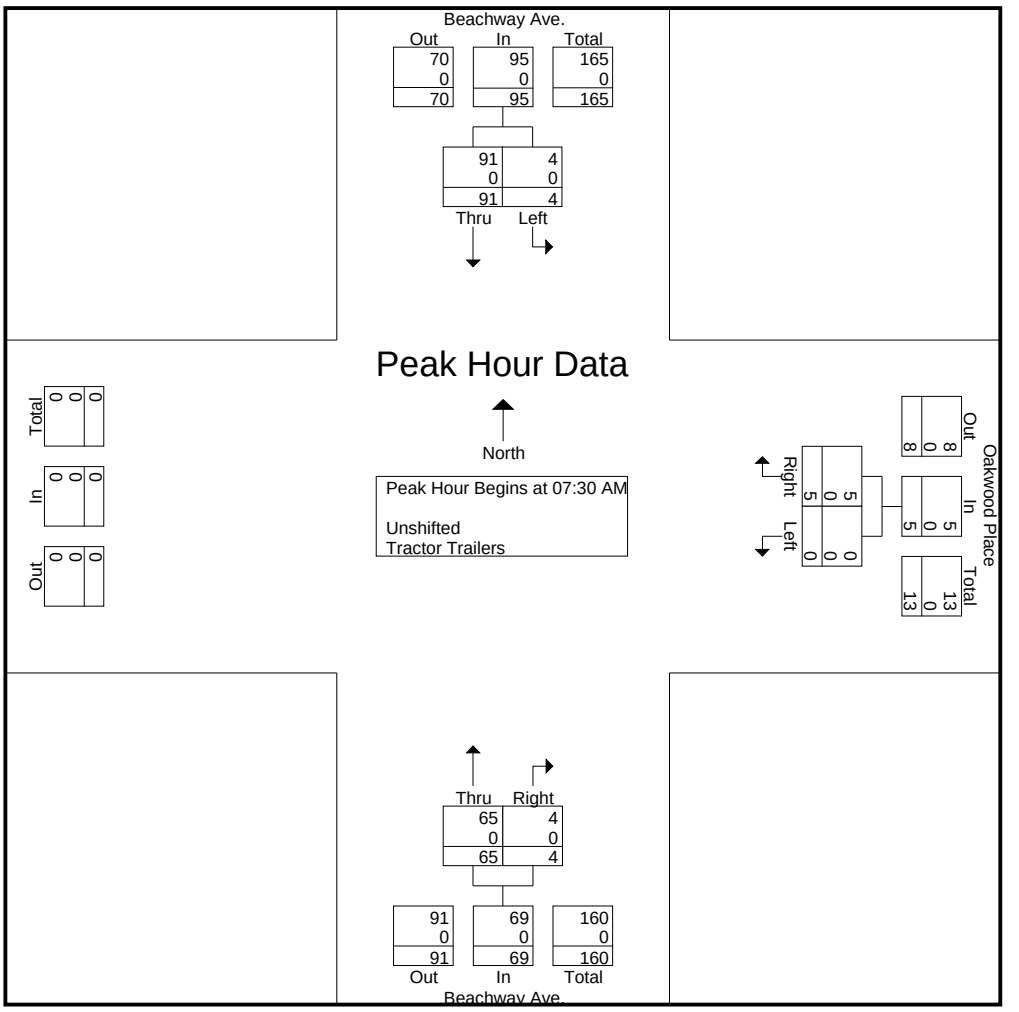
Shropshire Associates LLC

277 Whitehorse Pike, Suite 203
Atco, NJ 08004

N/S Route: Beachway Ave.
E/W Route: Oakwood Place
Keansburg/Monmouth County/NJ
Thursday/Clear/EM/D4-3730

File Name : 23131002
Site Code : 23131002
Start Date : 5/25/2023
Page No : 2

	Beachway Ave. Southbound			Oakwood Place Westbound			Beachway Ave. Northbound			
Start Time	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:30 AM										
07:30 AM	**25**	0	25	**2**	0	**2**	0	11	11	38
07:45 AM	25	**2**	**27**	0	0	0	1	**20**	**21**	**48**
08:00 AM	23	1	24	1	0	1	**2**	15	17	42
08:15 AM	18	1	19	2	0	2	1	19	20	41
Total Volume	91	4	95	5	0	5	4	65	69	169
% App. Total	95.8	4.2		100	0		5.8	94.2		
PHF	.910	.500	.880	.625	.000	.625	.500	.813	.821	.880
Unshifted	91	4	95	5	0	5	4	65	69	169
% Unshifted	100	100	100	100	0	100	100	100	100	100
Tractor Trailers	0	0	0	0	0	0	0	0	0	0
% Tractor Trailers	0	0	0	0	0	0	0	0	0	0



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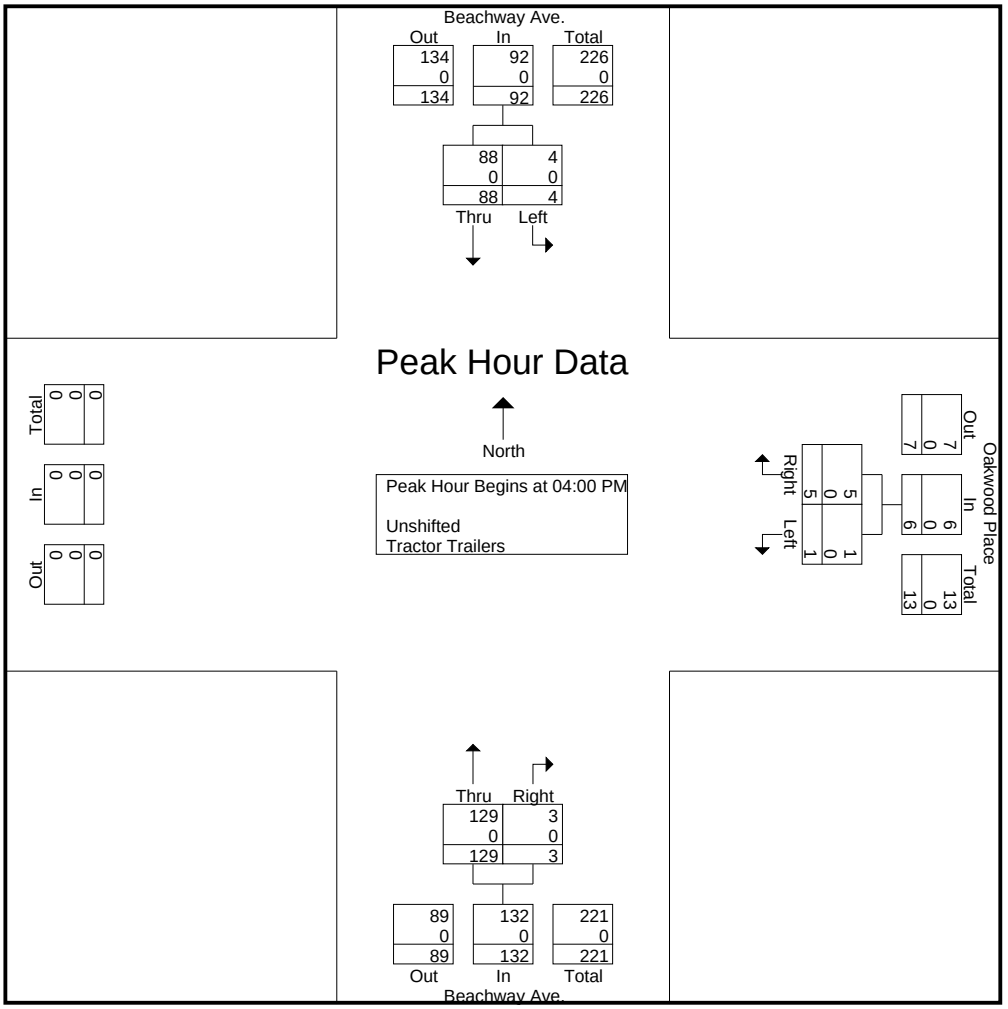
	Beachway Ave. Southbound			Oakwood Place Westbound			Beachway Ave. Northbound			
Start Time	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	18	**1**	19	**2**	**1**	**3**	0	33	33	55
04:15 PM	17	1	18	1	0	1	1	**38**	**39**	58
04:30 PM	**29**	1	**30**	2	0	2	**2**	32	34	**66**
04:45 PM	24	1	25	0	0	0	0	26	26	51
Total Volume	88	4	92	5	1	6	3	129	132	230
% App. Total	95.7	4.3		83.3	16.7		2.3	97.7		
PHF	.759	1.00	.767	.625	.250	.500	.375	.849	.846	.871
Unshifted	88	4	92	5	1	6	3	129	132	230
% Unshifted	100	100	100	100	100	100	100	100	100	100
Tractor Trailers	0	0	0	0	0	0	0	0	0	0
% Tractor Trailers	0	0	0	0	0	0	0	0	0	0



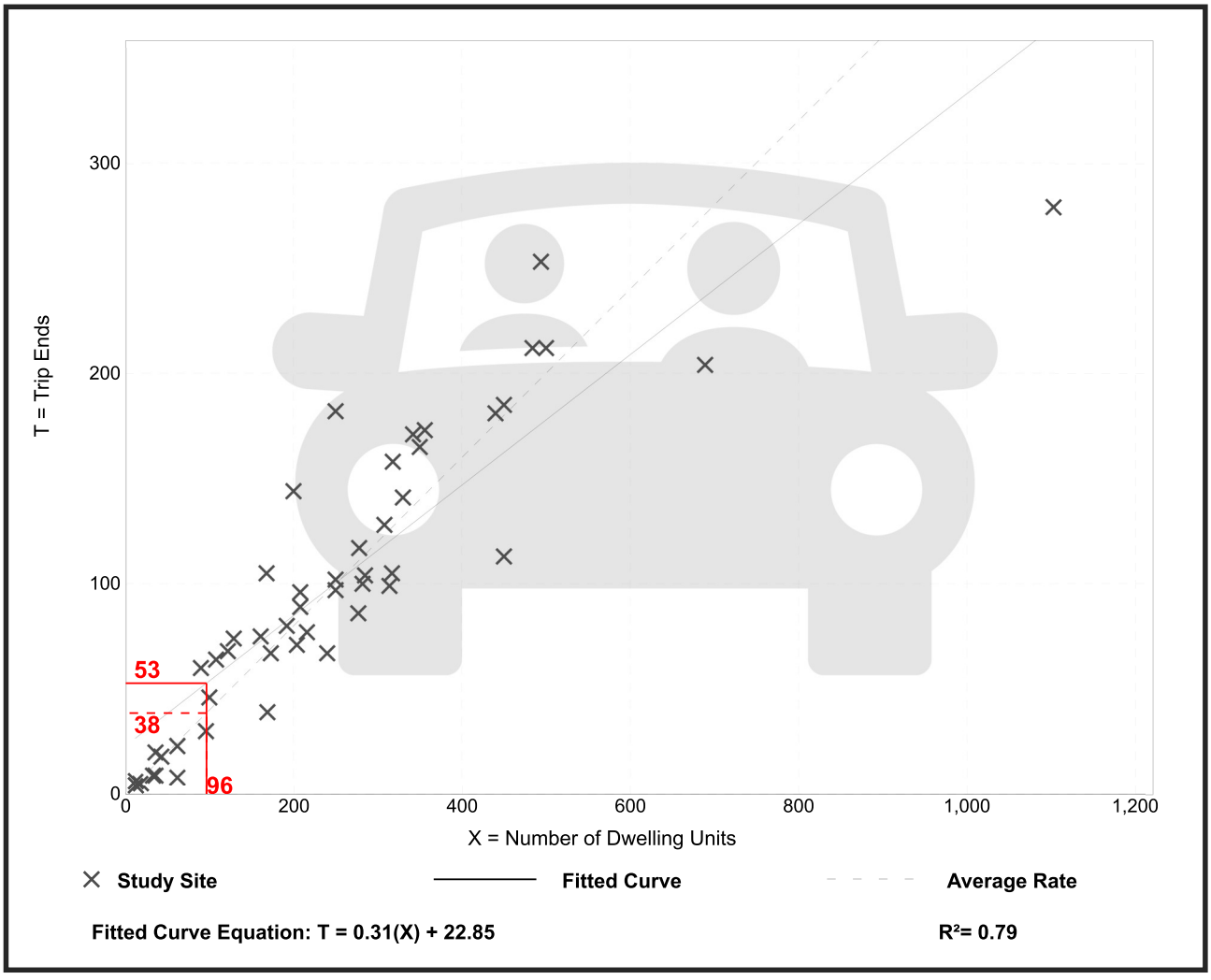
Multifamily Housing (Low-Rise)
Not Close to Rail Transit (220)

Vehicle Trip Ends vs: **Dwelling Units**
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: 49
Avg. Num. of Dwelling Units: 249
Directional Distribution: 24% entering, 76% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.40	0.13 - 0.73	0.12

Data Plot and Equation



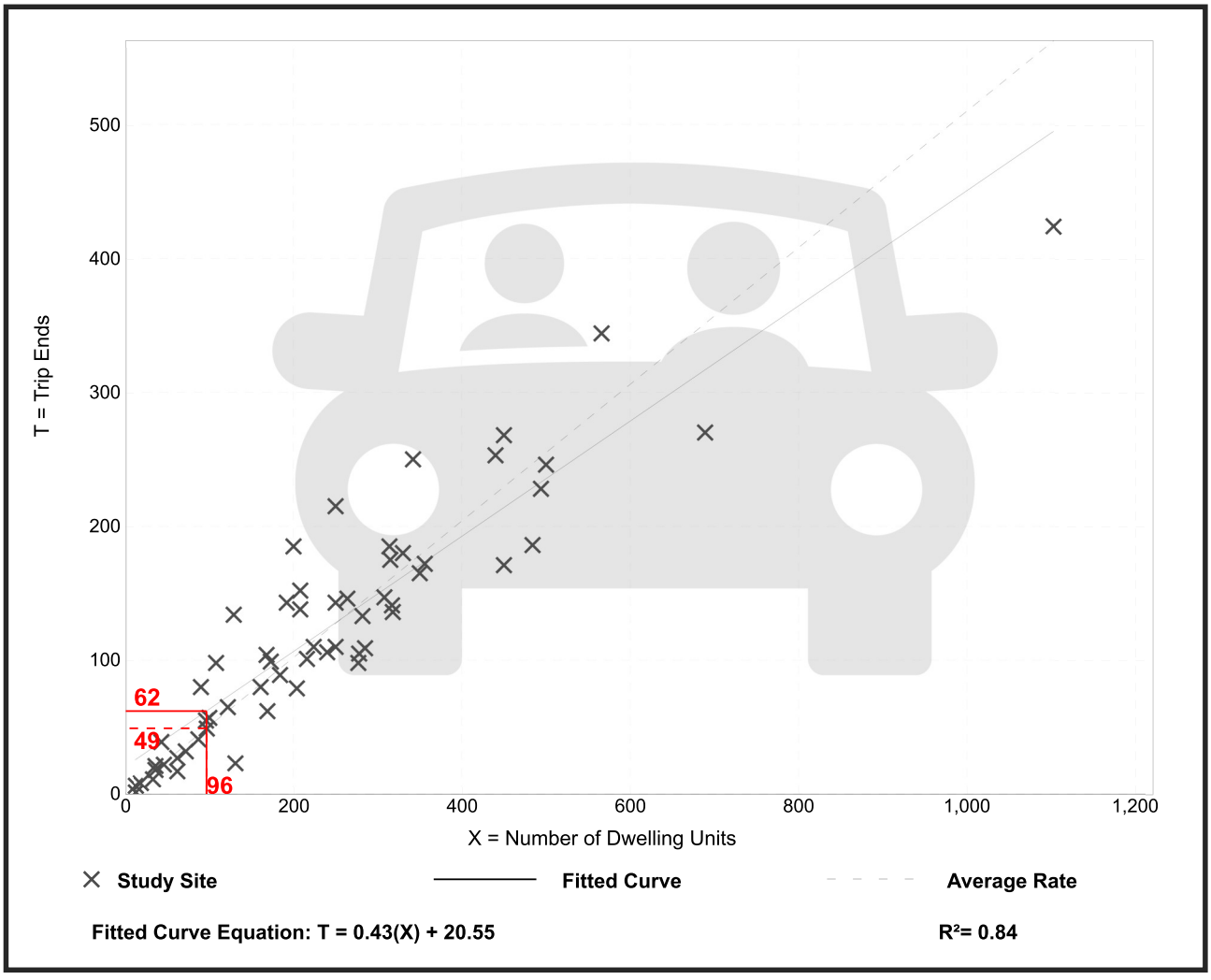
Multifamily Housing (Low-Rise)
Not Close to Rail Transit (220)

Vehicle Trip Ends vs: **Dwelling Units**
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: 59
Avg. Num. of Dwelling Units: 241
Directional Distribution: 63% entering, 37% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.51	0.08 - 1.04	0.15

Data Plot and Equation



Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	1	4	32	1	5	1	71	32	4	98	3
Future Vol, veh/h	3	1	4	32	1	5	1	71	32	4	98	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	4	1	5	38	1	6	1	84	38	5	115	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	236	251	117	235	234	103	119	0	0	122	0	0
Stage 1	127	127	-	105	105	-	-	-	-	-	-	-
Stage 2	109	124	-	130	129	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	723	656	941	724	670	957	1482	-	-	1478	-	-
Stage 1	882	795	-	906	812	-	-	-	-	-	-	-
Stage 2	901	797	-	878	793	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	715	653	941	717	667	957	1482	-	-	1478	-	-
Mov Cap-2 Maneuver	715	653	-	717	667	-	-	-	-	-	-	-
Stage 1	881	792	-	905	811	-	-	-	-	-	-	-
Stage 2	893	796	-	869	790	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.5	10.2	0.1	0.3
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1482	-	-	802	740	1478	-	-
HCM Lane V/C Ratio	0.001	-	-	0.012	0.06	0.003	-	-
HCM Control Delay (s)	7.4	0	-	9.5	10.2	7.4	0	-
HCM Lane LOS	A	A	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.2	0	-	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	0	4	11	0	0	0	137	23	2	100	2
Future Vol, veh/h	4	0	4	11	0	0	0	137	23	2	100	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	5	0	5	13	0	0	0	157	26	2	115	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	290	303	116	293	291	170	117	0	0	183	0	0
Stage 1	120	120	-	170	170	-	-	-	-	-	-	-
Stage 2	170	183	-	123	121	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	666	613	942	663	623	879	1484	-	-	1404	-	-
Stage 1	889	800	-	837	762	-	-	-	-	-	-	-
Stage 2	837	752	-	886	800	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	665	612	942	659	622	879	1484	-	-	1404	-	-
Mov Cap-2 Maneuver	665	612	-	659	622	-	-	-	-	-	-	-
Stage 1	889	798	-	837	762	-	-	-	-	-	-	-
Stage 2	837	752	-	880	798	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.7	10.6	0	0.1
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1484	-	-	780	659	1404	-	-
HCM Lane V/C Ratio	-	-	-	0.012	0.019	0.002	-	-
HCM Control Delay (s)	0	-	-	9.7	10.6	7.6	0	-
HCM Lane LOS	A	-	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	0	5	65	4	4	91
Future Vol, veh/h	0	5	65	4	4	91
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	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	6	74	5	5	103

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	190	77	0	0	79	0
Stage 1	77	-	-	-	-	-
Stage 2	113	-	-	-	-	-
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	804	990	-	-	1532	-
Stage 1	951	-	-	-	-	-
Stage 2	917	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	802	990	-	-	1532	-
Mov Cap-2 Maneuver	802	-	-	-	-	-
Stage 1	951	-	-	-	-	-
Stage 2	914	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	8.7	0	0.3
HCM LOS	A		

Minor Lane/Major Mvmt	NET	NER	NWLn1	SWL	SWT
Capacity (veh/h)	-	-	990	1532	-
HCM Lane V/C Ratio	-	-	0.006	0.003	-
HCM Control Delay (s)	-	-	8.7	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	0.4

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	1	5	129	3	4	88
Future Vol, veh/h	1	5	129	3	4	88
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	87	87	87	87	87	87
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	1	6	148	3	5	101

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	261	150	0	0	151	0
Stage 1	150	-	-	-	-	-
Stage 2	111	-	-	-	-	-
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	732	902	-	-	1442	-
Stage 1	883	-	-	-	-	-
Stage 2	919	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	729	902	-	-	1442	-
Mov Cap-2 Maneuver	729	-	-	-	-	-
Stage 1	883	-	-	-	-	-
Stage 2	915	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	9.2	0	0.3
HCM LOS	A		

Minor Lane/Major Mvmt	NET	NER	NWLn1	SWL	SWT
Capacity (veh/h)	-	-	868	1442	-
HCM Lane V/C Ratio	-	-	0.008	0.003	-
HCM Control Delay (s)	-	-	9.2	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	1	4	34	1	5	1	76	34	4	104	3
Future Vol, veh/h	3	1	4	34	1	5	1	76	34	4	104	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	4	1	5	40	1	6	1	89	40	5	122	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	249	265	124	248	247	109	126	0	0	129	0	0
Stage 1	134	134	-	111	111	-	-	-	-	-	-	-
Stage 2	115	131	-	137	136	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	709	644	932	710	659	950	1473	-	-	1469	-	-
Stage 1	874	789	-	899	807	-	-	-	-	-	-	-
Stage 2	895	792	-	871	788	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	701	641	932	703	656	950	1473	-	-	1469	-	-
Mov Cap-2 Maneuver	701	641	-	703	656	-	-	-	-	-	-	-
Stage 1	873	786	-	898	806	-	-	-	-	-	-	-
Stage 2	887	791	-	862	785	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.6	10.3	0.1	0.3
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1473	-	-	790	725	1469	-	-
HCM Lane V/C Ratio	0.001	-	-	0.012	0.065	0.003	-	-
HCM Control Delay (s)	7.4	0	-	9.6	10.3	7.5	0	-
HCM Lane LOS	A	A	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.2	0	-	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	0	4	12	0	0	0	146	24	2	106	2
Future Vol, veh/h	4	0	4	12	0	0	0	146	24	2	106	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	5	0	5	14	0	0	0	168	28	2	122	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	309	323	123	312	310	182	124	0	0	196	0	0
Stage 1	127	127	-	182	182	-	-	-	-	-	-	-
Stage 2	182	196	-	130	128	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	647	598	933	644	608	866	1475	-	-	1389	-	-
Stage 1	882	795	-	824	753	-	-	-	-	-	-	-
Stage 2	824	742	-	878	794	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	646	597	933	640	607	866	1475	-	-	1389	-	-
Mov Cap-2 Maneuver	646	597	-	640	607	-	-	-	-	-	-	-
Stage 1	882	793	-	824	753	-	-	-	-	-	-	-
Stage 2	824	742	-	872	792	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.8	10.7	0	0.1
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1475	-	-	763	640	1389	-	-
HCM Lane V/C Ratio	-	-	-	0.012	0.022	0.002	-	-
HCM Control Delay (s)	0	-	-	9.8	10.7	7.6	0	-
HCM Lane LOS	A	-	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	0	5	69	4	4	94
Future Vol, veh/h	0	5	69	4	4	94
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	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	6	78	5	5	107

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	198	81	0	0	83	0
Stage 1	81	-	-	-	-	-
Stage 2	117	-	-	-	-	-
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	795	985	-	-	1527	-
Stage 1	947	-	-	-	-	-
Stage 2	913	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	793	985	-	-	1527	-
Mov Cap-2 Maneuver	793	-	-	-	-	-
Stage 1	947	-	-	-	-	-
Stage 2	910	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	8.7	0	0.3
HCM LOS	A		

Minor Lane/Major Mvmt	NET	NER	NWLn1	SWL	SWT
Capacity (veh/h)	-	-	985	1527	-
HCM Lane V/C Ratio	-	-	0.006	0.003	-
HCM Control Delay (s)	-	-	8.7	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	0.3

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	1	5	138	3	4	94
Future Vol, veh/h	1	5	138	3	4	94
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	87	87	87	87	87	87
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	1	6	159	3	5	108

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	279	161	0	0	162	0
Stage 1	161	-	-	-	-	-
Stage 2	118	-	-	-	-	-
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	715	889	-	-	1429	-
Stage 1	873	-	-	-	-	-
Stage 2	912	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	712	889	-	-	1429	-
Mov Cap-2 Maneuver	712	-	-	-	-	-
Stage 1	873	-	-	-	-	-
Stage 2	908	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	9.3	0	0.3
HCM LOS	A		

Minor Lane/Major Mvmt	NET	NER	NWLn1	SWL	SWT
Capacity (veh/h)	-	-	854	1429	-
HCM Lane V/C Ratio	-	-	0.008	0.003	-
HCM Control Delay (s)	-	-	9.3	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	1	4	34	1	7	1	82	34	10	125	4
Future Vol, veh/h	3	1	4	34	1	7	1	82	34	10	125	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	4	1	5	40	1	8	1	96	40	12	147	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	297	312	150	295	294	116	152	0	0	136	0	0
Stage 1	174	174	-	118	118	-	-	-	-	-	-	-
Stage 2	123	138	-	177	176	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	659	606	902	661	620	942	1441	-	-	1461	-	-
Stage 1	833	759	-	891	802	-	-	-	-	-	-	-
Stage 2	886	786	-	829	757	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	647	600	902	652	614	942	1441	-	-	1461	-	-
Mov Cap-2 Maneuver	647	600	-	652	614	-	-	-	-	-	-	-
Stage 1	832	752	-	890	801	-	-	-	-	-	-	-
Stage 2	876	785	-	816	750	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.9	10.7	0.1	0.5
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1441	-	-	745	686	1461	-	-
HCM Lane V/C Ratio	0.001	-	-	0.013	0.072	0.008	-	-
HCM Control Delay (s)	7.5	0	-	9.9	10.7	7.5	0	-
HCM Lane LOS	A	A	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.2	0	-	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	5	0	4	12	0	1	0	169	24	4	116	2
Future Vol, veh/h	5	0	4	12	0	1	0	169	24	4	116	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	6	0	5	14	0	1	0	194	28	5	133	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	353	366	134	355	353	208	135	0	0	222	0	0
Stage 1	144	144	-	208	208	-	-	-	-	-	-	-
Stage 2	209	222	-	147	145	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	606	566	920	604	575	837	1462	-	-	1359	-	-
Stage 1	864	782	-	799	734	-	-	-	-	-	-	-
Stage 2	798	723	-	860	781	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	604	564	920	599	573	837	1462	-	-	1359	-	-
Mov Cap-2 Maneuver	604	564	-	599	573	-	-	-	-	-	-	-
Stage 1	864	779	-	799	734	-	-	-	-	-	-	-
Stage 2	797	723	-	852	778	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.1	11	0	0.3
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1462	-	-	713	612	1359	-	-
HCM Lane V/C Ratio	-	-	-	0.015	0.024	0.003	-	-
HCM Control Delay (s)	0	-	-	10.1	11	7.7	0	-
HCM Lane LOS	A	-	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-

Intersection	
Int Delay, s/veh	1

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	5	15	6	86	110	1
Future Vol, veh/h	5	15	6	86	110	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	5	16	7	93	120	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	228	121	121	0	-	0
Stage 1	121	-	-	-	-	-
Stage 2	107	-	-	-	-	-
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	765	936	1479	-	-	-
Stage 1	909	-	-	-	-	-
Stage 2	922	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	761	936	1479	-	-	-
Mov Cap-2 Maneuver	761	-	-	-	-	-
Stage 1	904	-	-	-	-	-
Stage 2	922	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	9.2	0.5	0
HCM LOS	A		

Minor Lane/Major Mvmt	NEL	NET	SELn1	SWT	SWR
Capacity (veh/h)	1479	-	885	-	-
HCM Lane V/C Ratio	0.004	-	0.025	-	-
HCM Control Delay (s)	7.4	0	9.2	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.9

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	2	10	19	156	98	1
Future Vol, veh/h	2	10	19	156	98	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	11	21	170	107	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	320	108	108	0	-	0
Stage 1	108	-	-	-	-	-
Stage 2	212	-	-	-	-	-
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	673	946	1483	-	-	-
Stage 1	916	-	-	-	-	-
Stage 2	823	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	662	946	1483	-	-	-
Mov Cap-2 Maneuver	662	-	-	-	-	-
Stage 1	901	-	-	-	-	-
Stage 2	823	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	9.1	0.8	0
HCM LOS	A		

Minor Lane/Major Mvmt	NEL	NET	SELn1	SWT	SWR
Capacity (veh/h)	1483	-	883	-	-
HCM Lane V/C Ratio	0.014	-	0.015	-	-
HCM Control Delay (s)	7.5	0	9.1	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	0.9

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	7	13	2	89	98	4
Future Vol, veh/h	7	13	2	89	98	4
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, %	0	0	0	0	0	0
Mvmt Flow	8	14	2	97	107	4

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	210	109	111	0	-	0
Stage 1	109	-	-	-	-	-
Stage 2	101	-	-	-	-	-
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	783	950	1492	-	-	-
Stage 1	921	-	-	-	-	-
Stage 2	928	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	782	950	1492	-	-	-
Mov Cap-2 Maneuver	782	-	-	-	-	-
Stage 1	920	-	-	-	-	-
Stage 2	928	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	9.2	0.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NEL	NET	SELn1	SWT	SWR
Capacity (veh/h)	1492	-	884	-	-
HCM Lane V/C Ratio	0.001	-	0.025	-	-
HCM Control Delay (s)	7.4	0	9.2	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	9	2	7	151	97	12
Future Vol, veh/h	9	2	7	151	97	12
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, %	0	0	0	0	0	0
Mvmt Flow	10	2	8	164	105	13

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	292	112	118	0	-	0
Stage 1	112	-	-	-	-	-
Stage 2	180	-	-	-	-	-
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	703	947	1483	-	-	-
Stage 1	918	-	-	-	-	-
Stage 2	856	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	699	947	1483	-	-	-
Mov Cap-2 Maneuver	699	-	-	-	-	-
Stage 1	912	-	-	-	-	-
Stage 2	856	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	10	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NEL	NET	SELn1	SWT	SWR
Capacity (veh/h)	1483	-	734	-	-
HCM Lane V/C Ratio	0.005	-	0.016	-	-
HCM Control Delay (s)	7.4	0	10	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	0	5	80	5	4	102
Future Vol, veh/h	0	5	80	5	4	102
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	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	6	91	6	5	116

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	220	94	0	0	97	0
Stage 1	94	-	-	-	-	-
Stage 2	126	-	-	-	-	-
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	773	968	-	-	1509	-
Stage 1	935	-	-	-	-	-
Stage 2	905	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	770	968	-	-	1509	-
Mov Cap-2 Maneuver	770	-	-	-	-	-
Stage 1	935	-	-	-	-	-
Stage 2	901	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	8.7	0	0.3
HCM LOS	A		

Minor Lane/Major Mvmt	NET	NER	NWLn1	SWL	SWT
Capacity (veh/h)	-	-	968	1509	-
HCM Lane V/C Ratio	-	-	0.006	0.003	-
HCM Control Delay (s)	-	-	8.7	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	0.4

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Vol, veh/h	2	5	149	3	4	107
Future Vol, veh/h	2	5	149	3	4	107
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	87	87	87	87	87	87
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	2	6	171	3	5	123

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	306	173	0	0	174	0
Stage 1	173	-	-	-	-	-
Stage 2	133	-	-	-	-	-
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	690	876	-	-	1415	-
Stage 1	862	-	-	-	-	-
Stage 2	898	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	687	876	-	-	1415	-
Mov Cap-2 Maneuver	687	-	-	-	-	-
Stage 1	862	-	-	-	-	-
Stage 2	894	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	9.5	0	0.3
HCM LOS	A		

Minor Lane/Major Mvmt	NET	NER	NWLn1	SWL	SWT
Capacity (veh/h)	-	-	812	1415	-
HCM Lane V/C Ratio	-	-	0.01	0.003	-
HCM Control Delay (s)	-	-	9.5	7.6	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-