TRAFFIC IMPACT STUDY

For

Ster Developers, LLC
Proposed Residential & Retail Development

Property Located at:

Memorial Drive (CR 40 A) & 8th Avenue/9th Avenue
Block 405 – Lots 5, 6 & 7
Township of Neptune, Monmouth County, NJ

Prepared by:

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April 4, 2022

2241-99-002T

NED

INTRODUCTION

It is proposed to construct a residential development with ground floor retail on a parcel of land that is currently undeveloped, located along the southbound side of Memorial Drive between 8th Avenue and 9th Avenue in the Township of Neptune, Monmouth County, New Jersey (see Figure 1 in Appendix A). The site is designated as Block 405 – Lots 5, 6 and 7 on the Township of Neptune Tax Maps. It is proposed to construct a four-story 78-unit residential building with 936 SF of retail space and parking on the ground floor ("The Project"). The site is located within the TV – Transit Village Zone. It is proposed to provide access to the site via a full movement driveway along 8th Avenue and a full movement driveway along 9th Avenue.

Dynamic Traffic LLC has been retained to prepare this study to assess the traffic impact associated with the construction of The Project on the adjacent roadway network. This study documents the methodology, analyses, findings and conclusions of our study and includes:

- A detailed field inspection was conducted to obtain an inventory of existing roadway geometry, traffic control, and location and geometry of existing driveways and intersections.

- Existing traffic data was collected via manual turning movement (MTM) counts during the weekday AM and weekday PM peak periods at the intersections of:

    - Memorial Drive (CR 40 A) & 8th Avenue
    - Memorial Drive (CR 40 A) & 9th Avenue

- Projections of traffic to be generated by the proposed development were prepared utilizing trip generation data as published by the Institute of Transportation Engineers. Site traffic was then assigned to the adjacent street system based upon the anticipated directional distribution.

- Capacity analyses were conducted for the Existing, No Build, and Build conditions for the study intersections.

- The proposed points of ingress and egress were inspected for adequacy of geometric design, spacing and/or alignment to streets and driveways on the opposite side of the street, relationship to other driveways adjacent to the development, and conformance with accepted design standards.

- The site plan as designed was reviewed for sufficiency in accommodating large wheel base vehicles such as delivery trucks, refuse trucks, and emergency vehicles.

- The proposed site circulation and parking as shown on the site plan were reviewed for conformance with the Residential Site Improvement Standards ("RSIS") (N.J.A.C. 5:21) and Township Ordinance.

EXISTING CONDITIONS

A review of the existing roadway conditions near the proposed site was conducted to provide the basis for assessing the traffic impact of the development. This included field investigations of the surrounding roadways and intersections, collection of traffic volume data, and extensive analyses.

Existing Roadway Conditions

The following are descriptions of the roadways in the study area:

Memorial Drive (CR 40 A) is an Urban Major Collector roadway under Monmouth County jurisdiction with a general north/south orientation. In the vicinity of the site the posted speed limit is 40 MPH and the roadway provides two travel lanes in each direction. Curb is provided along both sides of the roadway, while sidewalk is only provided along the southbound side of the roadway. Memorial Drive provides a straight horizontal alignment with a slightly curved horizontal alignment to the north of the site and a relatively flat vertical alignment. The land uses along Memorial Drive in the vicinity of The Project are mixed industrial, commercial and residential. Additionally, the Bradley Beach train station is located less than 800 feet from the site along the northbound side of Memorial Drive.

8th Avenue is a local roadway under Township of Neptune jurisdiction with a general east/west orientation. In the vicinity of the site the speed limit is not posted and the roadway provides one travel lane in each direction. Curb and sidewalk are provided along both sides of the roadway. 8th Avenue provides a straight horizontal alignment and a relatively flat vertical alignment. The land uses along 8th Avenue in the vicinity of The Project are primarily residential.

9th Avenue is a local roadway under Township of Neptune jurisdiction with a general east/west orientation. In the vicinity of the site the posted speed limit is 25 MPH and the roadway provides one travel lane in each direction. Curb and sidewalk are provided along both sides of the roadway. 9th Avenue provides a straight horizontal alignment and a relatively flat vertical alignment. The land uses along 9th Avenue in the vicinity of The Project are primarily residential.

Existing Traffic Volumes

Manual turning movement (MTM) counts were conducted on Thursday, March 10, 2022 from 7:00 to 9:00 AM and from 4:30 to 6:30 PM at the following intersections:

- Memorial Drive (CR 40 A) & 8th Avenue
- Memorial Drive (CR 40 A) & 9th Avenue

Review of the collected traffic data reveals that the weekday morning peak street hour (PSH) occurs between 7:30 - 8:30 AM and the weekday evening PSH occurs between 4:45 - 5:45 PM. Figure 2, located in Appendix A, shows the existing peak hour traffic volumes at the study intersections. All traffic counts are contained in Appendix B.

COVID-19 Traffic Count Normalization

It should be noted that the COVID-19 pandemic may have affected traffic patterns at the time of the traffic counts. As a result, current traffic volumes on the surrounding roadways may be atypical at this time and not entirely representative of pre-COVID "existing" traffic conditions. Therefore, historical traffic volume data has been reviewed and compared with current traffic volumes in order to account for this effect. Specifically, this firm obtained Automatic Traffic Recorder (ATR) volumes from the NJDOT count database conducted along Memorial Drive north of 9th Avenue on Wednesday, June 19, 2019. Please note that the June volumes were utilized to also account for the seasonal increase in traffic that this area experiences.

In order to perform an appropriate comparison, the 2019 volumes were increased to better represent 2021 conditions by applying a growth rate of 2.5% per year, obtained from the NJDOT Annual Background Growth Rate Table, for a period of three (3) years. The adjusted 2019 traffic volumes were then compared to the existing 2021 traffic counts as summarized in the table below.

Table I
Traffic Count Comparison

Location	Date	Memorial Drive Peak Hour Traffic Volume				COVID-19 Adjustment Factor	
		As-Counted		With Background Growth[1]			
		AM	PM	AM	PM	AM	PM
Memorial Drive north of 9th Avenue	June 2019	982	1,210	1,058	1,303	1.10	1.13
	March 2022	964	1,152	964	1,152		

[1] June 2019 data increased by 2.5% per NJDOT Annual Background Growth Rate Table compounded annually for three years.

As seen above, the current volumes were found to be lower than the historical counts grown to represent existing conditions during both peak hours. Therefore, adjustment factors of 1.10 and 1.13 were applied to the AM and PM peak hour volumes, respectively, to provide a conservative analysis. Figure 3, located in Appendix A, shows the adjusted existing peak hour traffic volumes at the study intersection.

Existing Capacity Analysis

The methodology utilized in the capacity analyses is described in the *Highway Capacity Manual*, published by the Transportation Research Board. In general, the term Level of Service (LOS) is used to provide a "qualitative" evaluation of capacity based upon certain "quantitative" calculations related to empirical values, such as traffic volume and intersection control.

An unsignalized (STOP sign controlled) driveway or side street along a through route is seldom critical from an overall capacity standpoint, however, it may be of great significance to the capacity of the minor cross-route, and it may influence the quality of traffic flow on both. When analyzing an unsignalized intersection, it is assumed that both the major street through and right turn movements are unimpeded and have the right-of-way over all side street traffic and left turns from the major street. All other turning movements in the intersection cross, merge with, or are otherwise impeded by major street movements. Traffic delays at unsignalized intersections are determined by sequentially processing these impeded movements. Table II describes the level of service ranges for unsignalized (stop controlled) intersections.

Table II
Level of Service Criteria
for Unsignalized Intersections

Level of Service	Average Control Delay (seconds per vehicle)
a	0.0 to 10.0
b	10.1 to 15.0
c	15.1 to 25.0
d	25.1 to 35.0
e	35.1 to 50.0
f	greater than 50.0

It should be noted that the analyses within the *Highway Capacity Manual* assume a random arrival for all the movements, which may not be the case if an adjacent traffic signal is present that platoons vehicles, such as the signalized intersection of Memorial Drive and 6th Avenue.

All capacity analyses were performed utilizing Synchro 11 software. It should be noted that the existing percentage of trucks and peak hour factors were used in the existing analysis. Table III summarizes the existing levels of service (LOS) and delays. All capacity analysis calculation worksheets are contained in Appendix C.

Table III
Existing Levels of Service

Intersection	Direction/ Movement		AM PSH	PM PSH
Memorial Drive & 8th Avenue	EB	LR	b (15)	c (19)
	NB	L	a (9)	a (10)
Memorial Drive & 9th Avenue	EB	LR	c (17)	b (14)
	NB	L	a (9)	a (10)

a (#) - Unsignalized Intersection Level of Service (seconds of delay per vehicle)

The following are discussions pertaining to each of the existing intersections analyzed.

Memorial Drive and 8th Avenue

8th Avenue intersects Memorial Drive to form a T-intersection with the eastbound approach of 8th Avenue operating under stop control. The northbound approach of Memorial Drive provides a shared left turn/through lane and a dedicated through lane, while the southbound approach provides a dedicated through lane and a shared through/right turn lane. The eastbound approach of 8th Avenue provides a shared left/right turn lane.

A review of the existing analysis reveals that all movements operate at levels of service "C" or better during the analyzed peak periods. See Table III for the individual movement levels of service and delays.

Memorial Drive and 9th Avenue

9th Avenue intersects Memorial Drive to form a T-intersection with the eastbound approach of 9th Avenue operating under stop control. The northbound approach of Memorial Drive provides a shared left turn/through lane and a dedicated through lane, while the southbound approach provides a dedicated through lane and a shared through/right turn lane. The eastbound approach of 9th Avenue provides a shared left/right turn lane.

A review of the existing analysis reveals that all movements operate at levels of service "C" or better during the analyzed peak periods. See Table III for the individual movement levels of service and delays.

FUTURE CONDITIONS

Traffic volumes and operational analyses were developed for both the 2024 No Build and Build conditions. The No Build conditions provide a baseline for assessing the impact of the site development traffic on the roadway system. The process of developing the No Build and Build traffic volumes and the subsequent analyses is outlined below.

Regardless of whether the subject site is developed or not, traffic volumes on the surrounding roadways are expected to increase as a result of developments throughout the region. A growth rate for roadways within the study area was obtained from the NJDOT Annual Background Growth Rate Table, which indicates a growth rate of 2.5% per year.

Through consultation with the Neptune Township Planning Board staff, there are no other developments in the vicinity of the site that have been approved but not yet constructed that are identified as significant traffic generators. It was assumed that the background growth rate was adequate to account for the traffic associated with all development within the area.

Future 2024 No Build traffic volumes were developed by applying the background growth rate of 2.5% for two (2) years to the study area roadways existing traffic volumes. Figure 4, in Appendix A, shows the 2024 No Build traffic volumes.

Traffic Generation

Trip generation projections for The Project were prepared utilizing trip generation research data as published under Land Use Code (LUC) 220 – Multifamily Housing (Low-Rise) Close to Rail Transit and LUC 822 – Strip Retail Plaza (<40K) in the Institute of Transportation Engineers' (ITE) publication, *Trip Generation, 11th Edition.* This publication sets forth trip generation rates based on empirical traffic count data conducted at numerous research sites. Table IV below details the traffic volumes associated with the subject project.

Table IV
Trip Generation

Land Use	AM PSH			PM PSH		
	In	Out	Total	In	Out	Total
78 Residential Units	9	21	30	29	19	48
936 SF Retail	1	1	2	7	7	14
Total	**10**	**22**	**32**	**36**	**26**	**62**

Once the magnitude of traffic to be generated by the site is known, it is necessary to assign that traffic to the adjacent street system. The distribution of new traffic to the surrounding roadways is based on the location of primary arterial roadways, major signalized intersections and existing traffic patterns. Figures 5 and 6, located in Appendix A, illustrate the Trip Distribution and Site Generated Volumes, respectively. The Site Generated Volumes assigned to the study area network were added to the No Build traffic volumes to generate the Build traffic volumes, which are shown in Figure 7.

Future Capacity Analysis

Operational conditions at the study intersections were analyzed under the No Build and Build conditions and are summarized in Table V below.

Table V
Future Levels of Service

Intersection	Direction/ Movement		AM PSH		PM PSH	
			No Build	Build	No Build	Build
Memorial Drive & 8th Avenue	EB	LR	c (15)	c (15)	c (20)	c (21)
	NB	L	a (9)	a (9)	a (10)	a (10)
Memorial Drive & 9th Avenue	EB	LR	c (18)	c (17)	b (15)	c (16)
	NB	L	a (9)	a (9)	a (10)	a (10)
8th Avenue & Site Driveway	EB	L	-	a (7)	-	a (7)
	SB	LR	-	a (9)	-	a (9)
9th Avenue & Site Driveway	WB	L	-	a (7)	-	a (7)
	SB	LR	-	a (9)	-	a (9)

a (#) - Unsignalized Intersection Level of Service (seconds of delay per vehicle)

Memorial Drive and 8th Avenue

With the addition of site generated traffic, each intersection movement is anticipated to operate at No Build levels of service "C" or better. See Table V for the individual movement levels of service and delays.

Memorial Drive and 9th Avenue

With the addition of site generated traffic, each intersection movement is anticipated to operate at acceptable levels of service "C" or better. See Table V for the individual movement levels of service and delays.

8th Avenue and Site Driveway

The site driveway is proposed to intersect 8th Avenue to form an unsignalized T-intersection with the southbound approach of the site driveway operating under stop control. The eastbound approach of 8th Avenue is proposed to provide a shared left turn/through lane, while the westbound approach is proposed to provide a shared through/right turn lane. The southbound approach of the site driveway is proposed to provide a shared left/right turn lane.

As designed, the driveway is anticipated to operate at levels of service "A" during the studied peak hours. See Table V for the individual movement levels of service and delays.

9th Avenue and Site Driveway

The site driveway is proposed to intersect 9th Avenue to form an unsignalized T-intersection with the northbound approach of the site driveway operating under stop control. The eastbound approach of 9th Avenue is proposed to provide a shared through/right turn lane, while the westbound approach is proposed to provide a shared left turn/through lane. The northbound approach of the site driveway is proposed to provide a shared left/right turn lane.

As designed, the driveway is anticipated to operate at levels of service "A" during the studied peak hours. See Table V for the individual movement levels of service and delays.

SITE PLAN

Site Access and Circulation

The site plan was reviewed with respect to the site access and on-site circulation design. As noted previously, access to The Project will be provided via a full movement driveway along 8th Avenue and a full movement driveway along 9th Avenue.

The parking lot will be serviced by parking aisles with minimum widths of 24', which satisfy the Residential Site Improvement Standards (RSIS) minimum requirement of 24'. These aisles will allow for two-way circulation and 90 degree parking. Review of the site plan design indicates that the site can sufficiently accommodate a large wheel base vehicle, such as an emergency vehicle or refuse truck, along with the automobile traffic anticipated.

Parking

The RSIS sets forth a parking requirement of 1.8 parking spaces per 1-bedroom apartment units and 2.0 parking spaces per 2-bedroom apartment unit. Additionally, the Neptune Township Ordinance sets forth a parking requirement of 1 space per 250 SF for retail sales and service uses. This equates to a parking requirement of 152 spaces for the proposed 78-unit (18 1-bedroom units & 60 2-bedroom units) multifamily residential building and 4 spaces for the proposed 936 SF of ground floor retail space, for a total of 156 parking spaces. The site as proposed provides 156 parking spaces, inclusive of three handicap spaces and as such, the RSIS and Ordinance parking requirements are satisfied.

As previously mentioned, the site is located within 800 feet of the Bradley Beach train station. Further, there are NJ Transit 2 bus lines (317 and 830) that travel along Main Street. The availability of public transportation will likely further reduce the parking demand for the site.

It is proposed to provide parking stalls with dimensions of 9'x18', which satisfy the RSIS and Ordinance minimum requirement of 9'x18'.

FINDINGS & CONCLUSIONS

Findings

Based upon the detailed analyses as documented herein, the following findings are noted:

- The proposed 78-unit multifamily residential building with 936 SF of ground floor retail is projected to generate 10 entering trips and 22 exiting trips during the weekday morning peak hour and 36 entering trips and 26 exiting trips during the evening peak hour that are "new" to the adjacent roadway network.

- Access to the site is proposed to be provided via a full movement driveway along 8th Avenue and a full movement driveway along 9th Avenue.

- With the addition of site generated traffic, the intersection of Memorial Avenue and 8th Avenue is anticipated to operate at No Build levels of service "C" or better during the peak hours studied.

- With the addition of site generated traffic, the intersection of Memorial Avenue and 9th Avenue is anticipated to operate at levels of service "C" or better during the peak hours studied.

- As designed, the intersection of 8th Avenue and the site driveway is anticipated to operate at levels of service "A" during the peak hours studied.

- As designed, the intersection of 9th Avenue and the site driveway is anticipated to operate at levels of service "A" during the peak hours studied.

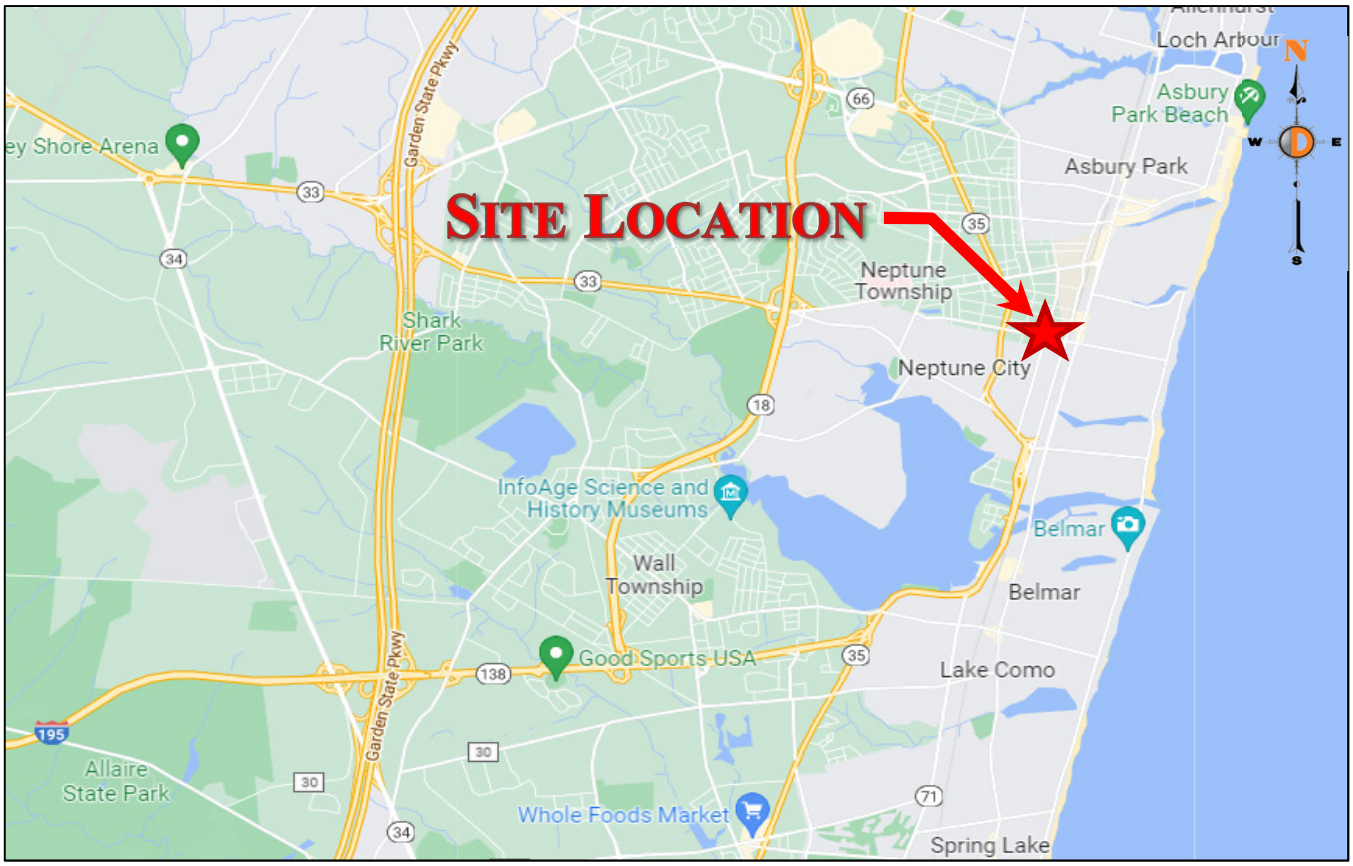
- As proposed, The Project's site driveways and internal circulation have been designed to provide for safe and efficient movement of automobiles, refuse trucks and emergency vehicles.

- The Project's site access points, internal circulation, and parking supply have been designed in accordance with the RSIS (N.J.A.C. 5:21) and Ordinance requirements.

Conclusions

Based upon our Traffic Impact Study as detailed in the body of this report, it is the professional opinion of Dynamic Traffic LLC that the adjacent street system of the Township of Neptune and Monmouth County will not experience any significant degradation in operating conditions with the construction of The Project. The site driveways are located to provide safe and efficient access to the adjacent roadway system. The site plan as proposed provides for good circulation throughout the site and provides adequate parking to accommodate The Project's needs.

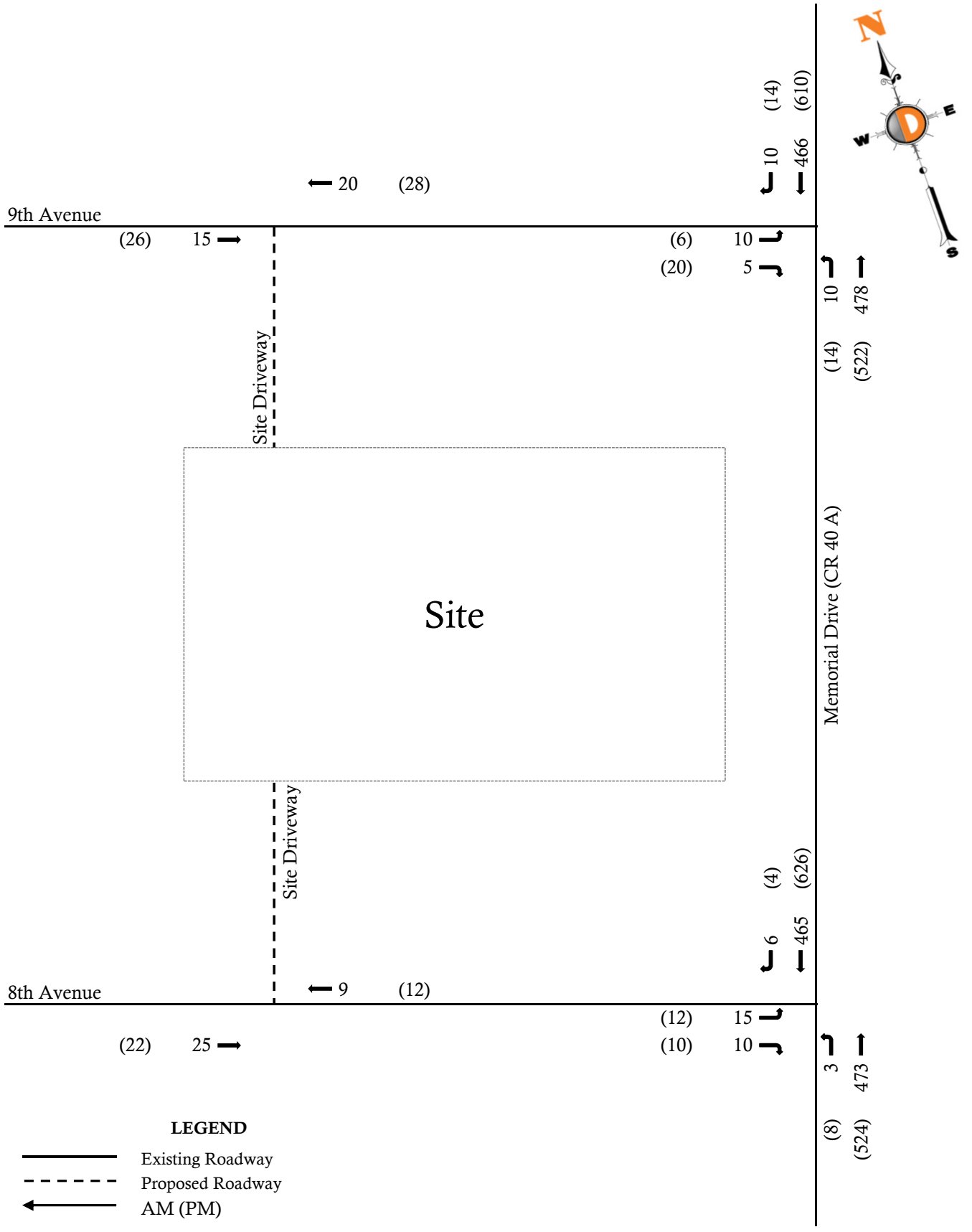
Appendix A
Traffic Volume Figures



Proposed Residential Development
Traffic Impact Study
2241-99-002T

Figure 1

Site Location Map



Proposed Residential Development
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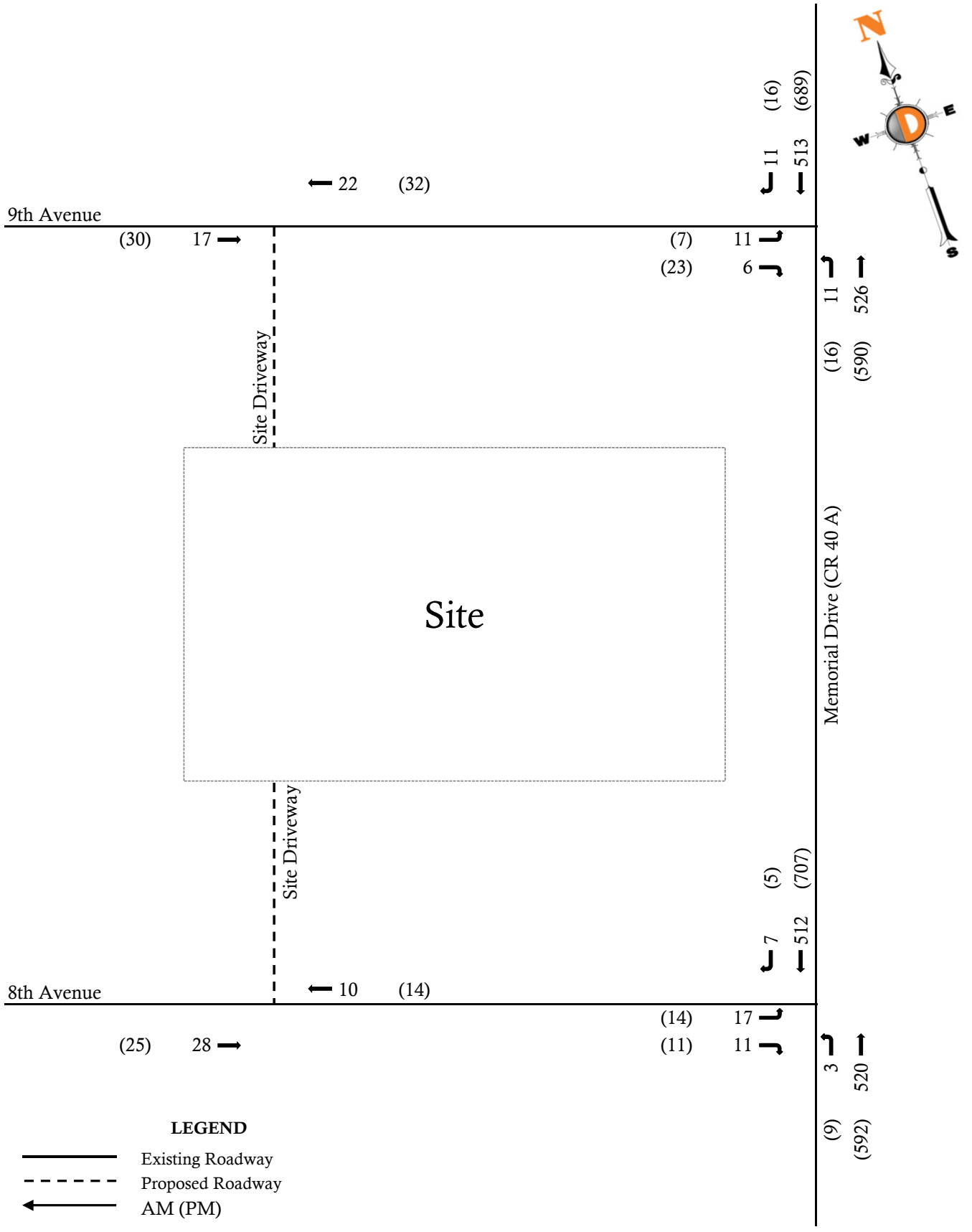
Figure 2

Existing Traffic Volumes



Proposed Residential Development
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Figure 3

Adjusted Existing Traffic Volumes

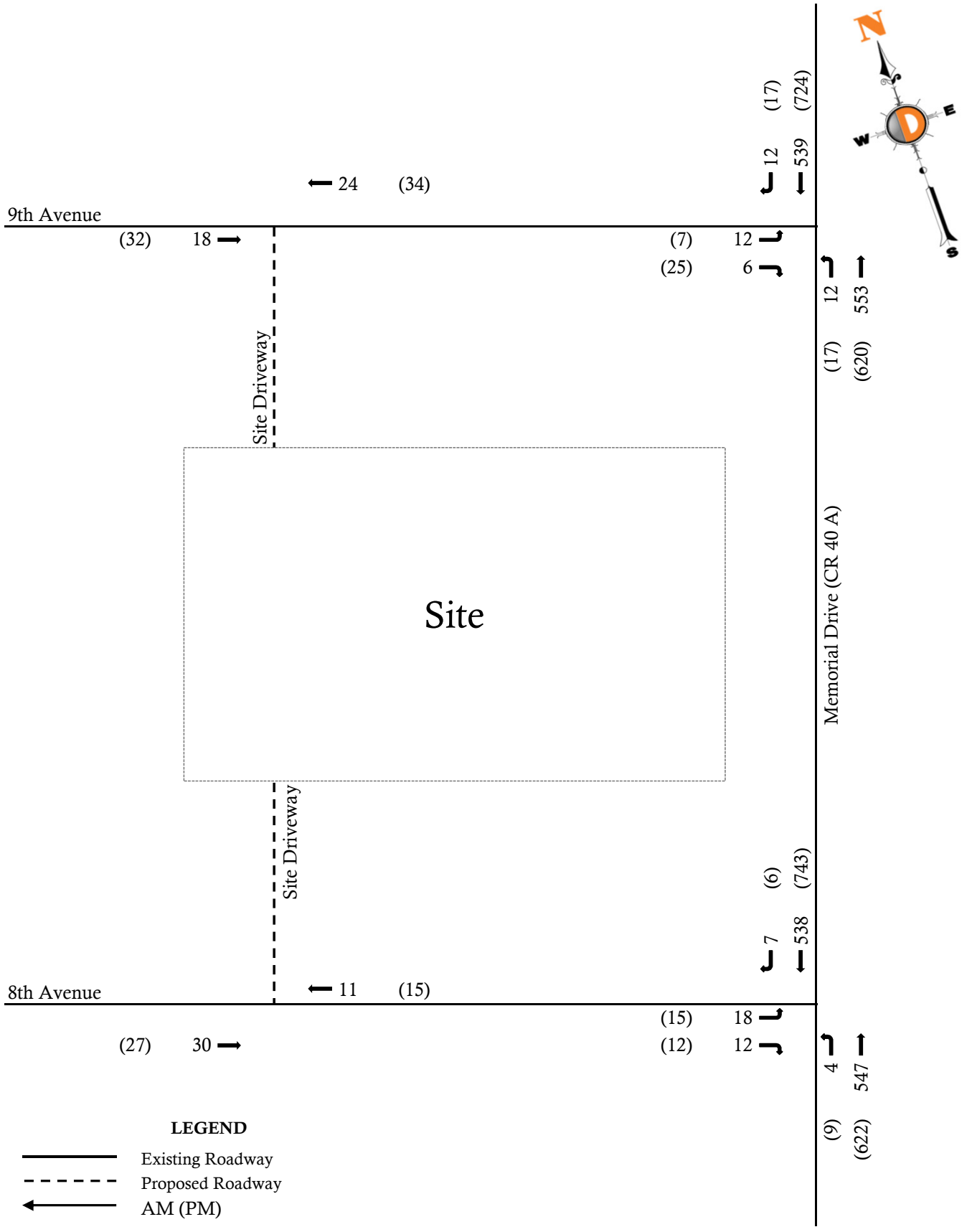

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Figure 4

No Build Traffic Volumes

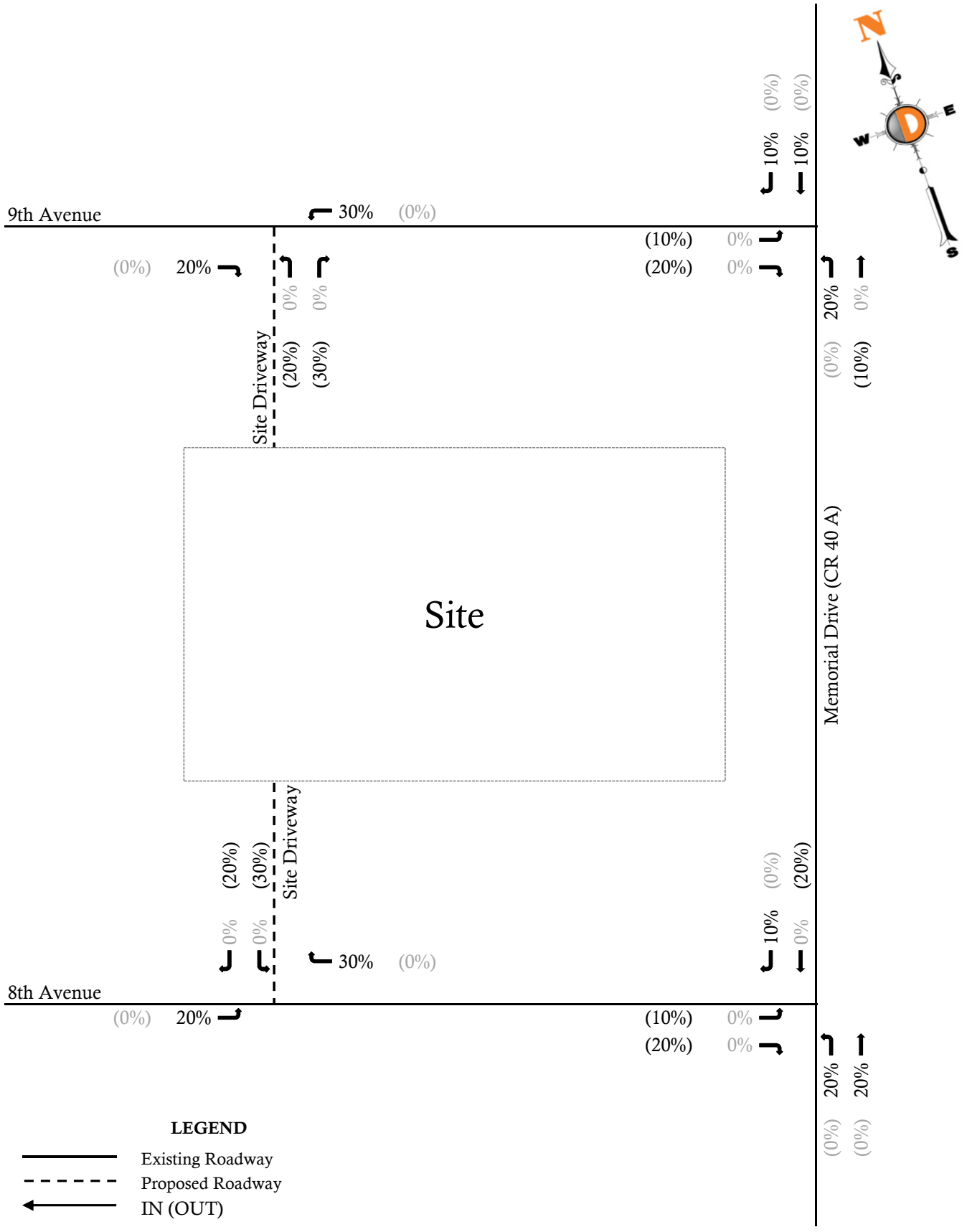

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Figure 5

Percent Distribution

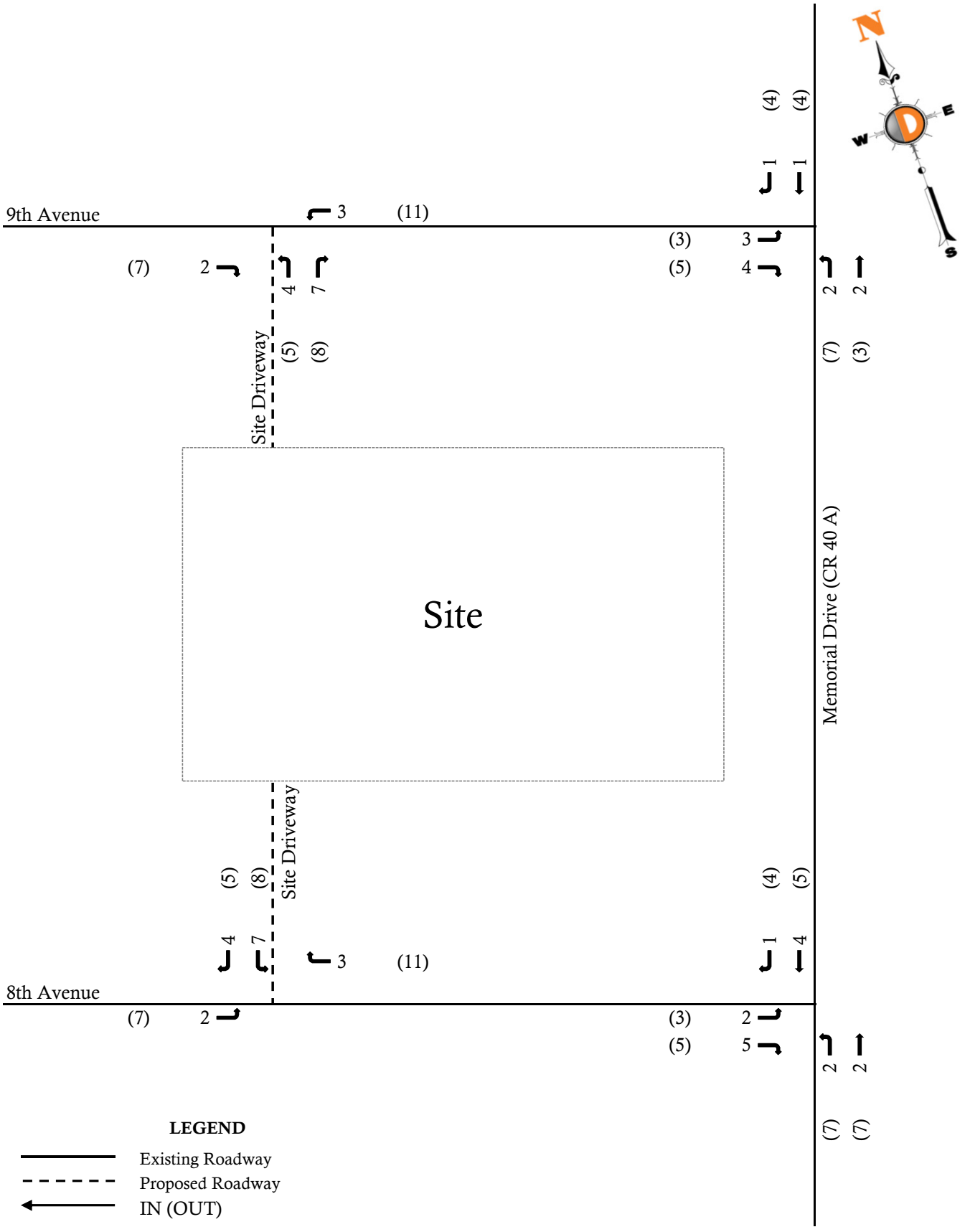

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Figure 6

Site Generated Trips

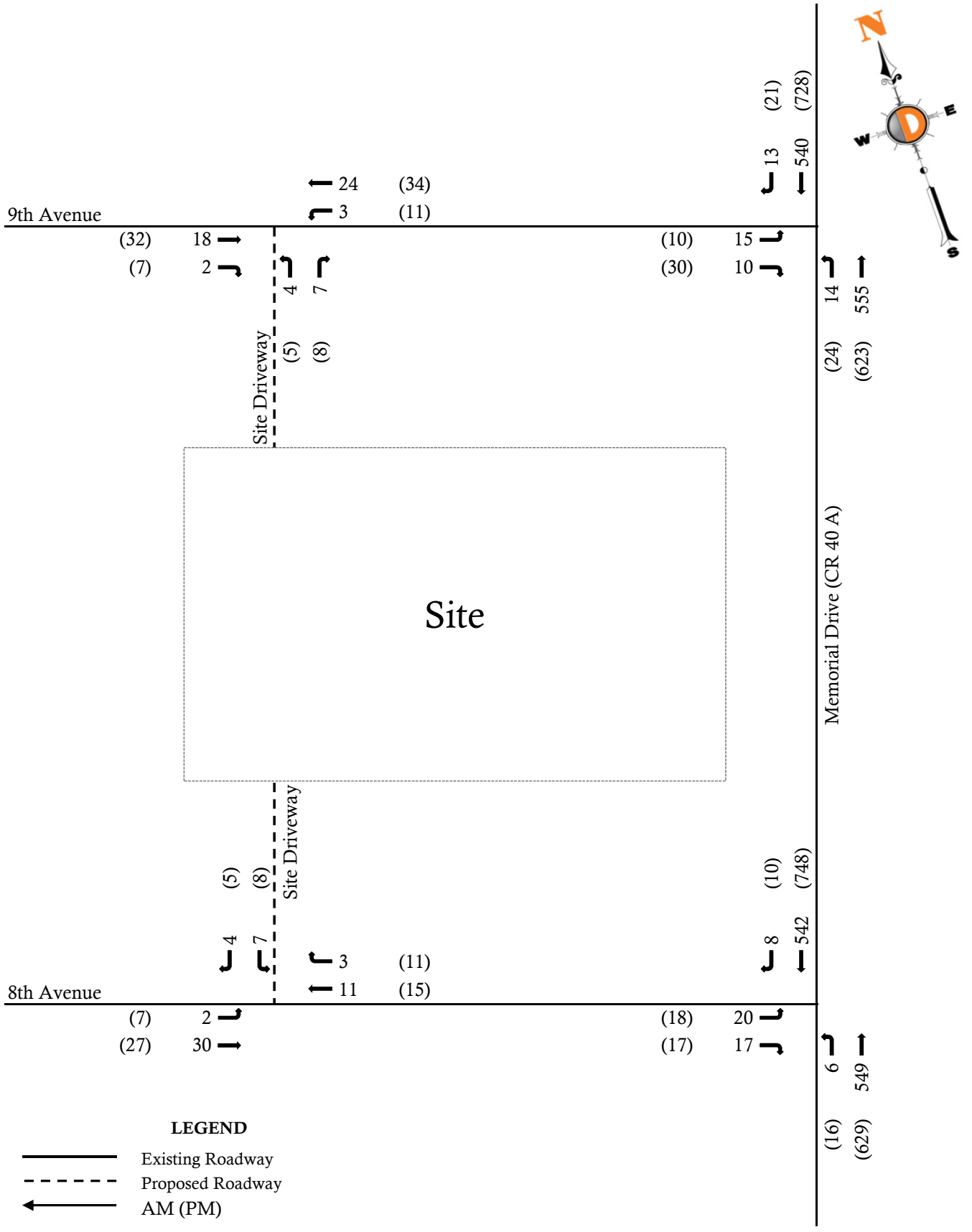

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Figure 7

Build Traffic Volumes

Appendix B
Project Information

Dynamic Traffic, LLC

1904 Main Street, Lake Como, NJ 07719
245 Main Street - Suite #110, Chester, NJ 07930
732-681-0760

E/W: 8th Avenue
N/S: Memorial Drive
Town/County: Neptune/Monmouth
Job #: 2241-99-002T

File Name : Memorial Drive and 8th Ave - AM
Site Code : 00000000
Start Date : 3/10/2022
Page No : 1

Groups Printed- Cars - Trucks (SU) - Trucks (TT)

	8th Avenue Eastbound					Memorial Drive Northbound					Memorial Drive Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	3	0	2	0	5	5	88	0	0	93	0	83	1	0	84	182
07:15 AM	3	0	2	0	5	0	100	0	0	100	0	101	1	0	102	207
07:30 AM	3	0	5	0	8	1	130	0	0	131	0	114	0	0	114	253
07:45 AM	2	0	1	0	3	2	112	0	0	114	0	133	1	0	134	251
Total	11	0	10	0	21	8	430	0	0	438	0	431	3	0	434	893
08:00 AM	4	0	1	0	5	0	126	0	0	126	0	111	4	0	115	246
08:15 AM	6	0	3	0	9	0	105	0	0	105	0	97	1	0	98	212
08:30 AM	2	0	4	0	6	2	116	0	0	118	0	102	3	0	105	229
08:45 AM	4	0	2	0	6	0	116	0	0	116	0	90	2	0	92	214
Total	16	0	10	0	26	2	463	0	0	465	0	400	10	0	410	901
Grand Total	27	0	20	0	47	10	893	0	0	903	0	831	13	0	844	1794
Apprch %	57.4	0	42.6	0		1.1	98.9	0	0		0	98.5	1.5	0		
Total %	1.5	0	1.1	0	2.6	0.6	49.8	0	0	50.3	0	46.3	0.7	0	47	
Cars	26	0	16	0	42	9	798	0	0	807	0	801	13	0	814	1663
% Cars	96.3	0	80	0	89.4	90	89.4	0	0	89.4	0	96.4	100	0	96.4	92.7
Trucks (SU)	1	0	4	0	5	1	72	0	0	73	0	22	0	0	22	100
% Trucks (SU)	3.7	0	20	0	10.6	10	8.1	0	0	8.1	0	2.6	0	0	2.6	5.6
Trucks (TT)	0	0	0	0	0	0	23	0	0	23	0	8	0	0	8	31
% Trucks (TT)	0	0	0	0	0	0	2.6	0	0	2.5	0	1	0	0	0.9	1.7

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Job #: 2241-99-002T

File Name : Memorial Drive and 8th Ave - AM
Site Code : 00000000
Start Date : 3/10/2022

	8th Avenue Eastbound					Memorial Drive Northbound					Memorial Drive Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	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	0	5	0	8	1	130	0	0	131	0	114	0	0	114	253
07:45 AM	2	0	1	0	3	2	112	0	0	114	0	133	1	0	134	251
08:00 AM	4	0	1	0	5	0	126	0	0	126	0	111	4	0	115	246
08:15 AM	6	0	3	0	9	0	105	0	0	105	0	97	1	0	98	212
Total Volume	15	0	10	0	25	3	473	0	0	476	0	455	6	0	461	962
% App. Total	60	0	40	0		0.6	99.4	0	0		0	98.7	1.3	0		
PHF	.625	.000	.500	.000	.694	.375	.910	.000	.000	.908	.000	.855	.375	.000	.860	.951
Cars	15	0	8	0	23	3	416	0	0	419	0	448	6	0	454	896
% Cars	100	0	80.0	0	92.0	100	87.9	0	0	88.0	0	98.5	100	0	98.5	93.1
Trucks (SU)	0	0	2	0	2	0	44	0	0	44	0	4	0	0	4	50
% Trucks (SU)	0	0	20.0	0	8.0	0	9.3	0	0	9.2	0	0.9	0	0	0.9	5.2
Trucks (TT)	0	0	0	0	0	0	13	0	0	13	0	3	0	0	3	16
% Trucks (TT)	0	0	0	0	0	0	2.7	0	0	2.7	0	0.7	0	0	0.7	1.7

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	8th Avenue Eastbound					Memorial Drive Northbound					Memorial Drive Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
04:30 PM	3	0	0	3	6	4	110	0	0	114	0	167	0	0	167	287
04:45 PM	4	0	2	0	6	1	129	0	0	130	0	146	1	0	147	283
Total	7	0	2	3	12	5	239	0	0	244	0	313	1	0	314	570
05:00 PM	2	0	4	1	7	3	140	0	0	143	0	159	2	0	161	311
05:15 PM	4	0	3	0	7	0	113	0	0	113	0	168	0	0	168	288
05:30 PM	2	0	1	0	3	4	140	0	0	144	0	153	1	0	154	301
05:45 PM	3	0	1	0	4	0	130	0	0	130	0	130	2	0	132	266
Total	11	0	9	1	21	7	523	0	0	530	0	610	5	0	615	1166
06:00 PM	1	0	3	1	5	0	118	0	0	118	0	109	1	0	110	233
06:15 PM	3	0	4	0	7	0	116	0	0	116	0	103	1	0	104	227
Grand Total	22	0	18	5	45	12	996	0	0	1008	0	1135	8	0	1143	2196
Apprch %	48.9	0	40	11.1		1.2	98.8	0	0		0	99.3	0.7	0		
Total %	1	0	0.8	0.2	2	0.5	45.4	0	0	45.9	0	51.7	0.4	0	52	
Cars	21	0	15	5	41	10	933	0	0	943	0	1123	7	0	1130	2114
% Cars	95.5	0	83.3	100	91.1	83.3	93.7	0	0	93.6	0	98.9	87.5	0	98.9	96.3
Trucks (SU)	1	0	3	0	4	2	60	0	0	62	0	10	1	0	11	77
% Trucks (SU)	4.5	0	16.7	0	8.9	16.7	6	0	0	6.2	0	0.9	12.5	0	1	3.5
Trucks (TT)	0	0	0	0	0	0	3	0	0	3	0	2	0	0	2	5
% Trucks (TT)	0	0	0	0	0	0	0.3	0	0	0.3	0	0.2	0	0	0.2	0.2

Dynamic Traffic, LLC

1904 Main Street, Lake Como, NJ 07719
245 Main Street - Suite #110, Chester, NJ 07930
732-681-0760

E/W: 8th Avenue
N/S: Memorial Drive
Town/County: Neptune/Monmouth
Job #: 2241-99-002T

File Name : Memorial Drive and 8th Ave - PM
Site Code : 00000000
Start Date : 3/10/2022

	8th Avenue Eastbound					Memorial Drive Northbound					Memorial Drive Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1																
Peak Hour for Entire Intersection Begins at 04:45 PM																
04:45 PM	4	0	2	0	6	1	129	0	0	130	0	146	1	0	147	283
05:00 PM	2	0	4	1	7	3	140	0	0	143	0	159	2	0	161	311
05:15 PM	4	0	3	0	7	0	113	0	0	113	0	168	0	0	168	288
05:30 PM	2	0	1	0	3	4	140	0	0	144	0	153	1	0	154	301
Total Volume	12	0	10	1	23	8	522	0	0	530	0	626	4	0	630	1183
% App. Total	52.2	0	43.5	4.3		1.5	98.5	0	0		0	99.4	0.6	0		
PHF	.750	.000	.625	.250	.821	.500	.932	.000	.000	.920	.000	.932	.500	.000	.938	.951
Cars	11	0	8	1	20	7	487	0	0	494	0	623	3	0	626	1140
% Cars	91.7	0	80.0	100	87.0	87.5	93.3	0	0	93.2	0	99.5	75.0	0	99.4	96.4
Trucks (SU)	1	0	2	0	3	1	34	0	0	35	0	3	1	0	4	42
% Trucks (SU)	8.3	0	20.0	0	13.0	12.5	6.5	0	0	6.6	0	0.5	25.0	0	0.6	3.6
Trucks (TT)	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
% Trucks (TT)	0	0	0	0	0	0	0.2	0	0	0.2	0	0	0	0	0	0.1

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732-681-0760

E/W: 9th Avenue
N/S: Memorial Drive
Town/County: Neptune/Monmouth
Job #: 2241-99-002T

File Name : Memorial Drive and 9th Ave - AM
Site Code : 00000000
Start Date : 3/10/2022
Page No : 1

Groups Printed- Cars - Trucks (SU) - Trucks (TT)

	9th Avenue Eastbound					Memorial Drive Northbound					Memorial Drive Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	4	0	1	0	5	2	88	0	0	90	0	78	1	0	79	174
07:15 AM	1	0	3	0	4	2	100	0	0	102	0	106	1	0	107	213
07:30 AM	4	0	1	0	5	3	130	0	0	133	0	111	3	0	114	252
07:45 AM	3	0	2	0	5	2	112	1	0	115	0	125	3	0	128	248
Total	12	0	7	0	19	9	430	1	0	440	0	420	8	0	428	887
08:00 AM	2	0	2	0	4	3	126	0	0	129	0	111	3	0	114	247
08:15 AM	1	0	0	0	1	2	105	0	0	107	0	105	1	0	106	214
08:30 AM	1	0	2	0	3	5	116	0	0	121	0	102	4	0	106	230
08:45 AM	2	0	1	0	3	4	116	0	0	120	0	84	1	0	85	208
Total	6	0	5	0	11	14	463	0	0	477	0	402	9	0	411	899
Grand Total	18	0	12	0	30	23	893	1	0	917	0	822	17	0	839	1786
Apprch %	60	0	40	0		2.5	97.4	0.1	0		0	98	2	0		
Total %	1	0	0.7	0	1.7	1.3	50	0.1	0	51.3	0	46	1	0	47	
Cars	16	0	8	0	24	20	798	1	0	819	0	731	14	0	745	1588
% Cars	88.9	0	66.7	0	80	87	89.4	100	0	89.3	0	88.9	82.4	0	88.8	88.9
Trucks (SU)	2	0	3	0	5	1	72	0	0	73	0	73	3	0	76	154
% Trucks (SU)	11.1	0	25	0	16.7	4.3	8.1	0	0	8	0	8.9	17.6	0	9.1	8.6
Trucks (TT)	0	0	1	0	1	2	23	0	0	25	0	18	0	0	18	44
% Trucks (TT)	0	0	8.3	0	3.3	8.7	2.6	0	0	2.7	0	2.2	0	0	2.1	2.5

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E/W: 9th Avenue
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Town/County: Neptune/Monmouth
Job #: 2241-99-002T

File Name : Memorial Drive and 9th Ave - AM
Site Code : 00000000
Start Date : 3/10/2022

	9th Avenue Eastbound					Memorial Drive Northbound					Memorial Drive Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	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	4	0	1	0	5	3	130	0	0	133	0	111	3	0	114	252
07:45 AM	3	0	2	0	5	2	112	1	0	115	0	125	3	0	128	248
08:00 AM	2	0	2	0	4	3	126	0	0	129	0	111	3	0	114	247
08:15 AM	1	0	0	0	1	2	105	0	0	107	0	105	1	0	106	214
Total Volume	10	0	5	0	15	10	473	1	0	484	0	452	10	0	462	961
% App. Total	66.7	0	33.3	0		2.1	97.7	0.2	0		0	97.8	2.2	0		
PHF	.625	.000	.625	.000	.750	.833	.910	.250	.000	.910	.000	.904	.833	.000	.902	.953
Cars	8	0	3	0	11	8	416	1	0	425	0	409	7	0	416	852
% Cars	80.0	0	60.0	0	73.3	80.0	87.9	100	0	87.8	0	90.5	70.0	0	90.0	88.7
Trucks (SU)	2	0	2	0	4	1	44	0	0	45	0	37	3	0	40	89
% Trucks (SU)	20.0	0	40.0	0	26.7	10.0	9.3	0	0	9.3	0	8.2	30.0	0	8.7	9.3
Trucks (TT)	0	0	0	0	0	1	13	0	0	14	0	6	0	0	6	20
% Trucks (TT)	0	0	0	0	0	10.0	2.7	0	0	2.9	0	1.3	0	0	1.3	2.1

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Job #: 2241-99-002T

File Name : Memorial Drive and 9th Ave - PM
Site Code : 00000000
Start Date : 3/10/2022
Page No : 1

Groups Printed- Cars - Trucks (SU) - Trucks (TT)

	9th Avenue Eastbound					Memorial Drive Northbound					Memorial Drive Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
04:30 PM	6	0	3	0	9	4	110	0	0	114	0	163	3	0	166	289
04:45 PM	1	0	3	0	4	3	129	0	0	132	0	146	2	0	148	284
Total	7	0	6	0	13	7	239	0	0	246	0	309	5	0	314	573
05:00 PM	1	0	4	0	5	3	140	0	0	143	0	155	3	0	158	306
05:15 PM	1	0	7	0	8	5	113	0	0	118	0	164	5	0	169	295
05:30 PM	3	0	6	0	9	3	140	0	0	143	0	143	4	0	147	299
05:45 PM	2	0	4	0	6	0	130	0	0	130	0	124	3	0	127	263
Total	7	0	21	0	28	11	523	0	0	534	0	586	15	0	601	1163
06:00 PM	3	0	3	0	6	1	118	0	0	119	0	98	6	0	104	229
06:15 PM	1	0	1	0	2	2	116	0	0	118	0	100	1	0	101	221
Grand Total	18	0	31	0	49	21	996	0	0	1017	0	1093	27	0	1120	2186
Apprch %	36.7	0	63.3	0		2.1	97.9	0	0		0	97.6	2.4	0		
Total %	0.8	0	1.4	0	2.2	1	45.6	0	0	46.5	0	50	1.2	0	51.2	
Cars	18	0	27	0	45	16	933	0	0	949	0	1028	24	0	1052	2046
% Cars	100	0	87.1	0	91.8	76.2	93.7	0	0	93.3	0	94.1	88.9	0	93.9	93.6
Trucks (SU)	0	0	3	0	3	5	60	0	0	65	0	53	3	0	56	124
% Trucks (SU)	0	0	9.7	0	6.1	23.8	6	0	0	6.4	0	4.8	11.1	0	5	5.7
Trucks (TT)	0	0	1	0	1	0	3	0	0	3	0	12	0	0	12	16
% Trucks (TT)	0	0	3.2	0	2	0	0.3	0	0	0.3	0	1.1	0	0	1.1	0.7

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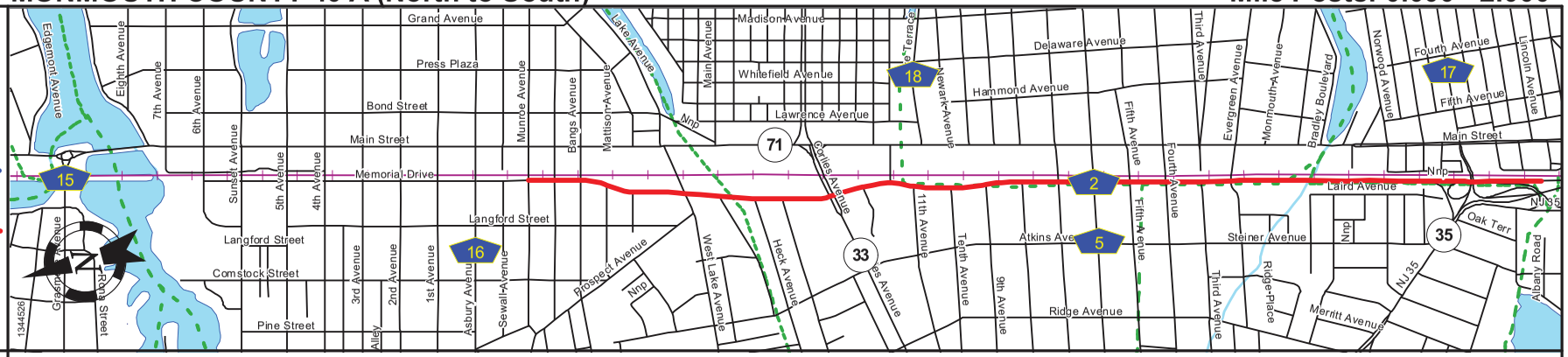
Job #: 2241-99-002T

File Name : Memorial Drive and 9th Ave - PM
Site Code : 00000000
Start Date : 3/10/2022

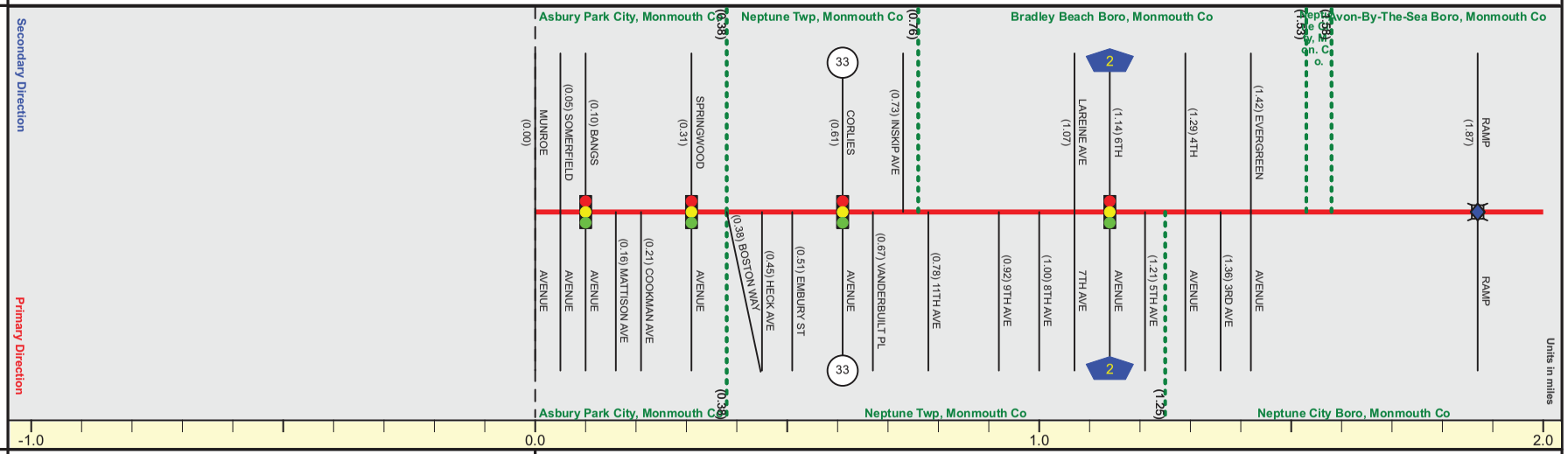
	9th Avenue Eastbound					Memorial Drive Northbound					Memorial Drive Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1																
Peak Hour for Entire Intersection Begins at 04:45 PM																
04:45 PM	1	0	3	0	4	3	129	0	0	132	0	146	2	0	148	284
05:00 PM	1	0	4	0	5	3	140	0	0	143	0	155	3	0	158	306
05:15 PM	1	0	7	0	8	5	113	0	0	118	0	164	5	0	169	295
05:30 PM	3	0	6	0	9	3	140	0	0	143	0	143	4	0	147	299
Total Volume	6	0	20	0	26	14	522	0	0	536	0	608	14	0	622	1184
% App. Total	23.1	0	76.9	0		2.6	97.4	0	0		0	97.7	2.3	0		
PHF	.500	.000	.714	.000	.722	.700	.932	.000	.000	.937	.000	.927	.700	.000	.920	.967
Cars	6	0	17	0	23	12	487	0	0	499	0	573	11	0	584	1106
% Cars	100	0	85.0	0	88.5	85.7	93.3	0	0	93.1	0	94.2	78.6	0	93.9	93.4
Trucks (SU)	0	0	2	0	2	2	34	0	0	36	0	33	3	0	36	74
% Trucks (SU)	0	0	10.0	0	7.7	14.3	6.5	0	0	6.7	0	5.4	21.4	0	5.8	6.3
Trucks (TT)	0	0	1	0	1	0	1	0	0	1	0	2	0	0	2	4
% Trucks (TT)	0	0	5.0	0	3.8	0	0.2	0	0	0.2	0	0.3	0	0	0.3	0.3

MONMOUTH COUNTY 40 A (North to South)

Mile Posts: 0.000 - 2.000



Pavement	
Shoulder	
Number of Lanes	
Speed Limit	
Street Name	



Street Name	Memorial Drive
Jurisdiction	Municipal / County
Functional Class	Urban Major Collector
Federal Aid - NHS Sy	STP
Control Section	
Speed Limit	NOT POSTED / 30 / 40 / 45
Number of Lanes	4
Med. Type	None
Med. Width	0
Pavement	48
Shoulder	0
Traffic Volume	
Traffic Sta. ID	
Structure No.	1311157
Enlarged Views	

Begin Monmouth County 40A MP=0

Page Created: March, 2019

SRI = 13000040A_

Date last inventoried: July 2011

Appendix C
Capacity Analysis

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	17	11	3	520	512	7
Future Vol, veh/h	17	11	3	520	512	7
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	95	95	95	95	95	95
Heavy Vehicles, %	0	20	0	12	2	0
Mvmt Flow	18	12	3	547	539	7

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	823	273	546	0	-	0
Stage 1	543	-	-	-	-	-
Stage 2	280	-	-	-	-	-
Critical Hdwy	6.8	7.3	4.1	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.5	2.2	-	-	-
Pot Cap-1 Maneuver	316	673	1033	-	-	-
Stage 1	552	-	-	-	-	-
Stage 2	748	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	315	673	1033	-	-	-
Mov Cap-2 Maneuver	315	-	-	-	-	-
Stage 1	550	-	-	-	-	-
Stage 2	748	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.8	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1033	-	398	-	-
HCM Lane V/C Ratio	0.003	-	0.074	-	-
HCM Control Delay (s)	8.5	0	14.8	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	14	11	9	592	707	5
Future Vol, veh/h	14	11	9	592	707	5
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	95	95	95	95	95	95
Heavy Vehicles, %	8	20	13	7	1	25
Mvmt Flow	15	12	9	623	744	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1077	375	749	0	-	0
Stage 1	747	-	-	-	-	-
Stage 2	330	-	-	-	-	-
Critical Hdwy	6.96	7.3	4.36	-	-	-
Critical Hdwy Stg 1	5.96	-	-	-	-	-
Critical Hdwy Stg 2	5.96	-	-	-	-	-
Follow-up Hdwy	3.58	3.5	2.33	-	-	-
Pot Cap-1 Maneuver	204	574	787	-	-	-
Stage 1	414	-	-	-	-	-
Stage 2	683	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	201	574	787	-	-	-
Mov Cap-2 Maneuver	201	-	-	-	-	-
Stage 1	407	-	-	-	-	-
Stage 2	683	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	19.1	0.2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	787	-	281	-	-
HCM Lane V/C Ratio	0.012	-	0.094	-	-
HCM Control Delay (s)	9.6	0.1	19.1	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	18	12	4	547	538	7
Future Vol, veh/h	18	12	4	547	538	7
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	95	95	95	95	95	95
Heavy Vehicles, %	0	20	0	12	2	0
Mvmt Flow	19	13	4	576	566	7

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	866	287	573	0	-	0
Stage 1	570	-	-	-	-	-
Stage 2	296	-	-	-	-	-
Critical Hdwy	6.8	7.3	4.1	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.5	2.2	-	-	-
Pot Cap-1 Maneuver	296	659	1010	-	-	-
Stage 1	535	-	-	-	-	-
Stage 2	735	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	294	659	1010	-	-	-
Mov Cap-2 Maneuver	294	-	-	-	-	-
Stage 1	532	-	-	-	-	-
Stage 2	735	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.4	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1010	-	378	-	-
HCM Lane V/C Ratio	0.004	-	0.084	-	-
HCM Control Delay (s)	8.6	0	15.4	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	15	12	9	622	743	6
Future Vol, veh/h	15	12	9	622	743	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	8	20	13	7	1	25
Mvmt Flow	16	13	9	655	782	6

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1131	394	788	0	-	0
Stage 1	785	-	-	-	-	-
Stage 2	346	-	-	-	-	-
Critical Hdwy	6.96	7.3	4.36	-	-	-
Critical Hdwy Stg 1	5.96	-	-	-	-	-
Critical Hdwy Stg 2	5.96	-	-	-	-	-
Follow-up Hdwy	3.58	3.5	2.33	-	-	-
Pot Cap-1 Maneuver	188	557	759	-	-	-
Stage 1	395	-	-	-	-	-
Stage 2	670	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	184	557	759	-	-	-
Mov Cap-2 Maneuver	184	-	-	-	-	-
Stage 1	387	-	-	-	-	-
Stage 2	670	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	20.4	0.2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	759	-	262	-	-
HCM Lane V/C Ratio	0.012	-	0.108	-	-
HCM Control Delay (s)	9.8	0.1	20.4	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.4	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	20	17	6	549	542	8
Future Vol, veh/h	20	17	6	549	542	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	95	95	95	95	95	95
Heavy Vehicles, %	0	20	0	12	2	0
Mvmt Flow	21	18	6	578	571	8

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	876	290	579	0	-	0
Stage 1	575	-	-	-	-	-
Stage 2	301	-	-	-	-	-
Critical Hdwy	6.8	7.3	4.1	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.5	2.2	-	-	-
Pot Cap-1 Maneuver	292	656	1005	-	-	-
Stage 1	532	-	-	-	-	-
Stage 2	731	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	289	656	1005	-	-	-
Mov Cap-2 Maneuver	289	-	-	-	-	-
Stage 1	527	-	-	-	-	-
Stage 2	731	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.3	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1005	-	389	-	-
HCM Lane V/C Ratio	0.006	-	0.1	-	-
HCM Control Delay (s)	8.6	0	15.3	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	18	17	16	629	748	10
Future Vol, veh/h	18	17	16	629	748	10
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	95	95	95	95	95	95
Heavy Vehicles, %	8	20	13	7	1	25
Mvmt Flow	19	18	17	662	787	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1158	399	798	0	-	0
Stage 1	793	-	-	-	-	-
Stage 2	365	-	-	-	-	-
Critical Hdwy	6.96	7.3	4.36	-	-	-
Critical Hdwy Stg 1	5.96	-	-	-	-	-
Critical Hdwy Stg 2	5.96	-	-	-	-	-
Follow-up Hdwy	3.58	3.5	2.33	-	-	-
Pot Cap-1 Maneuver	180	553	753	-	-	-
Stage 1	391	-	-	-	-	-
Stage 2	655	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	174	553	753	-	-	-
Mov Cap-2 Maneuver	174	-	-	-	-	-
Stage 1	377	-	-	-	-	-
Stage 2	655	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	21	0.4	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	753	-	261	-	-
HCM Lane V/C Ratio	0.022	-	0.141	-	-
HCM Control Delay (s)	9.9	0.2	21	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.5	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	11	6	11	526	513	11
Future Vol, veh/h	11	6	11	526	513	11
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	95	95	95	95	95	95
Heavy Vehicles, %	20	40	20	12	10	30
Mvmt Flow	12	6	12	554	540	12

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	847	276	552	0	-	0
Stage 1	546	-	-	-	-	-
Stage 2	301	-	-	-	-	-
Critical Hdwy	7.2	7.7	4.5	-	-	-
Critical Hdwy Stg 1	6.2	-	-	-	-	-
Critical Hdwy Stg 2	6.2	-	-	-	-	-
Follow-up Hdwy	3.7	3.7	2.4	-	-	-
Pot Cap-1 Maneuver	268	619	899	-	-	-
Stage 1	496	-	-	-	-	-
Stage 2	674	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	263	619	899	-	-	-
Mov Cap-2 Maneuver	263	-	-	-	-	-
Stage 1	487	-	-	-	-	-
Stage 2	674	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.5	0.3	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	899	-	330	-	-
HCM Lane V/C Ratio	0.013	-	0.054	-	-
HCM Control Delay (s)	9.1	0.1	16.5	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	7	23	16	590	689	16
Future Vol, veh/h	7	23	16	590	689	16
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	97	97	97	97	97	97
Heavy Vehicles, %	0	15	14	7	6	21
Mvmt Flow	7	24	16	608	710	16

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1054	363	726	0	-	0
Stage 1	718	-	-	-	-	-
Stage 2	336	-	-	-	-	-
Critical Hdwy	6.8	7.2	4.38	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.45	2.34	-	-	-
Pot Cap-1 Maneuver	225	598	798	-	-	-
Stage 1	449	-	-	-	-	-
Stage 2	702	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	218	598	798	-	-	-
Mov Cap-2 Maneuver	218	-	-	-	-	-
Stage 1	436	-	-	-	-	-
Stage 2	702	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.1	0.4	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	798	-	425	-	-
HCM Lane V/C Ratio	0.021	-	0.073	-	-
HCM Control Delay (s)	9.6	0.1	14.1	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	12	6	12	553	539	12
Future Vol, veh/h	12	6	12	553	539	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	95	95	95	95	95	95
Heavy Vehicles, %	20	40	20	12	10	30
Mvmt Flow	13	6	13	582	567	13

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	891	290	580	0	-	0
Stage 1	574	-	-	-	-	-
Stage 2	317	-	-	-	-	-
Critical Hdwy	7.2	7.7	4.5	-	-	-
Critical Hdwy Stg 1	6.2	-	-	-	-	-
Critical Hdwy Stg 2	6.2	-	-	-	-	-
Follow-up Hdwy	3.7	3.7	2.4	-	-	-
Pot Cap-1 Maneuver	250	605	876	-	-	-
Stage 1	479	-	-	-	-	-
Stage 2	660	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	245	605	876	-	-	-
Mov Cap-2 Maneuver	245	-	-	-	-	-
Stage 1	468	-	-	-	-	-
Stage 2	660	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	17.5	0.3	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	876	-	306	-	-
HCM Lane V/C Ratio	0.014	-	0.062	-	-
HCM Control Delay (s)	9.2	0.1	17.5	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	7	25	17	620	724	17
Future Vol, veh/h	7	25	17	620	724	17
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	97	97	97	97	97	97
Heavy Vehicles, %	0	15	14	7	6	21
Mvmt Flow	7	26	18	639	746	18

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1111	382	764	0	-	0
Stage 1	755	-	-	-	-	-
Stage 2	356	-	-	-	-	-
Critical Hdwy	6.8	7.2	4.38	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.45	2.34	-	-	-
Pot Cap-1 Maneuver	206	580	771	-	-	-
Stage 1	430	-	-	-	-	-
Stage 2	686	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	199	580	771	-	-	-
Mov Cap-2 Maneuver	199	-	-	-	-	-
Stage 1	415	-	-	-	-	-
Stage 2	686	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.6	0.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	771	-	409	-	-
HCM Lane V/C Ratio	0.023	-	0.081	-	-
HCM Control Delay (s)	9.8	0.2	14.6	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.3	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	15	10	14	555	540	13
Future Vol, veh/h	15	10	14	555	540	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	20	40	20	12	10	30
Mvmt Flow	16	11	15	584	568	14

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	897	291	582	0	-	0
Stage 1	575	-	-	-	-	-
Stage 2	322	-	-	-	-	-
Critical Hdwy	7.2	7.7	4.5	-	-	-
Critical Hdwy Stg 1	6.2	-	-	-	-	-
Critical Hdwy Stg 2	6.2	-	-	-	-	-
Follow-up Hdwy	3.7	3.7	2.4	-	-	-
Pot Cap-1 Maneuver	248	604	874	-	-	-
Stage 1	479	-	-	-	-	-
Stage 2	656	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	242	604	874	-	-	-
Mov Cap-2 Maneuver	242	-	-	-	-	-
Stage 1	467	-	-	-	-	-
Stage 2	656	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	17.3	0.3	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	874	-	318	-	-
HCM Lane V/C Ratio	0.017	-	0.083	-	-
HCM Control Delay (s)	9.2	0.1	17.3	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.3	-	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	30	24	623	728	21
Future Vol, veh/h	10	30	24	623	728	21
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	97	97	97	97	97	97
Heavy Vehicles, %	0	15	14	7	6	21
Mvmt Flow	10	31	25	642	751	22

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1133	387	773	0	-	0
Stage 1	762	-	-	-	-	-
Stage 2	371	-	-	-	-	-
Critical Hdwy	6.8	7.2	4.38	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.45	2.34	-	-	-
Pot Cap-1 Maneuver	200	576	764	-	-	-
Stage 1	427	-	-	-	-	-
Stage 2	674	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	190	576	764	-	-	-
Mov Cap-2 Maneuver	190	-	-	-	-	-
Stage 1	405	-	-	-	-	-
Stage 2	674	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.6	0.6	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	764	-	382	-	-
HCM Lane V/C Ratio	0.032	-	0.108	-	-
HCM Control Delay (s)	9.9	0.2	15.6	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.4	-	-

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	30	11	3	7	4
Future Vol, veh/h	2	30	11	3	7	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	8	0	2	2	2
Mvmt Flow	2	35	13	4	8	5

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	17	0	-	0	54	15
Stage 1	-	-	-	-	15	-
Stage 2	-	-	-	-	39	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1600	-	-	-	954	1065
Stage 1	-	-	-	-	1008	-
Stage 2	-	-	-	-	983	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1600	-	-	-	953	1065
Mov Cap-2 Maneuver	-	-	-	-	953	-
Stage 1	-	-	-	-	1007	-
Stage 2	-	-	-	-	983	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	8.7
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1600	-	-	-	991
HCM Lane V/C Ratio	0.001	-	-	-	0.013
HCM Control Delay (s)	7.3	0	-	-	8.7
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	7	27	15	11	8	5
Future Vol, veh/h	7	27	15	11	8	5
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	73	73	73	73	73	73
Heavy Vehicles, %	2	13	17	2	2	2
Mvmt Flow	10	37	21	15	11	7

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	36	0	-	0	86	29
Stage 1	-	-	-	-	29	-
Stage 2	-	-	-	-	57	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1575	-	-	-	915	1046
Stage 1	-	-	-	-	994	-
Stage 2	-	-	-	-	966	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1575	-	-	-	910	1046
Mov Cap-2 Maneuver	-	-	-	-	910	-
Stage 1	-	-	-	-	988	-
Stage 2	-	-	-	-	966	-

Approach	EB	WB	SB
HCM Control Delay, s	1.5	0	8.8
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1575	-	-	-	958
HCM Lane V/C Ratio	0.006	-	-	-	0.019
HCM Control Delay (s)	7.3	0	-	-	8.8
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	18	2	3	24	4	7
Future Vol, veh/h	18	2	3	24	4	7
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	80	80	80	80	80	80
Heavy Vehicles, %	27	2	2	25	2	2
Mvmt Flow	23	3	4	30	5	9

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	26	0	63	25
Stage 1	-	-	-	-	25	-
Stage 2	-	-	-	-	38	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1588	-	943	1051
Stage 1	-	-	-	-	998	-
Stage 2	-	-	-	-	984	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1588	-	940	1051
Mov Cap-2 Maneuver	-	-	-	-	940	-
Stage 1	-	-	-	-	998	-
Stage 2	-	-	-	-	981	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.8	8.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1008	-	-	1588	-
HCM Lane V/C Ratio	0.014	-	-	0.002	-
HCM Control Delay (s)	8.6	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	32	7	11	34	5	8
Future Vol, veh/h	32	7	11	34	5	8
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	75	75	75	75	75	75
Heavy Vehicles, %	12	2	2	18	2	2
Mvmt Flow	43	9	15	45	7	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	52	0	123	48
Stage 1	-	-	-	-	48	-
Stage 2	-	-	-	-	75	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1554	-	872	1021
Stage 1	-	-	-	-	974	-
Stage 2	-	-	-	-	948	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1554	-	863	1021
Mov Cap-2 Maneuver	-	-	-	-	863	-
Stage 1	-	-	-	-	974	-
Stage 2	-	-	-	-	939	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.8	8.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	954	-	-	1554	-
HCM Lane V/C Ratio	0.018	-	-	0.009	-
HCM Control Delay (s)	8.8	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-