

TRAFFIC IMPACT STUDY

For

**Stack Storage, LLC
Proposed Self-Storage Facility**

Property Located at:

**Crine Road (CR 4)/Vanderburg Road and Boundary Road
Block 360 – Lots 7 & 8
Township of Marlboro, Monmouth County, NJ**

Prepared by:



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

Nick Verderese, PE
NJ PE License #38991

Justin P. Taylor, PE, PTOE
NJ PE License #45988

June 22, 2021

3724-99-001T

INTRODUCTION

It is proposed to construct a self-storage facility on a parcel of land that is currently undeveloped, located in the southwest corner of the intersection of Crine Road (CR 4)/Vanderburg Road and Boundary Road in the Township of Marlboro, Monmouth County, New Jersey (see Figure 1 in Appendix A). The site is designated as Block 360 – Lots 7 and 8 on the Marlboro Township Tax Maps. It is proposed to construct a 89,700 SF self-storage facility (“The Project”). The site is located within the LI - Light Industrial Zone. It is proposed to provide access to The Project via a full movement driveway along Vanderburg Road.

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 PM and Saturday midday peak periods at the intersection of Crine Road (CR 4)/Vanderburg Road and Boundary Road.
- 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 point of ingress and egress was 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 recreational vehicles or emergency vehicles.
- The parking layout and supply was assessed based on accepted design standards, local requirements, and demand experienced at similar developments.

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:

Crine Road (CR 4) is an Urban Major Collector roadway under Monmouth County jurisdiction with a general east/west orientation. In the vicinity of the site the posted speed limit is 45 MPH and the roadway provides one travel lane in each direction. On-street parking is not permitted. Curb and sidewalk are not provided along either side of the roadway. Crine Road (CR 4) provides a straight horizontal alignment and an upgrade from east to west. The land uses along Crine Road (CR 4) in the vicinity of The Project are primarily residential.

Vanderburg Road is an Urban Major Collector roadway under Marlboro Township jurisdiction with a general east/west orientation. In the vicinity of the site the posted speed limit is 45 MPH and the roadway provides one travel lane in each direction. On-street parking is not permitted. Curb is provided along both sides of the roadway, while sidewalk is not provided along either side of the roadway. Vanderburg Road provides a straight horizontal alignment along the site frontage and a relatively flat vertical alignment. The land uses along Vanderburg Road in the vicinity of The Project are mixed residential, commercial, and industrial.

Boundary Road is an Urban Major Collector roadway under Colts Neck Township and Marlboro Township jurisdiction with a general north/south orientation. In the vicinity of the site the posted speed limit is 40 MPH and the roadway provides one travel lane in each direction. On-street parking is not permitted. Curb is provided along the northbound side of the roadway to the north of Crine Road (CR 4)/Vanderburg Road and along the southside of the roadway to the south of Crine Road (CR 4)/Vanderburg Road. Sidewalk is not provided along either side of the roadway. Boundary Road provides a relatively straight vertical alignment and a downgrade from north to south. The land uses along Boundary Road in the vicinity of The Project are mixed residential and industrial.

Existing Traffic Volumes

Manual turning movement (MTM) counts were conducted on Thursday, June 10, 2021 from 4:30 to 6:30 PM and on Saturday, June 12, 2021 from 11:00 AM to 2:00 PM at the intersection of Crine Road (CR 4)/Vanderburg Road and Boundary Road.

Review of the collected traffic data reveals that the weekday evening PSH occurs between 4:30 PM - 5:30 PM and the Saturday PSH occurs between 12:45 PM - 1:45 PM. Figure 2, located in Appendix B, 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 various protocols associated with the COVID-19 pandemic were in effect as of the time of the traffic counts. As a result, current traffic volumes on the surrounding roadways may be atypically low at this time and would not be representative of “existing” traffic conditions. While there are currently no historical traffic volumes published on the study roadways in the vicinity of the site, it is noted that this firm recently conducted a traffic count comparison for existing traffic volumes in Marlboro Township, contained within the *Traffic Impact Study* for the Marlboro Community Commerce Park, prepared Dynamic Traffic and dated April 30, 2021. Specially, this firm conducted MTM counts at the intersection of Amboy Road and Tennent Road on Tuesday, April 20, 2021 and normalized these volumes utilizing a June 2018 NJDOT ATR located along Tennant Road just east of Amboy Road.

In order to perform an appropriate comparison, the 2018 NJDOT traffic volumes were increased to better represent existing 2021 traffic volumes by applying a growth rate of 1.0% per year obtained from the NJDOT Annual Background Growth Rate Table for a period of three (3) years. The adjusted 2018 traffic volumes were then compared to the existing 2021 traffic counts as summarized in the table below.

**Table I
Traffic Count Comparison**

Location	Date	Peak Hour Traffic Volume		% Difference
		As-Counted	With Background Growth ^[1]	
		PM	PM	
Amboy Road and Tennent Road	June 2018	1,057	1,089	-9%
	April 2021	1,196	1,196	

^[1] June 2018 data increased by 1.00% per NJDOT Annual Background Growth Rate Table compounded annually for three years.

As seen above, the current traffic volumes were found to be higher than the historical traffic volumes grown to represent existing conditions during the weekday evening peak hour. It is noted that there is no published historical traffic data published during the Saturday peak hour. Therefore, no adjustment factor was applied to peak hour volumes.

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

All capacity analyses were performed utilizing Synchro 11 software. 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	PM PSH	SAT PSH
Crine Road (CR 4)/Vanderburg Road and Boundary Road	EB L	a (8)	a (7)
	WB L	a (8)	a (7)
	NB LTR	b (14)	b (11)
	SB LTR	b (15)	b (11)

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

The following are discussions pertaining to each of the existing intersections analyzed. It should be noted that the existing percentage of trucks and peak hour factors were used in the existing analysis.

Crine Road (CR 4)/Vanderburg Road and Boundary Road

Crine Road (CR 4)/Vanderburg Road intersects Boundary Road to form a four-leg intersection operating with the northbound and southbound approaches of Boundary Road under stop control. The eastbound and westbound approaches of Crine Road (CR 4)/Vanderburg Road both provide a shared left turn/through/right lane. The northbound and southbound approaches of Boundary Road both provide a shared left turn/through/right turn lane.

A review of the existing analysis reveals that all movements operate at levels of service “B” 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 2023 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 Marlboro Township Planning Board staff, there is one development in the vicinity of the site that has been approved but not yet constructed that is identified as a potential significant traffic generator, shown below. The Adjacent Development Traffic Volumes passing the site are shown on Figure 3. It was assumed that the background growth rate was adequate to account for the traffic associated with all developments not listed hereafter.

- A development consisting of 85 townhome units, 20 apartment units, a 4,000 SF drive-in bank, and 8,110 SF of retail space known as Marlboro Green, located in the southeast corner of the intersection of NJ Route 79 and Stevenson Drive, has been approved. Projections of the associated traffic volumes were obtained from Figure 12 contained within the Appendix A of the *Traffic Impact Study*, prepared by Langan Engineering and Environmental Services, Inc and dated April 30, 2020.

Future 2023 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 and adding the adjacent development traffic volumes. Figure 4, in Appendix A, shows the 2023 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 151 – Mini-Warehouse in the Institute of Transportation Engineers’ (ITE) publication, *Trip Generation, 10th Edition*. This publication sets forth trip generation rates based on traffic counts conducted at research sites throughout the country.

**Table IV
Trip Generation**

Trip Type	PM PSH			SAT PSH		
	In	Out	Total	In	Out	Total
89,700 SF Self-Storage Facility	7	8	15	17	11	28

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. Located in Appendix A, Figures 5 and 6 illustrate the Trip Distribution and the 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		PM PSH		SAT PSH	
			No Build	Build	No Build	Build
Crine Road (CR 4) / Vanderburg Road and Boundary Road	EB	L	a (8)	a (8)	a (7)	a (7)
	WB	L	a (8)	a (8)	a (7)	a (8)
	NB	LTR	b (15)	b (15)	b (12)	b (12)
	SB	LTR	c (16)	c (16)	b (11)	b (12)
Vanderburg Road and Site Driveway	WB	L	-	a (8)	-	a (8)
	NB	LR	-	b (11)	-	a (10)

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

Crine Road (CR 4)/Vanderburg Road and Boundary Road

With the addition of site generated each 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.

Vanderburg Road and Site Driveway

The site driveway is proposed to intersect Vanderburg Road to form an unsignalized T-intersection with the northbound approach of the site driveway operating under stop control. The eastbound approach of Vanderburg Road 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 “B” or better 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 new full movement driveway along Vanderburg Road.

The parking lot will be serviced by parking aisles with minimum widths of 30' for two-way circulation, which satisfies the Ordinance's minimum requirement of 25'. Review of the site plan design indicates that the site can sufficiently accommodate, within paved areas, a large wheel base vehicle, such as a fire truck or recreational vehicle, along with the automobile traffic anticipated.

Parking

The Marlboro Township Ordinance sets forth a parking requirement of 1 parking space per 5,000 SF for warehouse, storage, distribution, shipping and receiving facilities. This equates to a parking requirement of 18 spaces for the proposed 89,700 SF self-storage facility. The site as proposed provides 67 parking spaces, and as such the Ordinance requirement is satisfied.

It is proposed to provide parking stalls with dimensions of 10'x20, 12'x20' and 12'x30', which satisfy the Ordinance minimum requirement of 10'x20'.

FINDINGS AND CONCLUSIONS

Findings

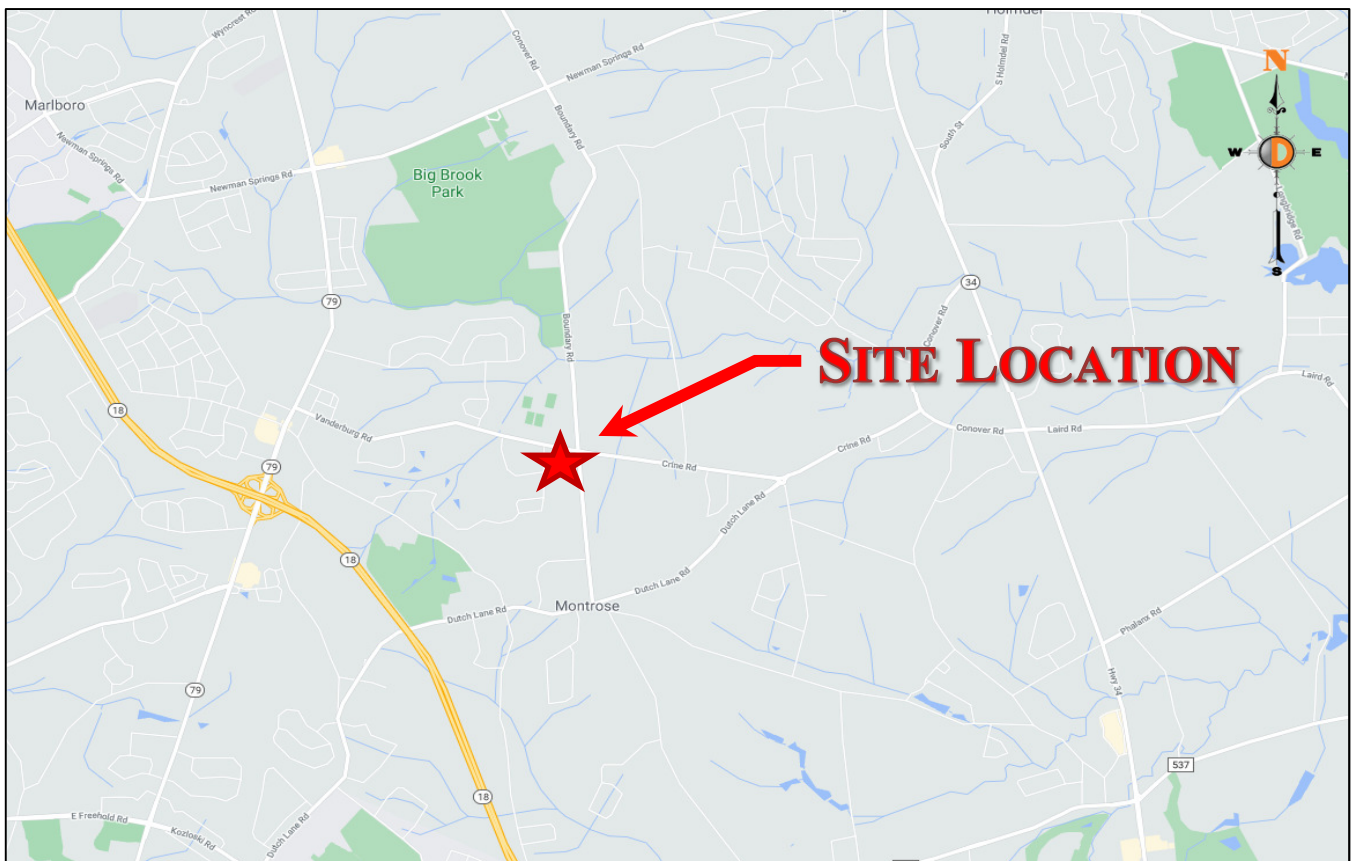
Based upon the detailed analyses as documented herein, the following findings are noted:

- The proposed 89,700 SF Self-Storage Facility, is projected to generate 5 entering trips and 4 exiting trips during the weekday morning peak hour, 7 entering trips and 8 exiting trips during the evening peak hour, and 17 entering trips and 11 exiting trips during the Saturday peak hour that are “new” to the adjacent roadway network.
- Access to the site is proposed to be provided via a new full movement driveway along Vanderburg Road.
- With the addition of site generated traffic, the intersection of Crine Road (CR 4)/Vanderburg Road and Boundary Road is anticipated to operate at No Build levels of service “B” or better during the peak hours studied.
- As designed, the intersection of Vanderburg Road and site driveway is anticipated to operate at levels of service “B” or better 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 and large wheel base vehicles.
- The proposed parking supply and design is sufficient to support the projected demand and satisfies the 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 Marlboro Township, Colts Neck Township and Monmouth County will not experience any significant degradation in operating conditions with the construction of The Project. The site driveway is 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.

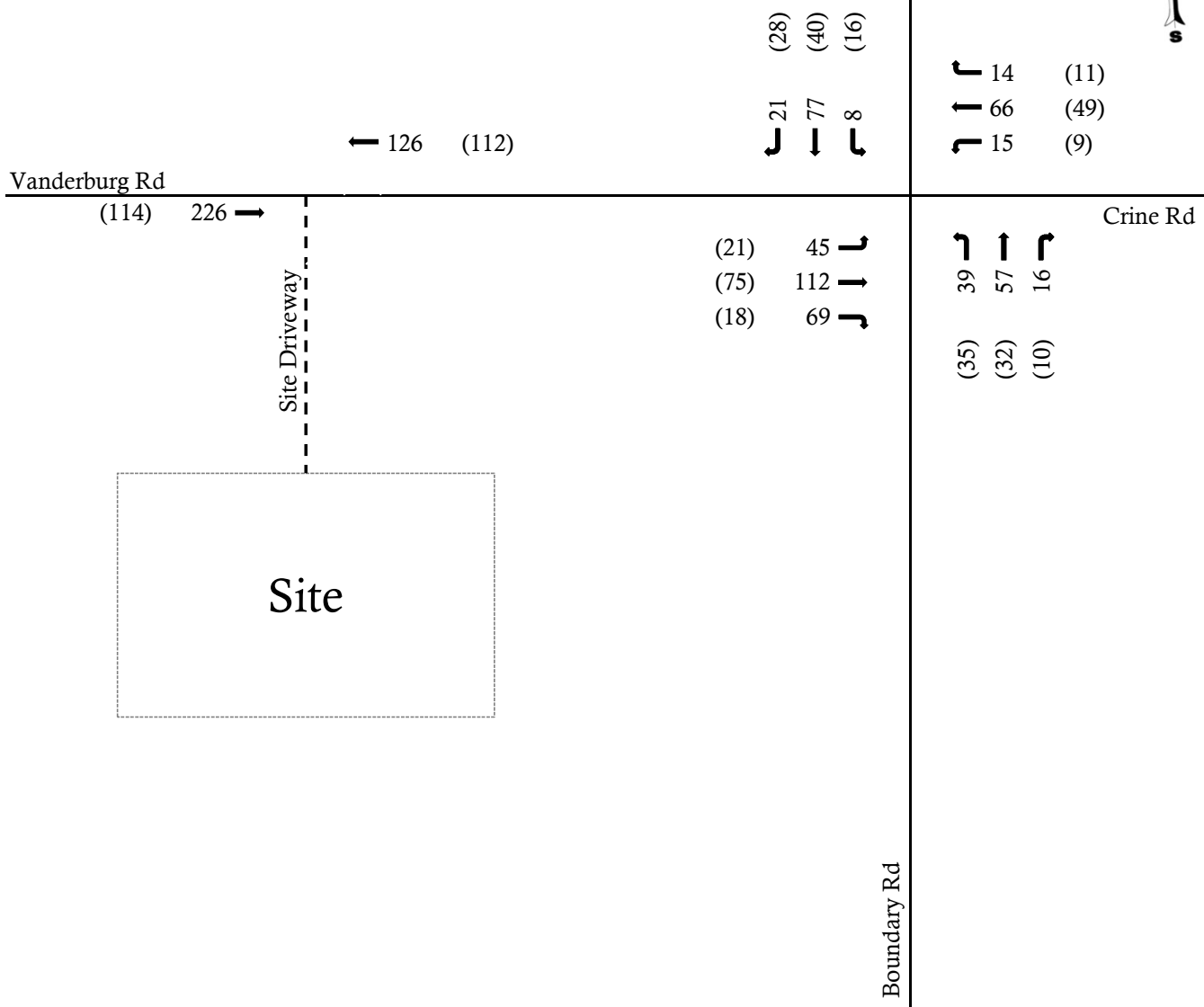
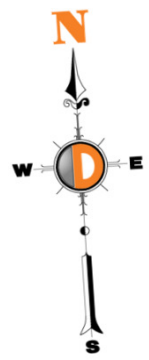
Appendix A
Traffic Volume Figures



Proposed Self-Storage
 Traffic Impact Study
 3724-99-001T
 6/21/2021

Figure 1

Site Location Map



LEGEND

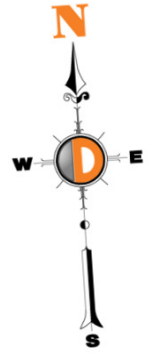
- Existing Roadway
- - - Proposed Roadway
- ← PM (SAT)



Proposed Self-Storage
 Traffic Impact Study
 3724-99-001T
 6/21/2021

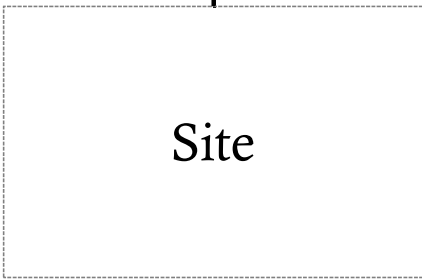
Figure 2

Existing Traffic Volumes



Vanderburg Rd

Crine Rd






Site

Site Driveway

Boundary Rd

LEGEND

-  Existing Roadway
-  Proposed Roadway
-  PM (SAT)

Proposed Self-Storage
Traffic Impact Study
3724-99-001T
6/21/2021

Figure 3

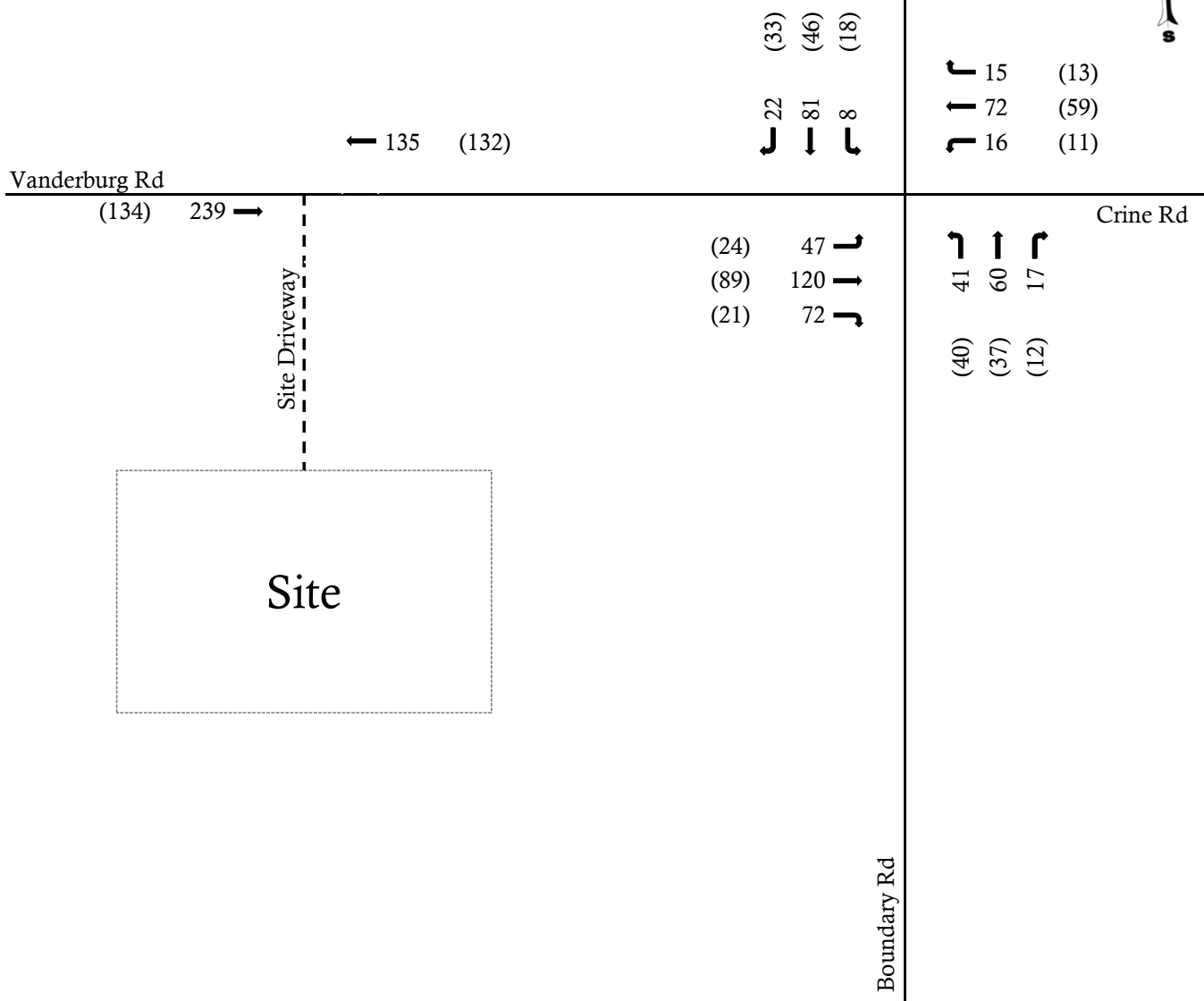
Adjacent Development Traffic Volumes
[Marlboro Green]

← 3 (3)




← 3 (3)

(3) 2 →

(3) 2 →



LEGEND

-  Existing Roadway
-  Proposed Roadway
-  PM (SAT)

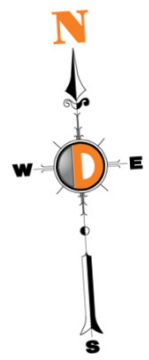


Proposed Self-Storage
 Traffic Impact Study
 3724-99-001T
 6/21/2021

Figure 4

No Build Traffic Volumes





Vanderburg Rd

↩ 3 (7)

(10)

4 ↩

↩ 5

↩ 3

↩ (6)

↩ (5)

↩ (1)

↩ (3)

↩ (1)

↩ 0

↩ 3

↩ (1)

↩ 0

↩ 3

↩ (5)

↩ (1)

↩ 0

↩ 3

↩ (5)

↩ (1)

↩ 0

↩ 3

↩ (5)

↩ (1)

↩ 0

↩ 3

↩ (5)

↩ (1)

↩ 0

↩ 3

↩ (5)

↩ (1)

↩ 0

↩ 3

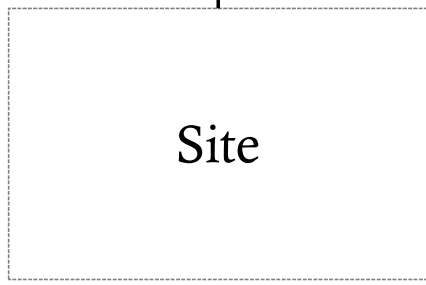
↩ (5)

↩ (1)

↩ 0

↩ 3

↩ (5)



Site

Site Driveway

Boundary Rd

Crine Rd

LEGEND

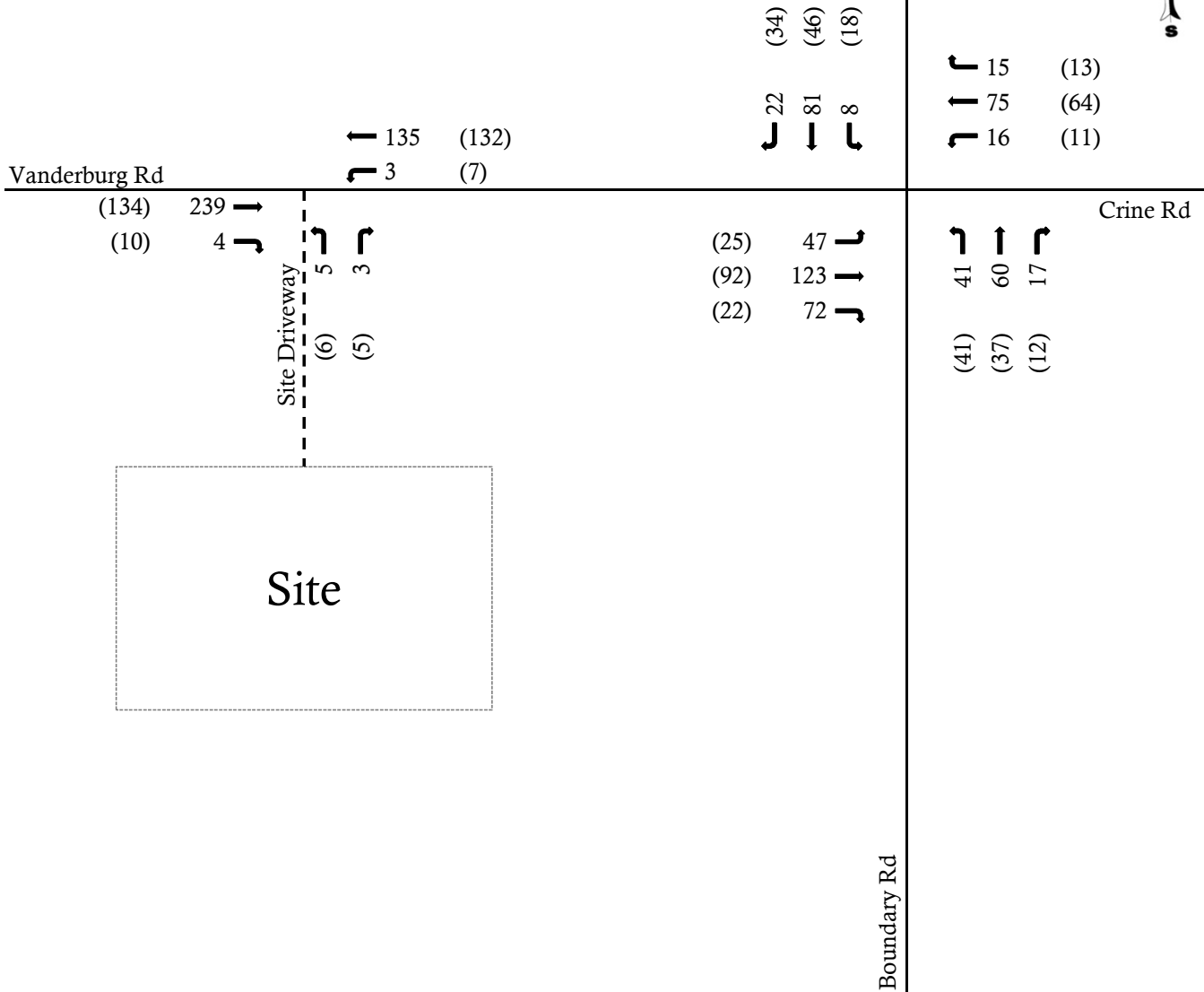
- Existing Roadway
- - - Proposed Roadway
- ← PM (SAT)



Proposed Self-Storage
 Traffic Impact Study
 3724-99-001T
 6/21/2021

Figure 6

Site Generated Trips



LEGEND




-  Existing Roadway
-  Proposed Roadway
-  PM (SAT)



Figure 7

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: Vanderburg Rd/Crine Rd
 N/S: Boundary Rd
 Town/County: Marlboro/Monmouth
 Job #: 3724-99-001T

File Name : Vanderburg Rd-Crine Rd & Boundary Rd - PM
 Site Code : 00000000
 Start Date : 6/10/2021
 Page No : 1

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

Start Time	Vanderburg Road Eastbound					Crine Road Westbound					Boundary Road Northbound					Boundary Road Southbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
04:30 PM	12	30	21	0	63	2	15	4	0	21	6	9	5	0	20	2	21	5	0	28	132
04:45 PM	11	17	14	0	42	2	18	4	0	24	13	12	3	0	28	1	24	6	0	31	125
Total	23	47	35	0	105	4	33	8	0	45	19	21	8	0	48	3	45	11	0	59	257
05:00 PM	12	43	22	0	77	7	19	4	0	30	8	11	2	0	21	2	20	2	0	24	152
05:15 PM	10	22	12	0	44	4	14	2	0	20	12	25	6	0	43	3	12	8	0	23	130
05:30 PM	10	29	16	0	55	2	16	3	0	21	11	14	3	0	28	4	16	0	0	20	124
05:45 PM	7	21	12	0	40	4	12	5	0	21	20	11	0	0	31	3	14	4	0	21	113
Total	39	115	62	0	216	17	61	14	0	92	51	61	11	0	123	12	62	14	0	88	519
06:00 PM	5	18	11	0	34	3	13	1	0	17	9	10	3	0	22	4	10	10	0	24	97
06:15 PM	8	20	7	0	35	3	18	2	0	23	9	11	4	0	24	3	14	10	0	27	109
Grand Total	75	200	115	0	390	27	125	25	0	177	88	103	26	0	217	22	131	45	0	198	982
Apprch %	19.2	51.3	29.5	0		15.3	70.6	14.1	0		40.6	47.5	12	0		11.1	66.2	22.7	0		
Total %	7.6	20.4	11.7	0	39.7	2.7	12.7	2.5	0	18	9	10.5	2.6	0	22.1	2.2	13.3	4.6	0	20.2	
Cars	74	198	111	0	383	27	124	25	0	176	84	103	26	0	213	21	129	45	0	195	967
% Cars	98.7	99	96.5	0	98.2	100	99.2	100	0	99.4	95.5	100	100	0	98.2	95.5	98.5	100	0	98.5	98.5
Trucks (SU)	1	1	1	0	3	0	0	0	0	0	2	0	0	0	2	1	2	0	0	3	8
% Trucks (SU)	1.3	0.5	0.9	0	0.8	0	0	0	0	0	2.3	0	0	0	0.9	4.5	1.5	0	0	1.5	0.8
Trucks (TT)	0	1	3	0	4	0	1	0	0	1	2	0	0	0	2	0	0	0	0	0	7
% Trucks (TT)	0	0.5	2.6	0	1	0	0.8	0	0	0.6	2.3	0	0	0	0.9	0	0	0	0	0	0.7

Start Time	Vanderburg Road Eastbound					Crine Road Westbound					Boundary Road Northbound					Boundary Road Southbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	12	30	21	0	63	2	15	4	0	21	6	9	5	0	20	2	21	5	0	28	132
04:45 PM	11	17	14	0	42	2	18	4	0	24	13	12	3	0	28	1	24	6	0	31	125
05:00 PM	12	43	22	0	77	7	19	4	0	30	8	11	2	0	21	2	20	2	0	24	152
05:15 PM	10	22	12	0	44	4	14	2	0	20	12	25	6	0	43	3	12	8	0	23	130
Total Volume	45	112	69	0	226	15	66	14	0	95	39	57	16	0	112	8	77	21	0	106	539
% App. Total	19.9	49.6	30.5	0		15.8	69.5	14.7	0		34.8	50.9	14.3	0		7.5	72.6	19.8	0		
PHF	.938	.651	.784	.000	.734	.536	.868	.875	.000	.792	.750	.570	.667	.000	.651	.667	.802	.656	.000	.855	.887
Cars	45	112	66	0	223	15	65	14	0	94	36	57	16	0	109	7	77	21	0	105	531
% Cars	100	100	95.7	0	98.7	100	98.5	100	0	98.9	92.3	100	100	0	97.3	87.5	100	100	0	99.1	98.5
Trucks (SU)	0	0	1	0	1	0	0	0	0	0	1	0	0	0	1	1	0	0	0	1	3
% Trucks (SU)	0	0	1.4	0	0.4	0	0	0	0	0	2.6	0	0	0	0.9	12.5	0	0	0	0.9	0.6
Trucks (TT)	0	0	2	0	2	0	1	0	0	1	2	0	0	0	2	0	0	0	0	0	5
% Trucks (TT)	0	0	2.9	0	0.9	0	1.5	0	0	1.1	5.1	0	0	0	1.8	0	0	0	0	0	0.9

Dynamic Traffic, LLC

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

E/W: Vanderburg Rd/Crine Rd
 N/S: Boundary Rd
 Town/County: Marlboro/Monmouth
 Job #: 3724-99-001T

File Name : Vanderburg Rd-Crine Rd & Boundary Rd - SAT
 Site Code : 00000000
 Start Date : 6/12/2021
 Page No : 1

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

Start Time	Vanderburg Road Eastbound					Crine Road Westbound					Boundary Road Northbound					Boundary Road Southbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
11:00 AM	4	13	5	0	22	5	22	4	0	31	4	7	5	0	16	1	10	8	0	19	88
11:15 AM	9	13	3	0	25	3	22	0	0	25	4	10	3	0	17	0	7	6	0	13	80
11:30 AM	5	15	5	0	25	4	15	4	0	23	6	5	3	0	14	3	6	4	0	13	75
11:45 AM	2	13	6	0	21	5	18	8	0	31	6	10	0	0	16	3	10	7	0	20	88
Total	20	54	19	0	93	17	77	16	0	110	20	32	11	0	63	7	33	25	0	65	331
12:00 PM	5	23	6	0	34	3	11	3	0	17	7	7	2	0	16	3	8	6	0	17	84
12:15 PM	2	11	3	0	16	3	19	3	0	25	6	13	6	0	25	1	12	2	0	15	81
12:30 PM	3	19	3	0	25	2	12	0	0	14	12	8	2	0	22	2	12	4	0	18	79
12:45 PM	5	17	2	0	24	4	13	1	0	18	9	7	2	0	18	2	9	6	0	17	77
Total	15	70	14	0	99	12	55	7	0	74	34	35	12	0	81	8	41	18	0	67	321
01:00 PM	6	21	10	0	37	1	11	5	0	17	5	10	2	0	17	4	10	7	0	21	92
01:15 PM	6	21	3	0	30	1	17	2	0	20	8	7	4	0	19	5	8	8	0	21	90
01:30 PM	4	16	3	0	23	3	8	3	0	14	13	8	2	0	23	5	13	7	0	25	85
01:45 PM	4	15	13	0	32	3	9	0	0	12	4	7	1	0	12	3	5	1	0	9	65
Total	20	73	29	0	122	8	45	10	0	63	30	32	9	0	71	17	36	23	0	76	332
Grand Total	55	197	62	0	314	37	177	33	0	247	84	99	32	0	215	32	110	66	0	208	984
Apprch %	17.5	62.7	19.7	0		15	71.7	13.4	0		39.1	46	14.9	0		15.4	52.9	31.7	0		
Total %	5.6	20	6.3	0	31.9	3.8	18	3.4	0	25.1	8.5	10.1	3.3	0	21.8	3.3	11.2	6.7	0	21.1	
Cars	54	197	62	0	313	36	176	32	0	244	83	95	31	0	209	32	109	65	0	206	972
% Cars	98.2	100	100	0	99.7	97.3	99.4	97	0	98.8	98.8	96	96.9	0	97.2	100	99.1	98.5	0	99	98.8
Trucks (SU)	1	0	0	0	1	1	1	1	0	3	1	4	1	0	6	0	1	1	0	2	12
% Trucks (SU)	1.8	0	0	0	0.3	2.7	0.6	3	0	1.2	1.2	4	3.1	0	2.8	0	0.9	1.5	0	1	1.2
Trucks (TT)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Trucks (TT)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Start Time	Vanderburg Road Eastbound					Crine Road Westbound					Boundary Road Northbound					Boundary Road Southbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:45 PM																					
12:45 PM	5	17	2	0	24	4	13	1	0	18	9	7	2	0	18	2	9	6	0	17	77
01:00 PM	6	21	10	0	37	1	11	5	0	17	5	10	2	0	17	4	10	7	0	21	92
01:15 PM	6	21	3	0	30	1	17	2	0	20	8	7	4	0	19	5	8	8	0	21	90
01:30 PM	4	16	3	0	23	3	8	3	0	14	13	8	2	0	23	5	13	7	0	25	85
Total Volume	21	75	18	0	114	9	49	11	0	69	35	32	10	0	77	16	40	28	0	84	344
% App. Total	18.4	65.8	15.8	0		13	71	15.9	0		45.5	41.6	13	0		19	47.6	33.3	0		
PHF	.875	.893	.450	.000	.770	.563	.721	.550	.000	.863	.673	.800	.625	.000	.837	.800	.769	.875	.000	.840	.935
Cars	21	75	18	0	114	9	48	11	0	68	34	31	10	0	75	16	40	28	0	84	341
% Cars	100	100	100	0	100	100	98.0	100	0	98.6	97.1	96.9	100	0	97.4	100	100	100	0	100	99.1
Trucks (SU)	0	0	0	0	0	0	1	0	0	1	1	1	0	0	2	0	0	0	0	0	3
% Trucks (SU)	0	0	0	0	0	0	2.0	0	0	1.4	2.9	3.1	0	0	2.6	0	0	0	0	0	0.9
Trucks (TT)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Trucks (TT)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Dynamic Traffic, LLC

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

E/W: Amboy Rd
 N/S: Tennent Rd
 Town/County: Marlboro/Monmouth
 Job #: 3342-99-003T

File Name : Tennent Rd & Amboy Rd - AMPM
 Site Code : 00000000
 Start Date : 4/20/2021
 Page No : 1

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

Start Time	Amboy Road Eastbound					Tennent Road Northbound					Tennent Road Southbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
07:00 AM	3	0	17	0	20	19	64	0	0	83	0	63	1	0	64	167
07:15 AM	4	0	15	1	20	24	89	0	0	113	0	87	3	0	90	223
07:30 AM	3	0	21	0	24	18	88	0	0	106	0	103	2	0	105	235
07:45 AM	2	0	21	0	23	25	76	0	0	101	0	109	4	0	113	237
Total	12	0	74	1	87	86	317	0	0	403	0	362	10	0	372	862
08:00 AM	6	0	39	0	45	24	94	0	0	118	0	101	6	0	107	270
08:15 AM	3	0	43	0	46	38	108	0	0	146	0	122	4	0	126	318
08:30 AM	6	0	42	0	48	53	111	0	0	164	0	95	6	0	101	313
08:45 AM	9	0	51	0	60	34	101	0	0	135	0	111	14	0	125	320
Total	24	0	175	0	199	149	414	0	0	563	0	429	30	0	459	1221
*** BREAK ***																
04:30 PM	10	0	33	0	43	31	119	0	0	150	0	118	4	0	122	315
04:45 PM	7	0	37	0	44	51	122	0	0	173	0	122	14	0	136	353
Total	17	0	70	0	87	82	241	0	0	323	0	240	18	0	258	668
05:00 PM	7	0	50	0	57	42	136	0	0	178	0	119	3	0	122	357
05:15 PM	11	0	47	0	58	49	168	0	0	217	0	126	12	0	138	413
05:30 PM	11	0	49	0	60	50	161	0	0	211	0	126	15	0	141	412
05:45 PM	13	0	32	0	45	45	157	0	0	202	0	91	16	0	107	354
Total	42	0	178	0	220	186	622	0	0	808	0	462	46	0	508	1536
06:00 PM	3	0	55	0	58	33	144	0	0	177	0	134	8	0	142	377
06:15 PM	3	0	54	0	57	18	75	0	0	93	0	104	6	0	110	260
Grand Total	101	0	606	1	708	554	1813	0	0	2367	0	1731	118	0	1849	4924
Apprch %	14.3	0	85.6	0.1		23.4	76.6	0	0		0	93.6	6.4	0		
Total %	2.1	0	12.3	0	14.4	11.3	36.8	0	0	48.1	0	35.2	2.4	0	37.6	
Cars	94	0	573	1	668	499	1759	0	0	2258	0	1674	112	0	1786	4712
% Cars	93.1	0	94.6	100	94.4	90.1	97	0	0	95.4	0	96.7	94.9	0	96.6	95.7
Trucks (SU)	7	0	32	0	39	52	48	0	0	100	0	54	6	0	60	199
% Trucks (SU)	6.9	0	5.3	0	5.5	9.4	2.6	0	0	4.2	0	3.1	5.1	0	3.2	4
Trucks (TT)	0	0	1	0	1	3	6	0	0	9	0	3	0	0	3	13
% Trucks (TT)	0	0	0.2	0	0.1	0.5	0.3	0	0	0.4	0	0.2	0	0	0.2	0.3

Dynamic Traffic, LLC

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

E/W: Amboy Rd
 N/S: Tennent Rd
 Town/County: Marlboro/Monmouth
 Job #: 3342-99-003T

File Name : Tennent Rd & Amboy Rd - AMPM
 Site Code : 00000000
 Start Date : 4/20/2021
 Page No : 2

Start Time	Amboy Road Eastbound					Tennent Road Northbound					Tennent Road Southbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																
Peak Hour for Entire Intersection Begins at 08:00 AM																
08:00 AM	6	0	39	0	45	24	94	0	0	118	0	101	6	0	107	270
08:15 AM	3	0	43	0	46	38	108	0	0	146	0	122	4	0	126	318
08:30 AM	6	0	42	0	48	53	111	0	0	164	0	95	6	0	101	313
08:45 AM	9	0	51	0	60	34	101	0	0	135	0	111	14	0	125	320
Total Volume	24	0	175	0	199	149	414	0	0	563	0	429	30	0	459	1221
% App. Total	12.1	0	87.9	0		26.5	73.5	0	0		0	93.5	6.5	0		
PHF	.667	.000	.858	.000	.829	.703	.932	.000	.000	.858	.000	.879	.536	.000	.911	.954
Cars	21	0	153	0	174	117	397	0	0	514	0	407	27	0	434	1122
% Cars	87.5	0	87.4	0	87.4	78.5	95.9	0	0	91.3	0	94.9	90.0	0	94.6	91.9
Trucks (SU)	3	0	21	0	24	32	17	0	0	49	0	22	3	0	25	98
% Trucks (SU)	12.5	0	12.0	0	12.1	21.5	4.1	0	0	8.7	0	5.1	10.0	0	5.4	8.0
Trucks (TT)	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1
% Trucks (TT)	0	0	0.6	0	0.5	0	0	0	0	0	0	0	0	0	0	0.1
Peak Hour Analysis From 12:00 PM to 06:15 PM - Peak 1 of 1																
Peak Hour for Entire Intersection Begins at 05:15 PM																
05:15 PM	11	0	47	0	58	49	168	0	0	217	0	126	12	0	138	413
05:30 PM	11	0	49	0	60	50	161	0	0	211	0	126	15	0	141	412
05:45 PM	13	0	32	0	45	45	157	0	0	202	0	91	16	0	107	354
06:00 PM	3	0	55	0	58	33	144	0	0	177	0	134	8	0	142	377
Total Volume	38	0	183	0	221	177	630	0	0	807	0	477	51	0	528	1556
% App. Total	17.2	0	82.8	0		21.9	78.1	0	0		0	90.3	9.7	0		
PHF	.731	.000	.832	.000	.921	.885	.938	.000	.000	.930	.000	.890	.797	.000	.930	.942
Cars	37	0	182	0	219	174	626	0	0	800	0	474	49	0	523	1542
% Cars	97.4	0	99.5	0	99.1	98.3	99.4	0	0	99.1	0	99.4	96.1	0	99.1	99.1
Trucks (SU)	1	0	1	0	2	2	2	0	0	4	0	3	2	0	5	11
% Trucks (SU)	2.6	0	0.5	0	0.9	1.1	0.3	0	0	0.5	0	0.6	3.9	0	0.9	0.7
Trucks (TT)	0	0	0	0	0	1	2	0	0	3	0	0	0	0	0	3
% Trucks (TT)	0	0	0	0	0	0.6	0.3	0	0	0.4	0	0	0	0	0	0.2

New Jersey Department of Transportation

Short-term Hourly Traffic Volume for 06/25/2018 to 06/28/2018

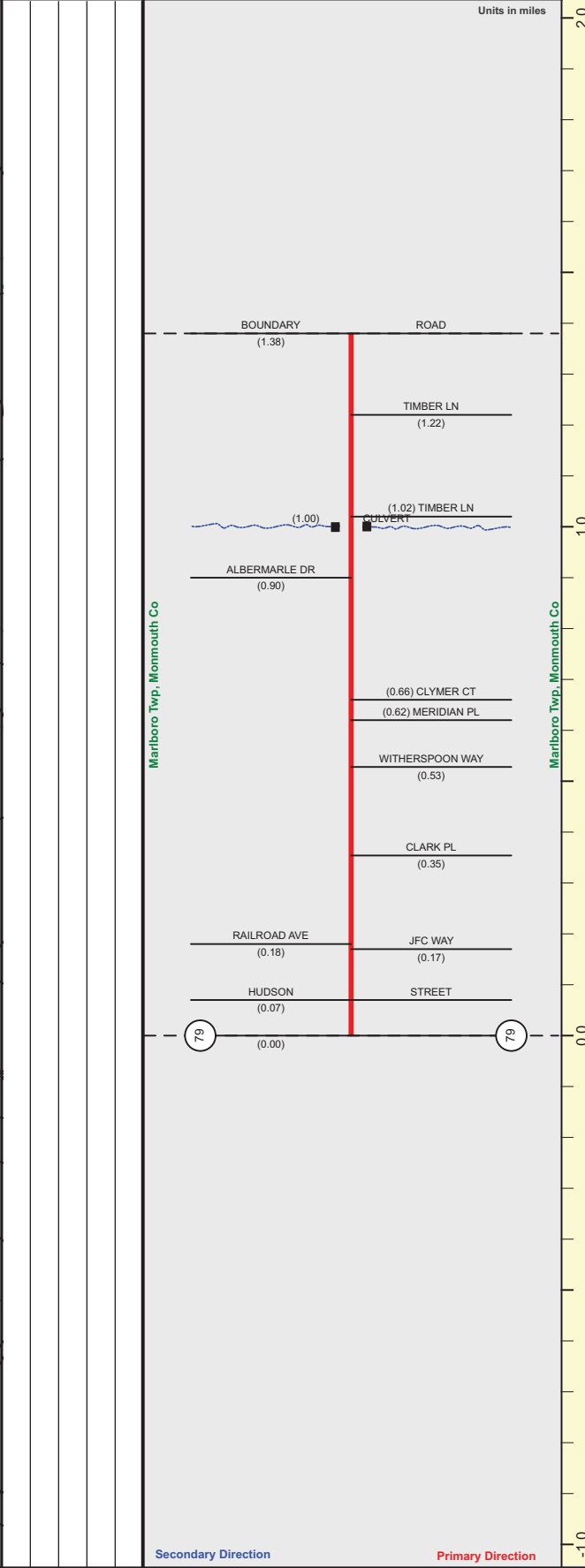
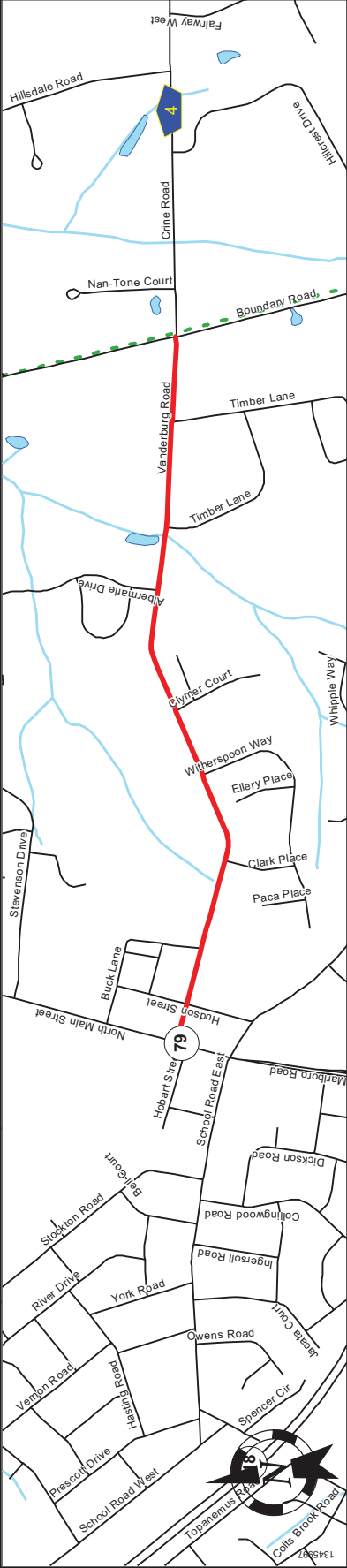
Site names: 121304,Tennent Road-6.79,13000003__
 County: MONMOUTH
 Funct Class: Urban Minor Arterial
 Location: BET AMBOY RD CRINER RD

Seasonal Factor Grp: rg3_4U
 Daily Factor Grp: rg3_4U
 Axle Factor Grp: rg3_4U
 Growth Factor Grp: rg3_4U

	Sun, Jun 24, 2018		Mon, Jun 25, 2018		Tue, Jun 26, 2018		Wed, Jun 27, 2018		Thu, Jun 28, 2018		Fri, Jun 29, 2018		Sat, Jun 30, 2018			
	Road	N	S	Road	N	S	Road	N	S	Road	N	S	Road	N	S	
00:00																
01:00					29	16	13	51	30	21	127	74	53			
02:00					35	19	16	85	39	46	40	21	19			
03:00					20	14	6	44	24	20	56	30	26			
04:00					20	10	10	21	11	10	24	15	9			
05:00					36	21	15	16	8	8	9	5	4			
06:00					87	35	52	59	32	27	34	16	18			
07:00					250	99	151	156	64	92	80	31	49			
08:00					632	273	359	438	174	264	230	95	135			
09:00					896	368	528	719	280	439	508	201	307			
10:00					892	387	505	952	401	551						
11:00					730	346	384	768	322	446						
12:00					736	353	383	677	309	368						
13:00					812	386	426	418	754	363	391					
14:00					808	391	417	416	773	385	388					
15:00					746	384	382	420	759	385	374					
16:00					802	399	403	415	840	414	426					
17:00					914	468	446	451	844	415	429					
18:00					1,031	518	513	460	961	483	478					
19:00					902	479	423	468	1,057	581	476					
20:00					774	425	349	447	861	464	397					
21:00					512	291	221	679	339	344	370					
22:00					455	249	206	507	284	223	587					
23:00					286	145	141	386	236	151	454					
Total					147	82	65	186	110	76	264					
AM Peak Vol					8,189	4,217	3,972	13,199	6,501	6,698	12,897	6,254	6,643	1,108	488	620
AM Peak Fct																
AM Peak Hr																
PM Peak Vol																
PM Peak Fct																
PM Peak Hr																
Seasonal Fct																
Daily Fct																
Axle Fct																
Pulse Fct																

Mile Posts: 0.000 - 1.380

VANDERBURG RD (West to East)



Street Name	Jurisdiction	Functional Class	Federal Aid - NHS Sy	Control Section	Speed Limit	Number of Lanes	Med. Type	Med. Width	Pavement	Shoulder	Traffic Volume	Traffic Sta. ID	Structure No.	Enlarged Views
Vanderburg Road	Municipal	Urban Major Collector	STP		35	2	None	0		0	45			
Begin Vanderburg Rd MP=0.00														
End Vanderburg Rd MP=1.38														

Secondary Direction (Blue line)

Primary Direction (Red line)

Legend:

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

Units in miles

0.0 1.0 2.0

Date last inventoried: July 2011

SRI = 13281099

Appendix C
Capacity Analysis

Intersection												
Int Delay, s/veh	6.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	45	112	69	15	66	14	39	57	16	8	77	21
Future Vol, veh/h	45	112	69	15	66	14	39	57	16	8	77	21
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	4	-	-	-2	-	-	6	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	0	0	3	0	2	0	8	0	0	13	0	0
Mvmt Flow	51	126	78	17	74	16	44	64	18	9	87	24

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	90	0	0	204	0	0	439	391	165	424	422	82
Stage 1	-	-	-	-	-	-	267	267	-	116	116	-
Stage 2	-	-	-	-	-	-	172	124	-	308	306	-
Critical Hdwy	4.1	-	-	4.1	-	-	6.78	6.1	6	8.43	7.7	6.8
Critical Hdwy Stg 1	-	-	-	-	-	-	5.78	5.1	-	7.43	6.7	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.78	5.1	-	7.43	6.7	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.572	4	3.3	3.617	4	3.3
Pot Cap-1 Maneuver	1518	-	-	1380	-	-	544	572	893	453	457	970
Stage 1	-	-	-	-	-	-	747	713	-	830	773	-
Stage 2	-	-	-	-	-	-	832	808	-	613	601	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1518	-	-	1380	-	-	432	543	893	389	434	970
Mov Cap-2 Maneuver	-	-	-	-	-	-	432	543	-	389	434	-
Stage 1	-	-	-	-	-	-	719	686	-	798	763	-
Stage 2	-	-	-	-	-	-	710	797	-	524	578	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.5			1.2			14			14.9		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	525	1518	-	-	1380	-	-	483
HCM Lane V/C Ratio	0.24	0.033	-	-	0.012	-	-	0.247
HCM Control Delay (s)	14	7.5	0	-	7.6	0	-	14.9
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.9	0.1	-	-	0	-	-	1

Intersection												
Int Delay, s/veh	5.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	23	82	20	10	53	12	38	35	11	17	44	31
Future Vol, veh/h	23	82	20	10	53	12	38	35	11	17	44	31
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	4	-	-	-2	-	-	6	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	2	0	3	3	0	0	0	0
Mvmt Flow	24	87	21	11	56	13	40	37	12	18	47	33

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	69	0	0	108	0	0	271	237	98	255	241	63
Stage 1	-	-	-	-	-	-	146	146	-	85	85	-
Stage 2	-	-	-	-	-	-	125	91	-	170	156	-
Critical Hdwy	4.1	-	-	4.1	-	-	6.73	6.13	6	8.3	7.7	6.8
Critical Hdwy Stg 1	-	-	-	-	-	-	5.73	5.13	-	7.3	6.7	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.73	5.13	-	7.3	6.7	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.527	4.027	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1545	-	-	1495	-	-	700	680	969	645	613	997
Stage 1	-	-	-	-	-	-	868	787	-	902	805	-
Stage 2	-	-	-	-	-	-	889	826	-	791	733	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1545	-	-	1495	-	-	624	663	969	599	598	997
Mov Cap-2 Maneuver	-	-	-	-	-	-	624	663	-	599	598	-
Stage 1	-	-	-	-	-	-	853	774	-	887	799	-
Stage 2	-	-	-	-	-	-	803	819	-	731	721	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.4			1			11.2			11.1		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	672	1545	-	-	1495	-	-	691
HCM Lane V/C Ratio	0.133	0.016	-	-	0.007	-	-	0.142
HCM Control Delay (s)	11.2	7.4	0	-	7.4	0	-	11.1
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.5	0	-	-	0	-	-	0.5

Intersection												
Int Delay, s/veh	6.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	47	120	72	16	72	15	41	60	17	8	81	22
Future Vol, veh/h	47	120	72	16	72	15	41	60	17	8	81	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	4	-	-	-2	-	-	6	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	0	0	3	0	2	0	8	0	0	13	0	0
Mvmt Flow	53	135	81	18	81	17	46	67	19	9	91	25

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	98	0	0	216	0	0	466	416	176	451	448	90
Stage 1	-	-	-	-	-	-	282	282	-	126	126	-
Stage 2	-	-	-	-	-	-	184	134	-	325	322	-
Critical Hdwy	4.1	-	-	4.1	-	-	6.78	6.1	6	8.43	7.7	6.8
Critical Hdwy Stg 1	-	-	-	-	-	-	5.78	5.1	-	7.43	6.7	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.78	5.1	-	7.43	6.7	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.572	4	3.3	3.617	4	3.3
Pot Cap-1 Maneuver	1508	-	-	1366	-	-	523	555	881	431	438	959
Stage 1	-	-	-	-	-	-	735	703	-	817	763	-
Stage 2	-	-	-	-	-	-	821	801	-	597	588	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1508	-	-	1366	-	-	407	526	881	365	415	959
Mov Cap-2 Maneuver	-	-	-	-	-	-	407	526	-	365	415	-
Stage 1	-	-	-	-	-	-	706	675	-	784	752	-
Stage 2	-	-	-	-	-	-	693	790	-	505	564	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.5			1.2			14.7			15.6		
HCM LOS							B			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	504	1508	-	-	1366	-	-	462
HCM Lane V/C Ratio	0.263	0.035	-	-	0.013	-	-	0.27
HCM Control Delay (s)	14.7	7.5	0	-	7.7	0	-	15.6
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	1	0.1	-	-	0	-	-	1.1

Intersection												
Int Delay, s/veh	5.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	24	89	21	11	59	13	40	37	12	18	46	33
Future Vol, veh/h	24	89	21	11	59	13	40	37	12	18	46	33
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	4	-	-	-2	-	-	6	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	2	0	3	3	0	0	0	0
Mvmt Flow	26	95	22	12	63	14	43	39	13	19	49	35

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	77	0	0	117	0	0	294	259	106	278	263	70
Stage 1	-	-	-	-	-	-	158	158	-	94	94	-
Stage 2	-	-	-	-	-	-	136	101	-	184	169	-
Critical Hdwy	4.1	-	-	4.1	-	-	6.73	6.13	6	8.3	7.7	6.8
Critical Hdwy Stg 1	-	-	-	-	-	-	5.73	5.13	-	7.3	6.7	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.73	5.13	-	7.3	6.7	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.527	4.027	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1535	-	-	1484	-	-	678	662	959	618	591	987
Stage 1	-	-	-	-	-	-	857	779	-	890	796	-
Stage 2	-	-	-	-	-	-	878	819	-	774	721	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1535	-	-	1484	-	-	599	645	959	570	576	987
Mov Cap-2 Maneuver	-	-	-	-	-	-	599	645	-	570	576	-
Stage 1	-	-	-	-	-	-	842	765	-	874	790	-
Stage 2	-	-	-	-	-	-	788	812	-	711	708	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.3	1	11.5	11.3
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	651	1535	-	-	1484	-	-	670
HCM Lane V/C Ratio	0.145	0.017	-	-	0.008	-	-	0.154
HCM Control Delay (s)	11.5	7.4	0	-	7.4	0	-	11.3
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.5	0.1	-	-	0	-	-	0.5

Intersection												
Int Delay, s/veh	6.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	47	123	72	16	75	15	41	60	17	8	81	22
Future Vol, veh/h	47	123	72	16	75	15	41	60	17	8	81	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	4	-	-	-2	-	-	6	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	0	0	3	0	2	0	8	0	0	13	0	0
Mvmt Flow	53	138	81	18	84	17	46	67	19	9	91	25

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	101	0	0	219	0	0	472	422	179	457	454	93
Stage 1	-	-	-	-	-	-	285	285	-	129	129	-
Stage 2	-	-	-	-	-	-	187	137	-	328	325	-
Critical Hdwy	4.1	-	-	4.1	-	-	6.78	6.1	6	8.43	7.7	6.8
Critical Hdwy Stg 1	-	-	-	-	-	-	5.78	5.1	-	7.43	6.7	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.78	5.1	-	7.43	6.7	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.572	4	3.3	3.617	4	3.3
Pot Cap-1 Maneuver	1504	-	-	1362	-	-	519	551	878	426	434	955
Stage 1	-	-	-	-	-	-	732	701	-	813	760	-
Stage 2	-	-	-	-	-	-	818	799	-	594	586	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1504	-	-	1362	-	-	403	521	878	360	411	955
Mov Cap-2 Maneuver	-	-	-	-	-	-	403	521	-	360	411	-
Stage 1	-	-	-	-	-	-	702	672	-	780	749	-
Stage 2	-	-	-	-	-	-	690	788	-	501	562	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.5			1.2			14.8			15.8		
HCM LOS							B			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	499	1504	-	-	1362	-	-	458
HCM Lane V/C Ratio	0.266	0.035	-	-	0.013	-	-	0.272
HCM Control Delay (s)	14.8	7.5	0	-	7.7	0	-	15.8
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	1.1	0.1	-	-	0	-	-	1.1

Intersection												
Int Delay, s/veh	5.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	25	92	22	11	64	13	41	37	12	18	46	34
Future Vol, veh/h	25	92	22	11	64	13	41	37	12	18	46	34
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	4	-	-	-2	-	-	6	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	0	2	0	3	3	0	0	0	0
Mvmt Flow	27	98	23	12	68	14	44	39	13	19	49	36
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	82	0	0	121	0	0	306	270	110	289	274	75
Stage 1	-	-	-	-	-	-	164	164	-	99	99	-
Stage 2	-	-	-	-	-	-	142	106	-	190	175	-
Critical Hdwy	4.1	-	-	4.1	-	-	6.73	6.13	6	8.3	7.7	6.8
Critical Hdwy Stg 1	-	-	-	-	-	-	5.73	5.13	-	7.3	6.7	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.73	5.13	-	7.3	6.7	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.527	4.027	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1528	-	-	1479	-	-	667	654	955	606	581	980
Stage 1	-	-	-	-	-	-	851	775	-	883	790	-
Stage 2	-	-	-	-	-	-	872	815	-	766	715	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1528	-	-	1479	-	-	587	636	955	558	565	980
Mov Cap-2 Maneuver	-	-	-	-	-	-	587	636	-	558	565	-
Stage 1	-	-	-	-	-	-	835	760	-	866	783	-
Stage 2	-	-	-	-	-	-	780	808	-	703	701	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.3			0.9			11.6			11.5		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	640	1528	-	-	1479	-	-	661				
HCM Lane V/C Ratio	0.15	0.017	-	-	0.008	-	-	0.158				
HCM Control Delay (s)	11.6	7.4	0	-	7.5	0	-	11.5				
HCM Lane LOS	B	A	A	-	A	A	-	B				
HCM 95th %tile Q(veh)	0.5	0.1	-	-	0	-	-	0.6				

Intersection

Int Delay, s/veh 0.3

Movement EBT EBR WBL WBT NBL NBRLane Configurations 

Traffic Vol, veh/h 239 4 3 135 5 3

Future Vol, veh/h 239 4 3 135 5 3

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, % 2 - - -2 0 -

Peak Hour Factor 83 83 83 83 83 83

Heavy Vehicles, % 0 2 2 4 2 2

Mvmt Flow 288 5 4 163 6 4

Major/Minor Major1 Major2 Minor1

Conflicting Flow All 0 0 293 0 462 291

Stage 1 - - - - 291 -

Stage 2 - - - - 171 -

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 - - 1269 - 558 748

Stage 1 - - - - 759 -

Stage 2 - - - - 859 -

Platoon blocked, % - - -

Mov Cap-1 Maneuver - - 1269 - 556 748

Mov Cap-2 Maneuver - - - - 556 -

Stage 1 - - - - 759 -

Stage 2 - - - - 856 -

Approach EB WB NB

HCM Control Delay, s 0 0.2 10.9

HCM LOS B

Minor Lane/Major Mvmt NBLn1 EBT EBR WBL WBT

Capacity (veh/h) 615 - - 1269 -

HCM Lane V/C Ratio 0.016 - - 0.003 -

HCM Control Delay (s) 10.9 - - 7.8 0

HCM Lane LOS B - - A A

HCM 95th %tile Q(veh) 0 - - 0 -

Intersection						
Int Delay, s/veh	0.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	134	10	7	132	6	5
Future Vol, veh/h	134	10	7	132	6	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, %	2	-	-	-2	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	2	2	2	2	2
Mvmt Flow	149	11	8	147	7	6
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	160	0	318	155
Stage 1	-	-	-	-	155	-
Stage 2	-	-	-	-	163	-
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	-	-	1419	-	675	891
Stage 1	-	-	-	-	873	-
Stage 2	-	-	-	-	866	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1419	-	671	891
Mov Cap-2 Maneuver	-	-	-	-	671	-
Stage 1	-	-	-	-	873	-
Stage 2	-	-	-	-	861	-
Approach	EB	WB	NB			
HCM Control Delay, s	0	0.4	9.8			
HCM LOS				A		
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	756	-	-	1419	-	
HCM Lane V/C Ratio	0.016	-	-	0.005	-	
HCM Control Delay (s)	9.8	-	-	7.6	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0	-	-	0	-	