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# TRAFFIC IMPACT STUDY

For

## Middlesex Borough Warehouse Project

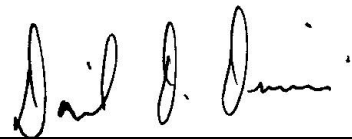
Block 353, Lots 1.01 & 1.02  
Borough of Middlesex, Middlesex County, New Jersey

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**LANGAN**

26 September 2019  
100594413

## Table of Contents

<b>EXECUTIVE SUMMARY</b> .....	<b>i</b>
<b>INTRODUCTION</b> .....	<b>1</b>
Project Description.....	1
Study Area .....	1
Scope of Study.....	3
<b>DESCRIPTION OF EXISTING CONDITIONS</b> .....	<b>4</b>
Roads.....	4
River Road (C.R. 622) .....	4
Baekeland Avenue.....	4
Intersections .....	4
River Road (C.R. 622) and Ridge Road.....	4
Traffic Volumes .....	4
<b>ESTIMATE OF FUTURE CONDITIONS</b> .....	<b>7</b>
Background Traffic Growth .....	7
No-Build Condition .....	7
Site-Generated Trips .....	7
Trip Distribution.....	11
Build Traffic Volumes .....	11
<b>ANALYSIS OF TRAFFIC OPERATIONS</b> .....	<b>14</b>
Level of Service Criteria .....	14
Capacity Analysis .....	15
<b>REVIEW OF SITE PLAN</b> .....	<b>18</b>
<b>CONCLUSIONS</b> .....	<b>19</b>

## **List of Figures**

- Figure 1 - Site Location Map
- Figure 2 - 2019 Existing Traffic Volumes
- Figure 3 - 2021 Base Traffic Volumes
- Figure 4 - Total Adjacent Development Traffic Volumes
- Figure 5 - 2021 No-Build Traffic Volumes
- Figure 6 - Total Site-Generated Trips
- Figure 7 - 2021 Build Traffic Volumes

## **List of Tables**

- Table 1 - Trip Generation Estimates
- Table 2 - Arrival and Departure Distributions
- Table 3 - Intersection Capacity Analysis Summary

## **Appendices**

- Appendix A - Volume Worksheets
- Appendix B - Traffic Counts
- Appendix C - Capacity Printouts

## **EXECUTIVE SUMMARY**

Langan Engineering and Environmental Services, Inc. has prepared this study to assess the traffic impacts associated with construction of a 400,000 square foot (sf) warehouse, along Baekeland Avenue in the Borough of Middlesex, Middlesex County, New Jersey.

The site is located on the southeast corner at the intersection of River Road (CR 622) and Baekeland Avenue, and is bordered on the north and east by Baekeland Avenue, on the south by a neighboring industrial development, and on the west by River Road. Access to the site is proposed to be provided via multiple driveways along Baekeland Avenue and one driveway along River Road. The two westernmost driveways along Baekeland Avenue will provide access for passenger cars only and will be “stop”-controlled. The easternmost driveway along Baekeland Avenue, and the driveway along River Road, will provide access for trucks only and will be “stop”-controlled.

Langan estimated the number of new trips the proposed warehouse development would generate based on data compiled for Land Use Code 150 (Warehouse) by the Institute of Transportation Engineers (ITE) as contained in the publication Trip Generation, 10<sup>th</sup> Edition. We estimate that the proposed warehouse will generate approximately 74 total trips (48 enter, 26 exit) during the weekday morning peak hour and 83 total trips (20 enter, 63 exit) during the weekday evening peak hour.

We determined the directional distribution of the site-generated trips for the proposed warehouse development based on an examination of demographic data, existing travel patterns in the study area and a journey-to-work model.

We conducted capacity analyses at the following intersections:

- River Road (CR 622) and Ridge Road
- River Road (CR 622) and Raritan Avenue
- River Road (CR 622) and Baekeland Avenue
- River Road (CR 622) and Site Driveway 1
- Baekeland Avenue and Site Driveway 2
- Baekeland Avenue and Site Driveway 3
- Baekeland Avenue and Site Driveway 4

We expect that the proposed warehouse development will not significantly impact area traffic operations during peak hours. Based on our analyses, we determined that the adjacent roadway network has sufficient capacity to accommodate the site-generated trips associated with the proposed development. Moreover, the proposed site driveways are expected to operate acceptably during peak traffic hours.

## **INTRODUCTION**

Langan Engineering and Environmental Services, Inc. has prepared this study to assess the traffic impacts associated with construction of a 400,000 square foot (sf) warehouse, along Baekeland Avenue in the Borough of Middlesex, Middlesex County, New Jersey.

### **Project Description**

The proposed 400,000 sf warehouse is located on Block 353, Lots 1.01 and 1.02, according to the Borough of Middlesex tax maps. The site location is shown in Figure 1.

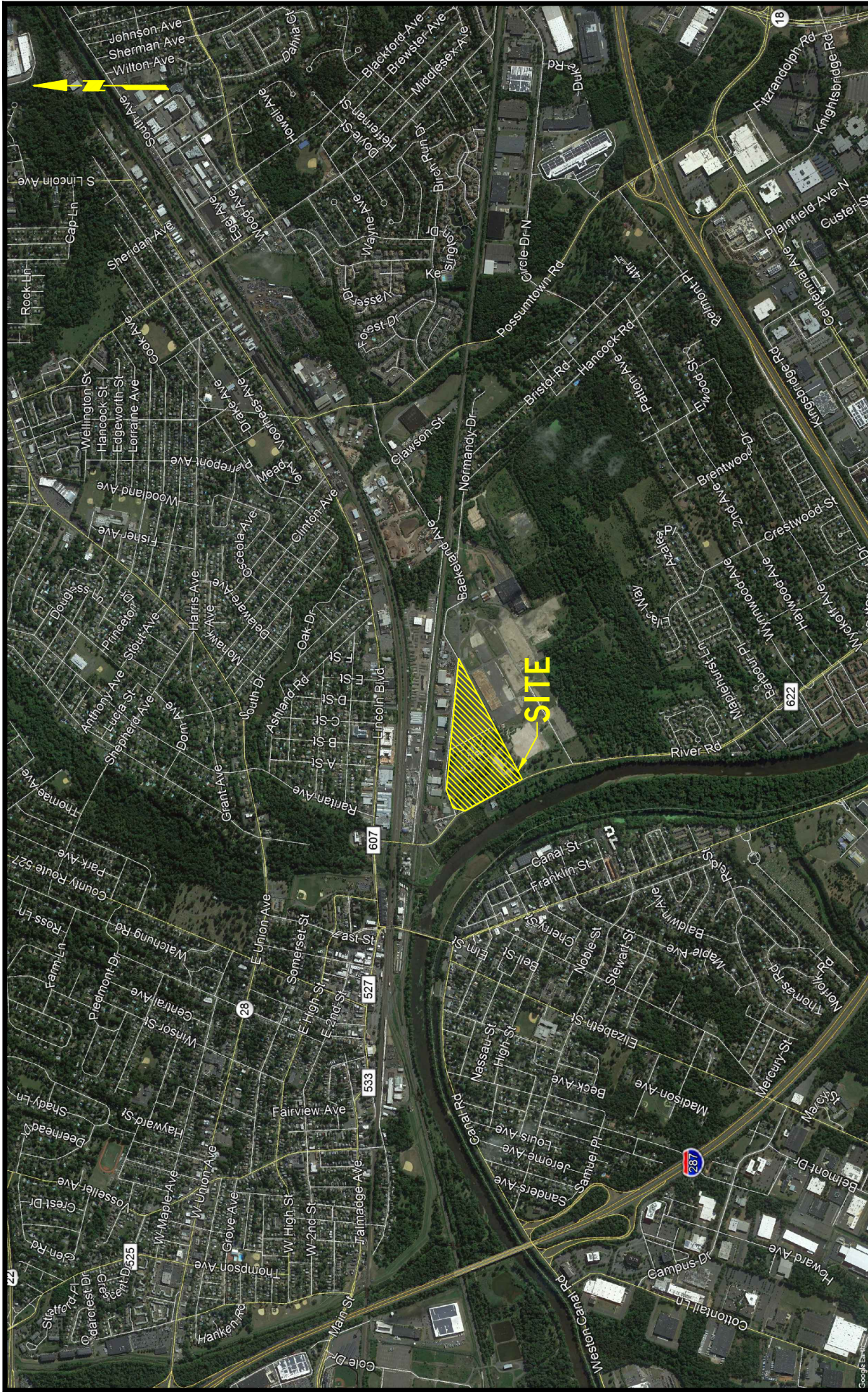
Access to the site is proposed to be provided via multiple driveways along Baekeland Avenue and one driveway along River Road. The two westernmost driveways along Baekeland Avenue will provide access for passenger cars only and will be "stop"-controlled. The easternmost driveway along Baekeland Avenue, and the driveway along River Road, will provide access for trucks only and will be "stop"-controlled.

### **Study Area**

We conducted capacity analyses at the following intersections:

- River Road (CR 622) and Ridge Road
- River Road (CR 622) and Raritan Avenue
- River Road (CR 622) and Baekeland Avenue
- River Road (CR 622) and Site Driveway 1
- Baekeland Avenue and Site Driveway 2
- Baekeland Avenue and Site Driveway 3
- Baekeland Avenue and Site Driveway 4

An inventory of the physical road conditions is presented in the section "Description of Existing Conditions."



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	<p>Project</p> <p><b>MIDDLESEX BOROUGH WAREHOUSE PROJECT</b></p> <p>BLOCK No. 353, LOT No. 1.01 AND 1.02 BLOCK No. 356, LOT No. 1 BOROUGH OF MIDDLESEX</p> <p>MIDDLESEX COUNTY NEW JERSEY</p>		<p>Drawing Title</p> <p><b>SITE LOCATION MAP</b></p>	<p>Project No. 1005944131</p> <p>Date 06/28/2019</p> <p>Scale N.T.S.</p> <p>Drawn By EJV</p> <p>Checked By N.T.S.</p> <p>Submission Date JUNE 2019</p>	<p>Drawing No. <b>FIGURE 1</b></p>

## **Scope of Study**

Langan undertook the following steps to prepare this study in accordance with standard accepted methodologies:

1. Conducted a field examination of the site and surrounding road network to inventory physical and regulatory conditions including the number of lanes, lane assignments, channelization, traffic-control devices, lateral clearances and other factors that limit traffic capacity.
2. We arranged for a series of manual turning movement traffic counts at the study intersections. We conducted counts on a typical weekday from 6 AM to 9 AM and from 3 PM to 6 PM. We then identified existing weekday morning and evening peak hour traffic volumes based on the manual traffic count data.
3. Established 2019 existing traffic volumes using the obtained turning-movement traffic counts.
4. Established 2021 Base traffic volumes by applying the New Jersey Department of Transportation (NJDOT) Middlesex County growth factor of 1.0 percent per year to the existing traffic volumes.
5. Identified other planned developments in the study area and established "2021 No-Build" traffic volumes with the other development generated trips.
6. Prepared trip generation estimates for the proposed development based on research data developed by the Institute of Transportation Engineers (ITE).
7. Developed trip distribution for the development based on census data, existing travel patterns, and demographic data.
8. Assigned site-generated trips to the site driveway and surrounding road network based on the likely travel routes motorists will use to travel to and from the site.
9. Established future 2020 Build traffic volumes by adding site-generated trips to the 2021 No-Build traffic volumes.
10. Performed intersection capacity analyses for the weekday morning and evening peak hours using Synchro Software.

## **DESCRIPTION OF EXISTING CONDITIONS**

This section describes the roads, intersections and traffic volumes in the area of the proposed warehouse development located in Middlesex Borough, Middlesex County, New Jersey.

### **Roads**

#### River Road (C.R. 622)

River Road is a north/south urban principal arterial that provides one lane for each direction of travel near the site. The posted speed limit is 35 miles per hour in the vicinity of the site. To the north of the site there is a low clearance overpass that will restrict the passage of tractor trailers in this direction.

#### Baekeland Avenue

Baekeland Avenue is an east/west urban minor arterial municipal road. This road provides one travel lane for each direction of travel near the site and has no posted speed limit.

### **Intersections**

#### River Road (C.R. 622) and Ridge Road

Ridge Road intersects River Road to form a T-shaped intersection under signal control. The westbound Ridge Road approach provides a left-turn lane and a right-turn lane. The northbound River Road approach provides a through lane and an exclusive right-turn lane. The southbound River Road approach provides an exclusive left-turn lane and a through lane.

#### River Road (CR 622) and Baekeland Avenue/Raritan Avenue

Baekeland Avenue and Raritan Avenue intersect River Road to form a four-legged intersection under "stop" control. The westbound Baekeland Avenue approach provides a shared left-turn/right-turn lane and is "stop"-controlled. The south-westbound Raritan Avenue approach provides a shared left-turn/right-turn lane and is "stop"-controlled. The northbound River Road approach provides a through lane and a channelized right-turn lane. The southbound River Road approach provides a shared left-turn/through lane. It is noted that HCM methodologies are not able to analyze the intersection with its existing geometry. For analysis purposes the two "stop"-controlled approaches were analyzed as separate T-shaped intersections with River Road.

### **Traffic Volumes**

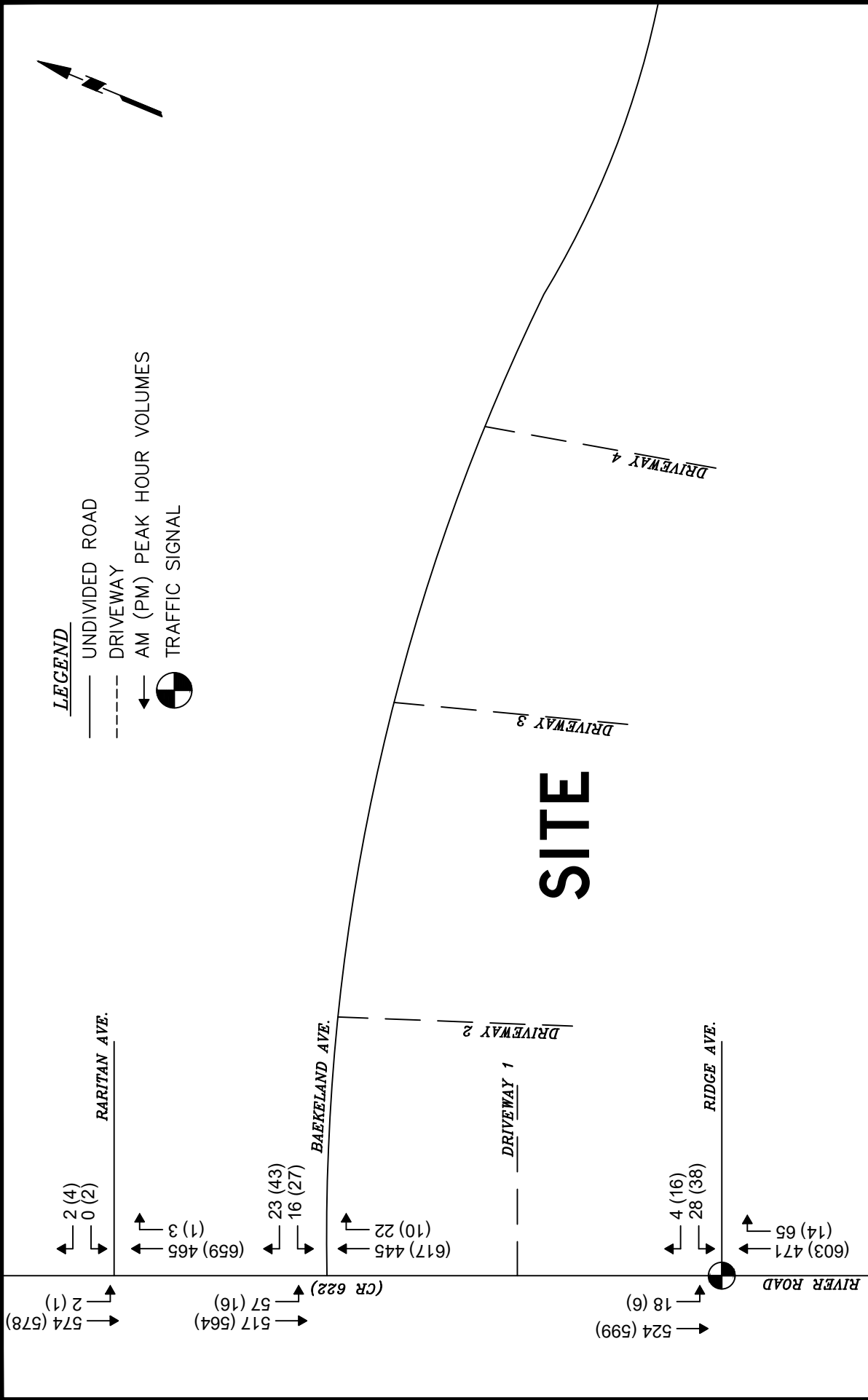
To examine traffic conditions near the site, manual turning movement traffic counts were conducted during the morning and evening peak hours on a typical weekday at the study



intersections. Specifically, manual turning movement counts were conducted on Thursday, June 20, 2019 from 6 AM to 9 AM and from 3 PM to 6 PM.

The manual traffic counts identify distinct times during the weekday morning and evening periods when traffic experienced its highest levels. According to the manual traffic count data collected, the weekday morning peak hour occurs from 7:30 AM to 8:30 AM and the weekday evening peak hour occurs from 4:45 PM to 5:45 PM.

Figure 2 illustrates the existing weekday morning and evening peak hour traffic volumes. Summaries of the manual traffic counts are contained in Appendix B.



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	Date 06/28/2019	Scale N.T.S.	Drawn By EJV
Submission Date JUNE 2019		Sheet <b>2</b> of <b>7</b>	© 2018 Langan

## **ESTIMATE OF FUTURE CONDITIONS**

This section covers background traffic growth, No-Build, site-generated trips, trip distribution, and future traffic volumes. We anticipate construction on the proposed warehouse will be complete by the end of 2021. Accordingly, we projected traffic volumes to include existing traffic and new traffic created by background growth and other approved developments in the study area over 2 years. We then projected future traffic volumes by adding traffic estimated to be generated by the completion of the proposed development.

### **Background Traffic Growth**

We increased the existing peak hour traffic volumes by a compounded annual growth rate of 1.00 percent, established by the NJDOT for Middlesex County, to derive the 2021 Base traffic, shown in Figure 3.

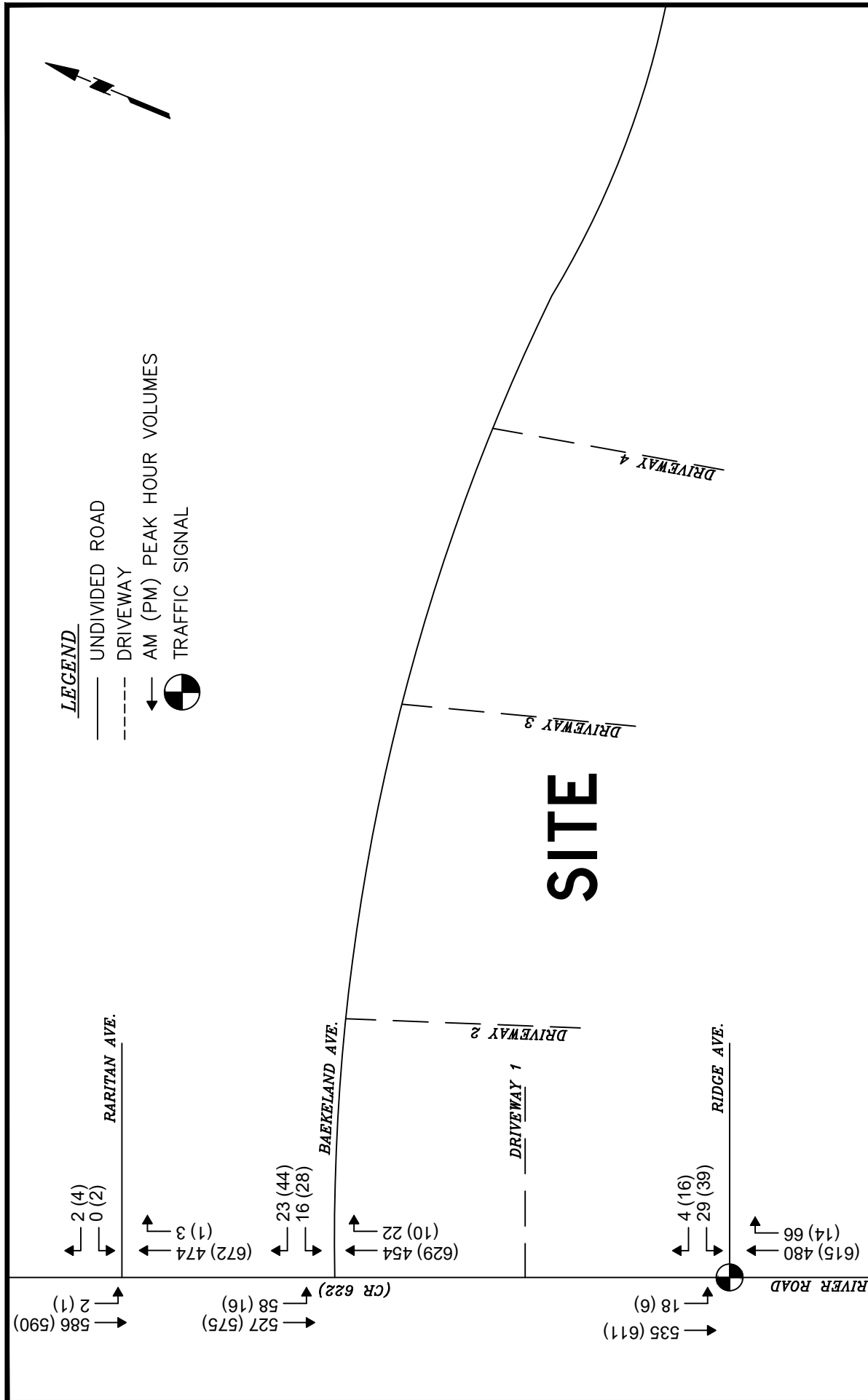
### **No-Build Condition**

In addition to general background growth, there is a prior approval for development within the site vicinity that will influence traffic on the surrounding road network. In preparing the future traffic projections, we have included the traffic associated with the unconstructed space (1,063,846 sf) of the adjacent warehouse development on the study area intersections. The approved development was considered in the No-Build condition.

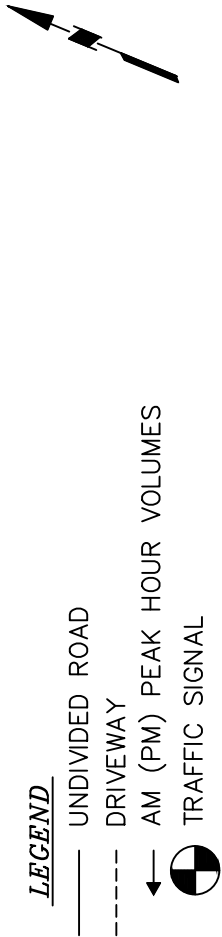
Traffic associated with this development was developed from its respective traffic study. The collective traffic from this development is shown on Figure 4. We developed the 2021 No-Build traffic volumes by adding the total adjacent development traffic to the 2021 Base traffic volumes. The 2021 No-Build traffic volumes are shown in Figure 5.

### **Site-Generated Trips**

We prepared trip generation estimates for the proposed development based on data compiled for Land Use 150 (Warehousing) by the Institute of Transportation Engineers (ITE) as contained in the publication Trip Generation, 10<sup>th</sup> Edition. For analysis purposes, we estimate that trucks will comprise 20% of the overall traffic generation. Table 1 summarizes the trip generation estimates for the weekday morning and evening peak hours.



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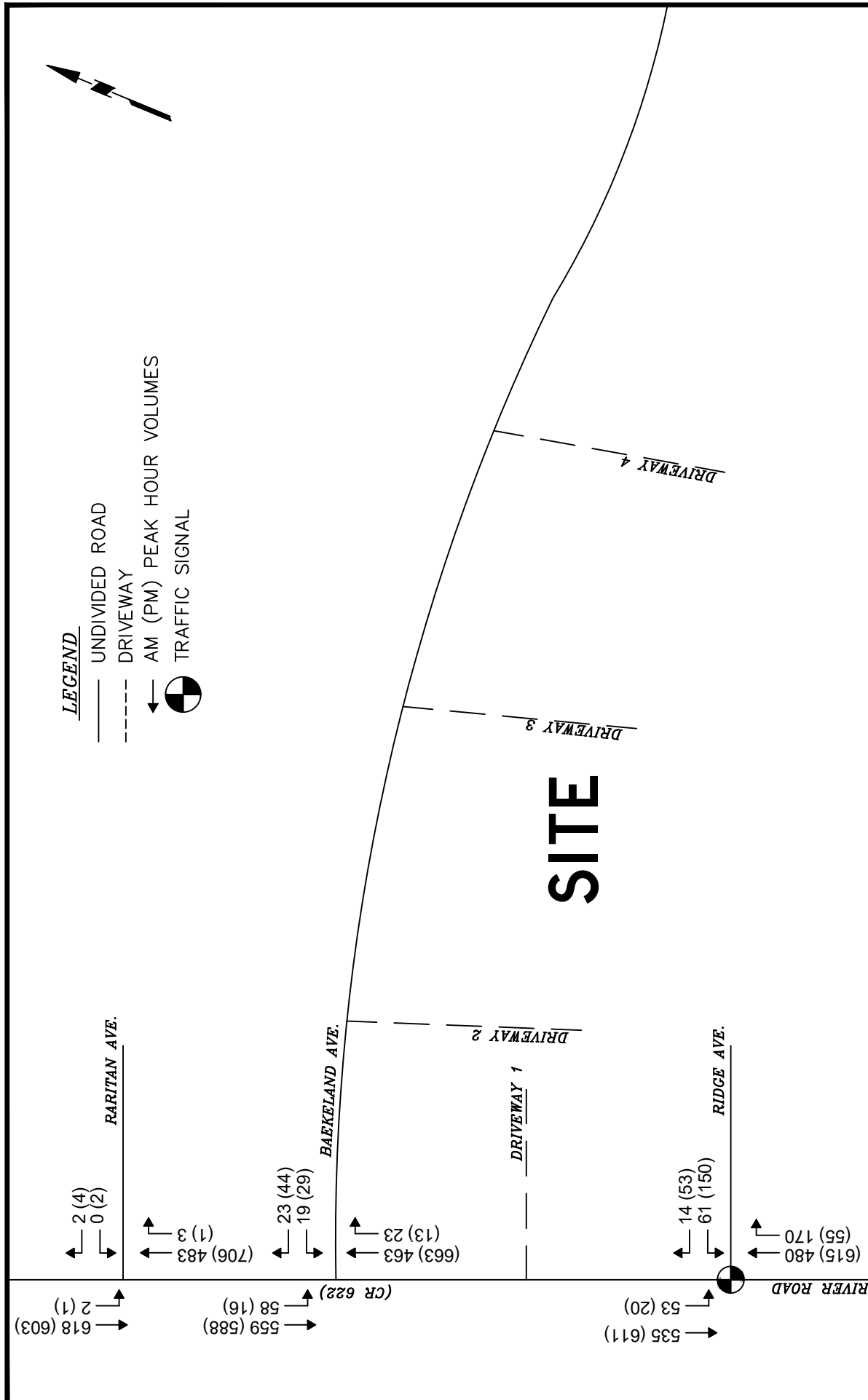


**LEGEND**

- UNDIVIDED ROAD
- - - DRIVEWAY
- ← AM (PM) PEAK HOUR VOLUMES
- ⊙ TRAFFIC SIGNAL

**SITE**

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<p>Project No. 1005944131</p>		<p>Date 06/28/2019</p>	<p>Scale N.T.S.</p>	<p>Drawn By EJV</p>
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	NJ CERTIFICATE OF AUTHORIZATION No. 24GA27966403			

**Table 1 - Trip Generation Estimates**

Use		Weekday Morning Peak Hour			Weekday Evening Peak Hour		
		Enter	Exit	Total	Enter	Exit	Total
Warehouse 400,000 SF	Passenger Cars	38	21	59	16	50	66
	Trucks	10	5	15	4	13	17
<b>Total</b>		<b>48</b>	<b>26</b>	<b>74</b>	<b>20</b>	<b>63</b>	<b>83</b>

**Trip Distribution**

We determined the directional distribution of site-generated trips based on demographic data and existing travel patterns in the study area. The directional distribution of site traffic is shown in Table 2.

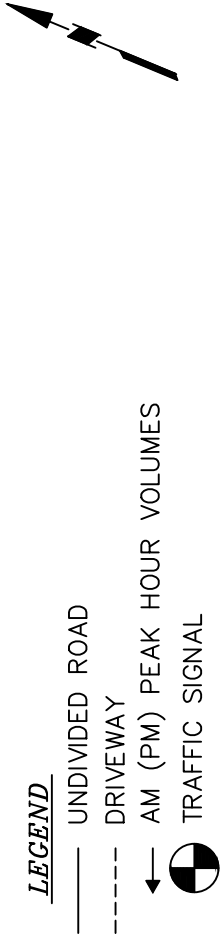
**Table 2 – Arrival and Departure Trip Distributions**

Direction (To/From)	Passenger Vehicle Arrival/Departure Distributions	Truck Arrival/Departure Distributions
River Road – CR 622 (North)	25%	-
River Road – CR 622 (South)	50%	75%
Poossumtown Road	25%	25%
<b>Total</b>	<b>100%</b>	<b>100%</b>

The site-generated trips were assigned to the roadway network based on the trip distributions in Table 2. The arrival and departure distributions for both passenger vehicles and trucks are shown in Figures contained in Appendix A. The total site-generated trips assigned to the roadway network are shown in Figure 6.

**Build Traffic Volumes**

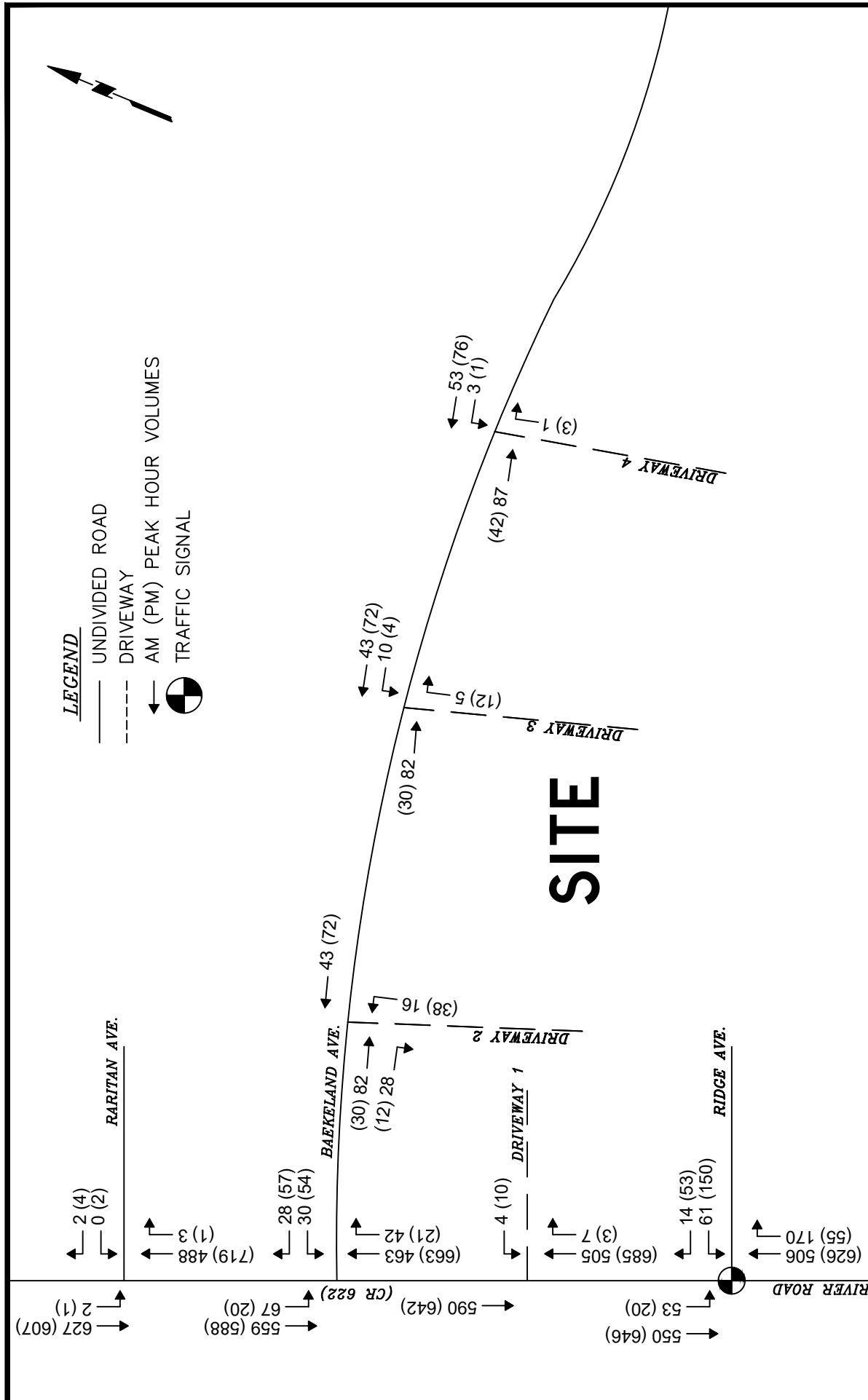
The 2021 Build traffic volumes were derived by adding the total site-generated trips to the 2021 No-Build traffic volumes. Figure 7 illustrates the 2021 Build weekday morning and evening peak hour traffic volumes.



# SITE

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	<b>Date</b> 06/28/2019	<b>Scale</b> N.T.S.	<b>Drawn By</b> EJV	<b>Checked By</b> N.T.S.
<b>Submission Date</b> JUNE 2019		<b>Sheet</b> 6 <b>of</b> 7		





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## ANALYSIS OF TRAFFIC OPERATIONS

This section describes the capacity analyses we conducted to assess traffic operations for the No-Build and Build conditions. Capacity analysis provides an indication of the adequacy of road facilities to serve traffic demand.

### Level of Service Criteria

Level of Service (LOS) is the term used to denote different operating conditions that occur on a given road segment under various traffic-volume demands. LOS is a qualitative measure that considers a number of factors including road geometry, speed, travel delay and freedom to maneuver. LOS designations range from A to F and provide an index of operational qualities of a road segment or an intersection. LOS A represents the best operating conditions; LOS F represents the worst.

LOS designations are reported differently for signalized and unsignalized intersections. For signalized intersections, the analysis considers the operation of all traffic entering the intersection. For unsignalized intersections, the analysis considers the operation of all movements that conflict with other movements, such as main-line left turns and traffic exiting a side street. The evaluation criteria used to analyze the study area intersections are based on the latest version of the Highway Capacity Manual (HCM), published by the Transportation Research Board.

The HCM defines LOS for signalized intersections as follows:

<b>LOS</b>	<b>Control Delay per Vehicle</b>
A	≤10 sec
B	>10 sec - 20 sec
C	>20 sec - 35 sec
D	>35 sec - 55 sec
E	>55 sec - 80 sec
F	>80 sec

The HCM defines LOS for unsignalized intersections as follows:

<b>LOS</b>	<b>Delay Range (sec/veh)</b>
A	0 sec - 10 sec
B	>10 sec - 15 sec
C	>15 sec - 25 sec
D	>25 sec - 35 sec
E	>35 sec - 50 sec
F	>50 sec

## Capacity Analysis

We conducted capacity analyses for the study intersections and found that the proposed warehouse development will not significantly impact area traffic operations. Table 3 summarizes the 2021 No-Build and 2021 Build levels of service at each study intersection during the weekday morning and evening peak hours. Following are discussions pertaining to each of the study intersections. Capacity analysis worksheets are contained in Appendix C.

**Table 3 – Intersection Capacity Analysis Summary**

Location	Movement	2021 No-Build Condition		2021 Build Condition		
		AM	PM	AM	PM	
<b>Signalized Intersections</b>						
River Road (CR 622) and Ridge Road	WB	L	C (31.9)	C (34.9)	C (31.9)	C (34.9)
		R	A (7.6)	A (4.8)	A (7.6)	A (4.8)
	NB	T	B (13.3)	B (18.3)	B (13.9)	B (18.7)
		R	A (0.8)	A (0.8)	A (0.8)	A (0.8)
	SB	L	A (3.6)	A (4.8)	A (3.6)	A (4.8)
		T	A (8.5)	B (11.3)	A (8.6)	B (12.1)
	<b>Overall</b>		<b>B (10.1)</b>	<b>B (15.8)</b>	<b>B (10.5)</b>	<b>B (16.2)</b>
<b>Unsignalized Intersections</b>						
River Road (CR 622) and Raritan Avenue	SB	L	A (8.4)	A (9.1)	A (8.4)	A (9.2)
	SWB	L,R	B (11.4)	C (18.6)	B (11.4)	C (18.9)
River Road (CR 622) and Baekeland Avenue	WB	L,R	C (24.1)	D (26.6)	D (26.6)	E (36.8)
	SB	L	A (8.9)	A (9.5)	A (8.9)	A (9.4)
River Road (CR 622) and Site Driveway 1	WB	L,R	-	-	D (30.2)	E (44.7)
	SB	L	-	-	A (0.0)	A (0.0)
Baekeland Avenue and Site Driveway 2	WB	L	-	-	A (0.0)	A (0.0)
	NB	L,R	-	-	A (9.3)	A (9.3)
Baekeland Avenue and Site Driveway 3	WB	L	-	-	A (7.4)	A (7.3)
	NB	L,R	-	-	A (8.7)	A (8.5)
Baekeland Avenue and Site Driveway 4	WB	L	-	-	A (8.4)	A (0.0)
	NB	L,R	-	-	A (9.8)	A (9.5)

Based on Synchro and HCM Software [\*Level of Service (Average vehicle delay (seconds per vehicle))]

### River Road (CR 622) and Ridge Road

This signalized intersection is expected to operate at an overall LOS B during both the weekday morning and evening peak hours under the No-Build condition. Under the Build condition, the intersection is expected to continue to operate at an overall LOS B during both the weekday morning peak and evening peak hours.

### River Road (CR 622) and Raritan Avenue

All movements at this unsignalized intersection are expected to operate at LOS C or better during both the weekday morning and evening peak hours under the No-Build condition. Under

the Build condition, all movements are expected to continue to operate at LOS C or better during both peak hours.

#### River Road (CR 622) and Baekeland Avenue

All movements at this unsignalized intersection are expected to operate at LOS D or better during both the weekday morning and evening peak hours under the No-Build condition. Under the Build condition, all movements are expected to operate at LOS E or better during both peak hours. The maximum (95<sup>th</sup> percentile) queue on the Baekeland Avenue approach is anticipated to be approximately one vehicle in the weekday morning peak hour and three vehicles in the weekday evening peak hour. That equates to a minimal increase of one vehicle in the queue during the weekday evening peak hour as compared to the No-Build condition. The increase between the No-Build and Build queue is minimal and will be maintained along Baekeland Avenue without interrupting traffic flow along Baekeland Avenue or River Road.

#### River Road (CR 622) and Site Driveway 1

Site Driveway 1 is proposed to intersect River Road to form a T-shaped intersection under “stop”-control. The westbound Site Driveway 1 approach will provide a shared left-turn/right-turn lane and will be “stop”-controlled. The northbound River Road approach will provide a shared through/right-turn lane. The southbound River Road approach will provide a shared left-turn/through lane.

Under the Build condition, all movements are expected to operate at LOS E or better during both peak hours. The maximum (95<sup>th</sup> percentile) queue anticipated for the left-turn movement on the site driveway approach is approximately one vehicle, which could be accommodated within the site.

#### Baekeland Avenue and Site Driveway 2

Site Driveway 2 is proposed to intersect Baekeland Avenue to form a T-shaped intersection under “stop”-control. The eastbound Baekeland Avenue approach will provide a shared through/right-turn lane. The westbound Baekeland Avenue approach will provide a shared left-turn/through lane. The northbound Site Driveway 2 approach will provide a shared left-turn/right-turn lane and will be “stop”-controlled.

Under the Build condition, all movements are expected to operate at LOS A during both peak hours.

#### Baekeland Avenue and Site Driveway 3

Site Driveway 3 is proposed to intersect Baekeland Avenue to form a T-shaped intersection under “stop”-control. The eastbound Baekeland Avenue approach will provide a shared

through/right-turn lane. The westbound Baekeland Avenue approach will provide a shared left-turn/through lane. The northbound Site Driveway 3 approach will provide a shared left-turn/right-turn lane and will be “stop”-controlled.

Under the Build condition, all movements are expected to operate at LOS A during both peak hours.

#### Baekeland Avenue and Site Driveway 4

Site Driveway 4 is proposed to intersect Baekeland Avenue to form a T-shaped intersection under “stop”-control. The eastbound Baekeland Avenue approach will provide a shared through/right-turn lane. The westbound Baekeland Avenue approach will provide a shared left-turn/through lane. The northbound Site Driveway 4 approach will provide a shared left-turn/right-turn lane and will be “stop”-controlled.

Under the Build condition, all movements are expected to operate at LOS A during both peak hours.

## **REVIEW OF SITE PLAN**

We reviewed the site plan for the proposed development, particularly site access, on-site circulation and parking, and concluded the following:

- Access to the site will be provided via one unsignalized driveway along River Road and a network of driveways along Baekeland Avenue.
- The site has been designed to accommodate all design vehicles; including passenger vehicles, trucks, refuse vehicles and emergency vehicles.
- According to the redevelopment plan, the required parking space size is “not less than 9 feet wide nor less than 18 feet deep” served by two-way aisles with a minimum width of 24 feet. The proposed parking lots provide a uniform layout with 9 feet wide by 18-foot deep off-street parking spaces served by two-way aisles with a minimum width of 24 feet. This will allow for convenient access and efficient circulation throughout the site.
- The development will consist of a 400,000 sf warehouse. The total proposed parking supply is 341 car parking spaces, 58 of which will be land banked, and 140 trailer parking spaces. The parking supply will adequately accommodate the anticipated warehouse demand.

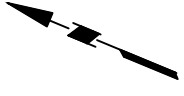
## **CONCLUSIONS**

Langan has concluded that the proposed warehouse will not significantly impact area traffic operations during peak hours. Based on our analyses, we determined the adjacent roadway network has sufficient capacity to accommodate the site-generated trips associated with the proposed development. Moreover, the proposed site driveways are expected to operate acceptably during peak traffic hours.

\\langan.com\data\PAR\data4\100594413\Project Data\_Discipline\Traffic\Reports\2019-06 Traffic Impact Study River Road.docx

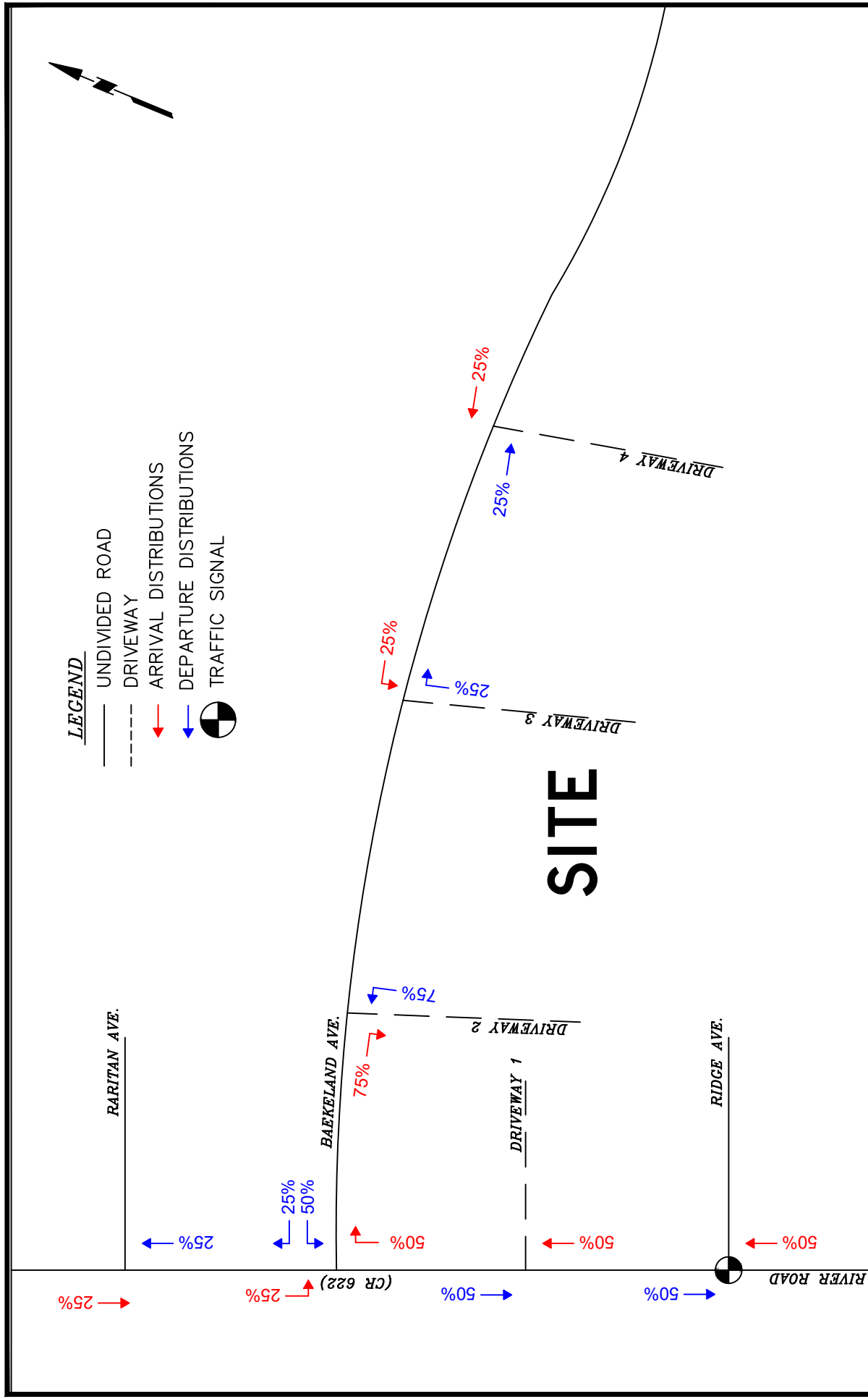
**APPENDIX A**  
**VOLUME WORKSHEETS**



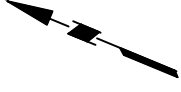


**LEGEND**

- UNDIVIDED ROAD
- - - DRIVEWAY
- ARRIVAL DISTRIBUTIONS
- ← DEPARTURE DISTRIBUTIONS
- ⊙ TRAFFIC SIGNAL



<p><b>LANGAN</b></p> <p>300 Kimball Drive Parsippany, NJ 07054</p> <p>T: 973-560-4900 F: 973-560-4901 www.langan.com</p> <p>Langan Engineering, Environmental, Surveying and Landscape Architecture, P.C., S.A. Langan Engineering, Environmental, Surveying and Landscape Architecture, P.C. Langan Engineering and Environmental Services, Inc. Langan CT, Inc. Langan International LLC Collectively known as Langan</p> <p>NJ CERTIFICATE OF AUTHORIZATION No. 24G427966403</p>	<p>Project</p> <p><b>MIDDLESEX BOROUGH WAREHOUSE PROJECT</b></p> <p>BLOCK No. 353, LOT No. 1.01 AND 1.02 BLOCK No. 356, LOT No. 1 BOROUGH OF MIDDLESEX</p> <p>MIDDLESEX COUNTY NEW JERSEY</p>	<p>Drawing Title</p> <p><b>PASSENGER VEHICLE ARRIVAL AND DEPARTURE DISTRIBUTIONS</b></p>	<p>Project No. 100594413</p> <p>Date 06/28/2019</p> <p>Scale N.T.S.</p> <p>Drawn By EJV</p> <p>Checked By N.T.S.</p> <p>Submission Date JUNE 2019</p>	<p>Drawing No.</p> <p><b>FIGURE A-1</b></p>
	<p>Sheet 1 of 4</p>			



**LEGEND**

- UNDIVIDED ROAD
- - - DRIVEWAY
- ARRIVAL DISTRIBUTIONS
- ← DEPARTURE DISTRIBUTIONS
- ⊙ TRAFFIC SIGNAL

RARITAN AVE.

BAEKELAND AVE.

DRIVEWAY 1

DRIVEWAY 2

DRIVEWAY 3

DRIVEWAY 4

**SITE**

(CR 622)

75%

75%

75%

RIDGE AVE.

RIVER ROAD

**LANGAN**

300 Kimball Drive  
 Parsippany, NJ 07054  
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 Landscape Architecture, P.C., S.A.  
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 Langan Engineering and Environmental Services, Inc.  
 Langan CT, Inc.  
 Langan International LLC  
 Collectively known as Langan

NJ CERTIFICATE OF AUTHORIZATION No. 24GA27966403

Project

**MIDDLESEX BOROUGH  
 WAREHOUSE PROJECT**  
 BLOCK No. 353, LOT No. 1.01 AND 1.02  
 BLOCK No. 356, LOT No. 1  
 BOROUGH OF MIDDLESEX  
 MIDDLESEX COUNTY NEW JERSEY

Drawing Title

**TRUCK ARRIVAL  
 AND DEPARTURE  
 DISTRIBUTIONS**

Project No.

100594413

Date

06/28/2019

Scale

N.T.S.

Drawn By

EJV

Checked By

N.T.S.

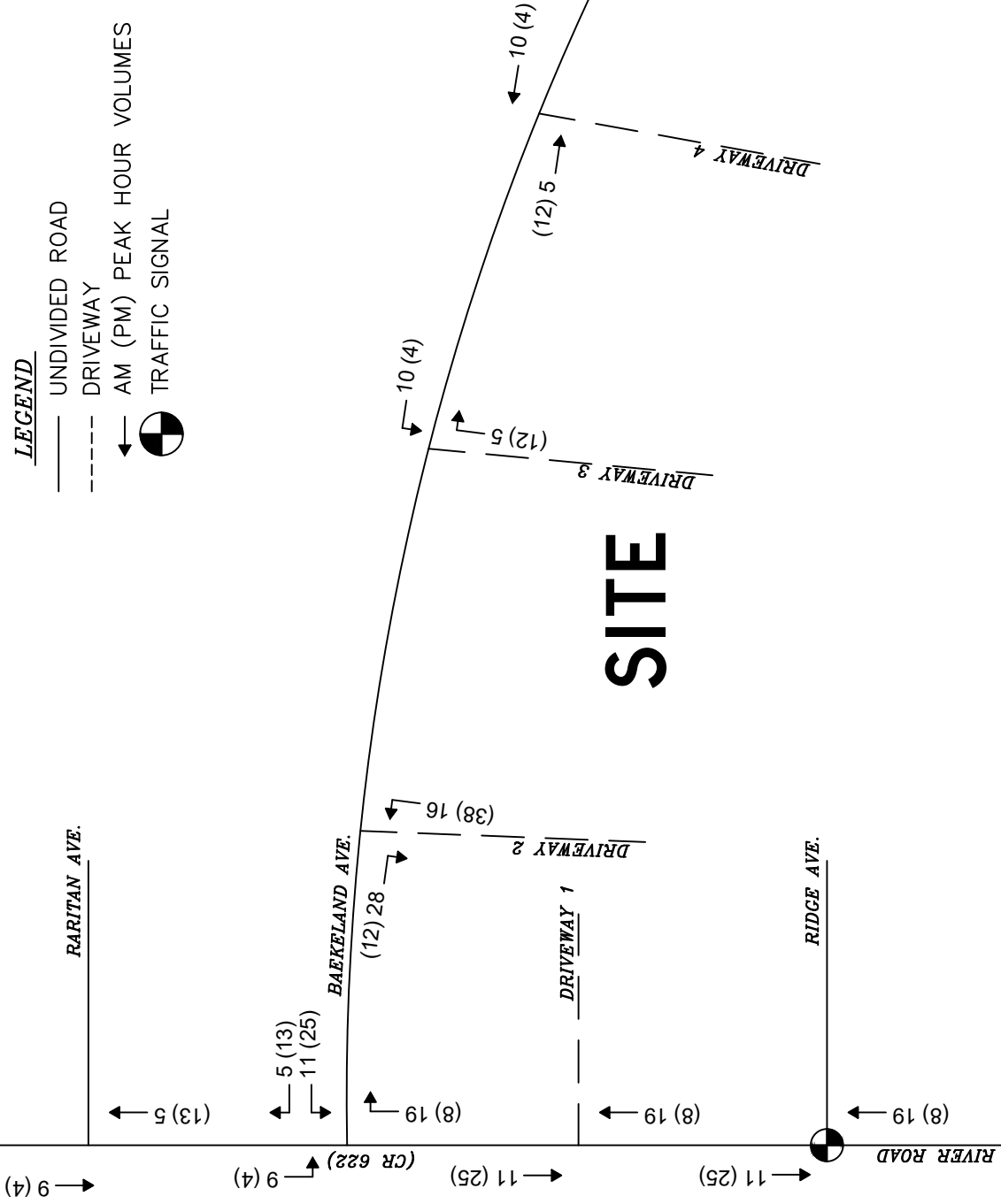
Submission Date

JUNE 2019

Drawing No.

**FIGURE  
A-2**

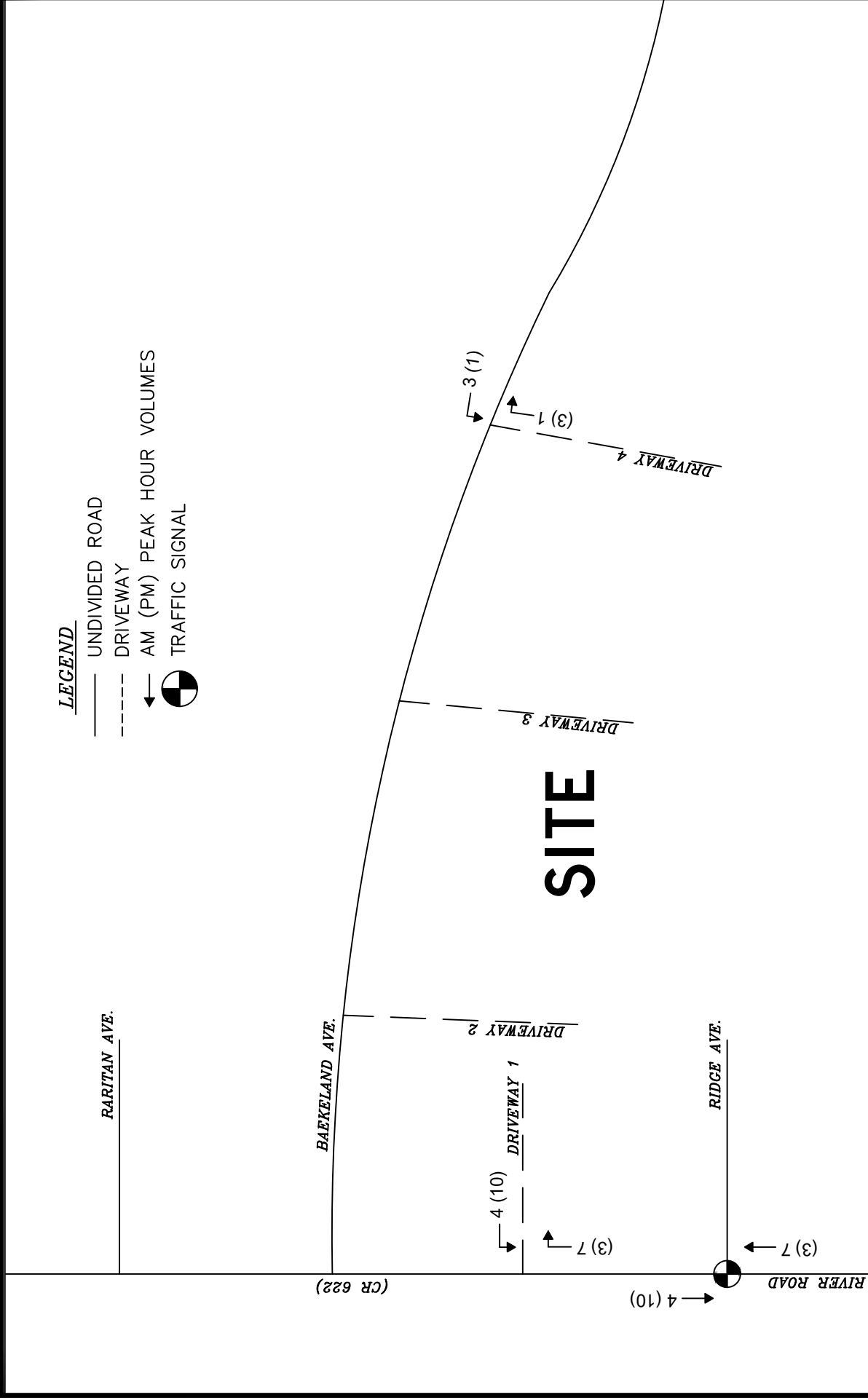
Sheet 2 of 4



<b>LANGAN</b> 300 Kimball Drive Parsippany, NJ 07054 T: 973-560-4900 F: 973-560-4901 www.langan.com Langan Engineering, Environmental, Surveying and Landscape Architecture, P.C., S.A. Langan Engineering, Environmental, Surveying and Landscape Architecture, P.C. Langan Engineering and Environmental Services, Inc. Langan CT, Inc. Langan International LLC Collectively known as Langan	Project <b>MIDDLESEX BOROUGH          WAREHOUSE PROJECT</b> BLOCK No. 353, LOT No. 1.01 AND 1.02 BLOCK No. 356, LOT No. 1 BOROUGH OF MIDDLESEX MIDDLESEX COUNTY NEW JERSEY	Drawing Title <b>PASSENGER VEHICLE          SITE-GENERATED          TRIPS</b>	Project No. 100594413	Drawing No. <b>FIGURE          A-3</b>
	Date 06/28/2019	Scale N.T.S.	Drawn By EJV	Checked By N.T.S.

**LEGEND**

- UNDIVIDED ROAD
- - - DRIVEWAY
- ← AM (PM) PEAK HOUR VOLUMES
- ⊙ TRAFFIC SIGNAL

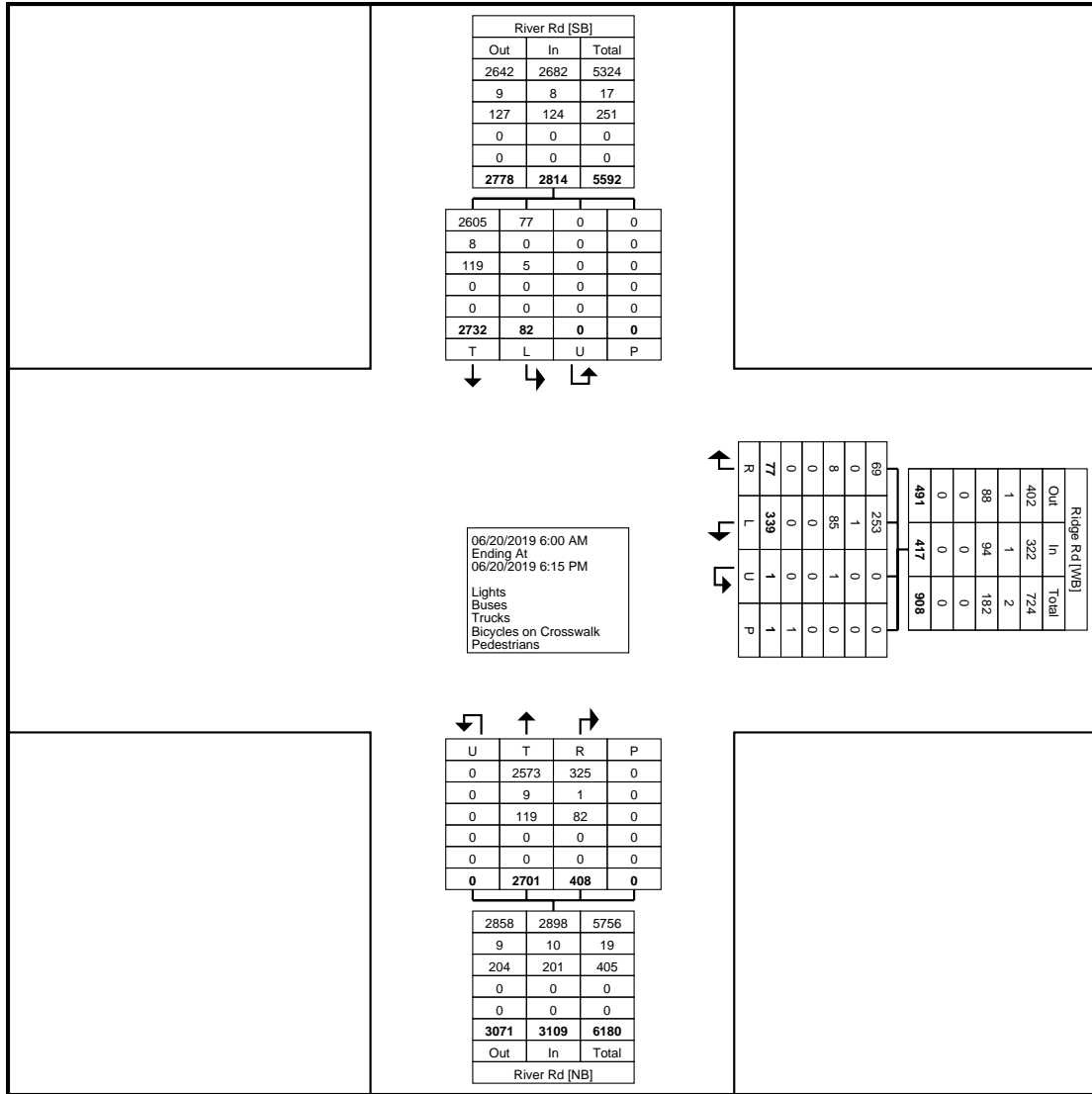


<p><b>LANGAN</b></p> <p>300 Kimball Drive Parsippany, NJ 07054</p> <p>T: 973-560-4900 F: 973-560-4901 www.langan.com</p> <p>Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C., S.A. Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C. Langan Engineering and Environmental Services, Inc. Langan CT, Inc. Langan International LLC Collectively known as Langan</p> <p><b>NJ CERTIFICATE OF AUTHORIZATION No. 24GA27996403</b></p>	<p>Project</p> <p><b>MIDDLESEX BOROUGH WAREHOUSE PROJECT</b></p> <p>BLOCK No. 353, LOT No. 1.01 AND 1.02 BLOCK No. 356, LOT No. 1 BOROUGH OF MIDDLESEX</p> <p>MIDDLESEX COUNTY NEW JERSEY</p>	<p>Drawing Title</p> <p><b>TRUCK SITE-GENERATED TRIPS</b></p>	<p>Project No. 100594413</p> <p>Date 06/28/2019</p> <p>Scale N.T.S.</p> <p>Drawn By EJV</p> <p>Checked By N.T.S.</p> <p>Submission Date JUNE 2019</p>	<p>Drawing No.</p> <p><b>FIGURE A-4</b></p>
	<p>Sheet 4 of 4</p>			

**APPENDIX B**  
**TRAFFIC COUNTS**



Middlesex, NJ  
River Rd & Ridge Rd  
Thursday, June 20, 2019  
Location: 40.554334, -74.517445

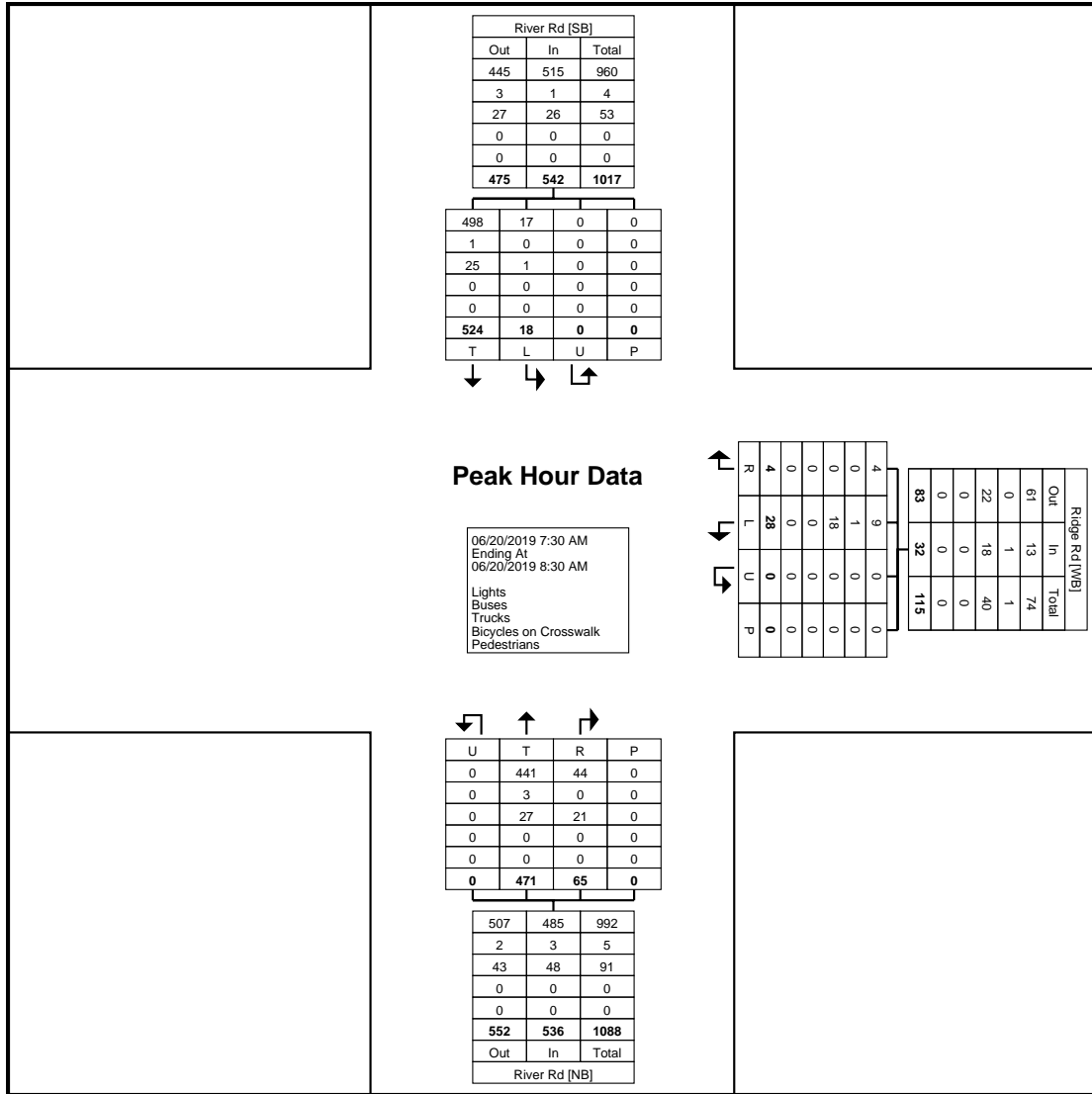


Turning Movement Data Plot





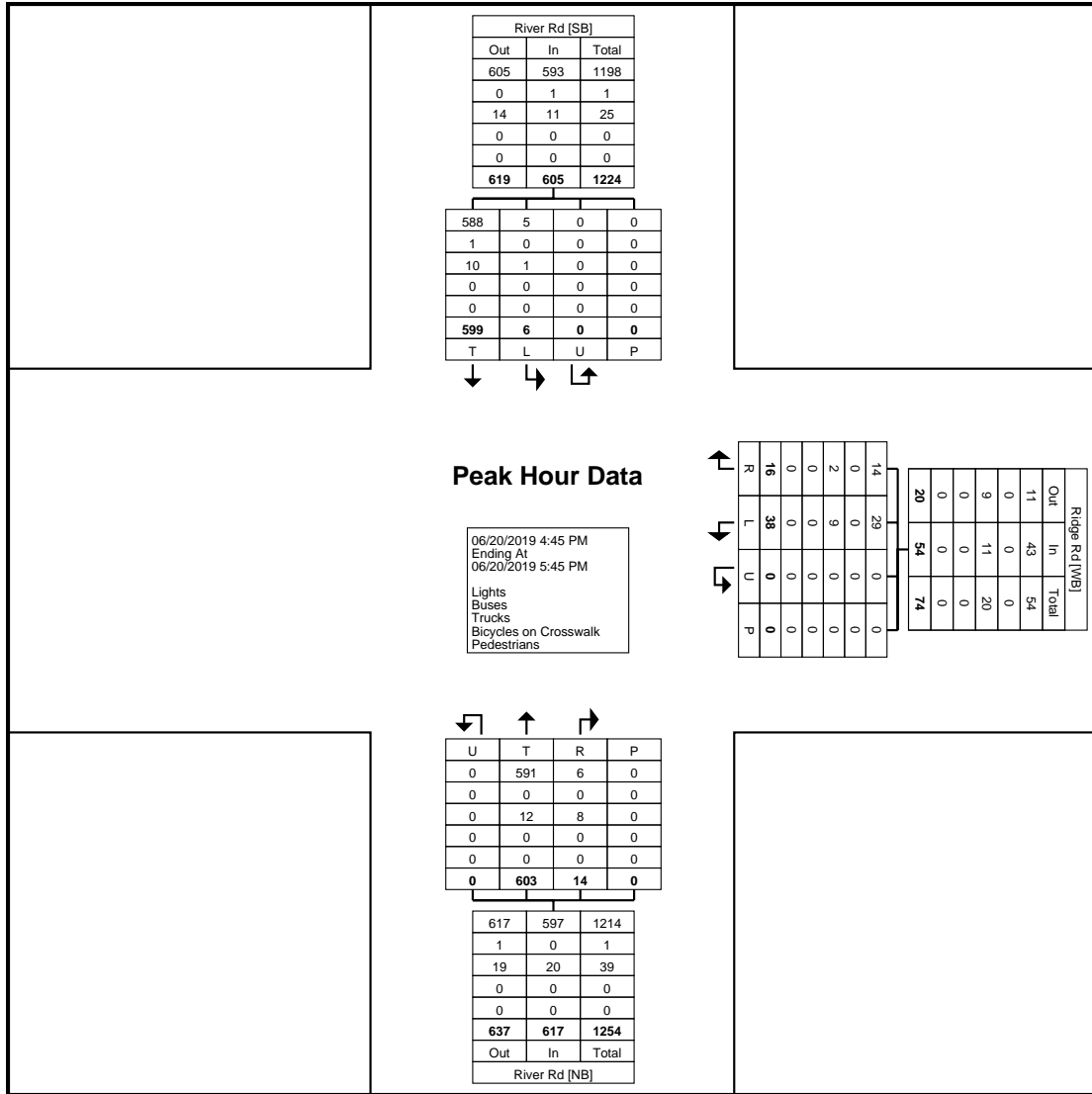
Middlesex, NJ  
River Rd & Ridge Rd  
Thursday, June 20, 2019  
Location: 40.554334, -74.517445



Turning Movement Peak Hour Data Plot (7:30 AM)



Middlesex, NJ  
River Rd & Ridge Rd  
Thursday, June 20, 2019  
Location: 40.554334, -  
74.517445



Turning Movement Peak Hour Data Plot (4:45 PM)



Middlesex, NJ  
 River Rd & Baekland Ave &  
 Raritan Ave  
 Thursday, June 20, 2019  
 Location: 40.558863, -  
 74.521016

www.TSTData.com  
 184 Baker Rd

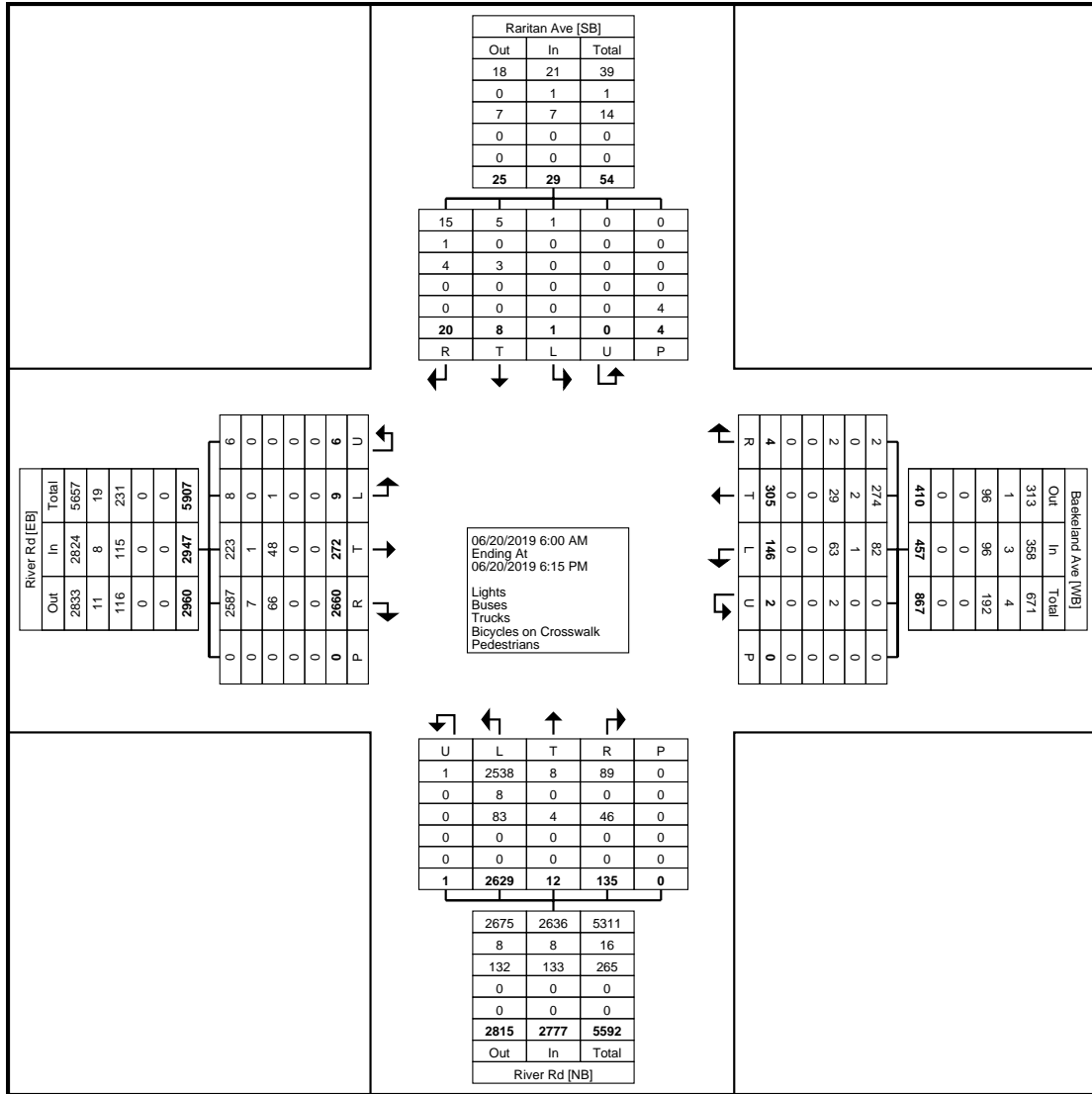
Coatesville, Pennsylvania, United States 19320  
 610-466-1469  
 Serving Transportation Professionals Since 1995

Count Name: River  
 Rd/Baekland Ave@Raritan Ave  
 Site Code:  
 Start Date: 06/20/2019  
 Page No: 1

### Turning Movement Data

Start Time	River Rd Eastbound						Baekeland Ave Westbound						River Rd Northbound						Raritan Ave Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
6:00 AM	0	11	47	0	0	58	2	3	0	0	0	5	25	1	10	0	0	36	0	1	1	0	0	2	101
6:15 AM	0	13	61	0	0	74	9	7	0	0	0	16	39	0	6	0	0	45	0	0	0	0	0	0	135
6:30 AM	0	14	82	0	0	96	4	4	0	0	0	8	63	0	15	0	0	78	0	2	0	0	0	2	184
6:45 AM	0	41	84	0	0	125	7	8	0	0	0	15	64	1	14	0	0	79	0	1	0	0	0	1	220
Hourly Total	0	79	274	0	0	353	22	22	0	0	0	44	191	2	45	0	0	238	0	4	1	0	0	5	640
7:00 AM	0	22	100	0	0	122	4	16	0	0	0	20	67	2	14	1	0	84	0	0	0	0	1	0	226
7:15 AM	0	11	122	0	0	133	8	7	0	0	0	15	99	1	5	0	0	105	0	0	2	0	0	2	255
7:30 AM	0	12	118	0	0	130	4	7	0	0	0	11	149	0	9	0	0	158	0	0	0	0	0	0	299
7:45 AM	0	17	128	0	0	145	4	6	0	0	0	10	113	1	5	0	0	119	0	0	0	0	0	0	274
Hourly Total	0	62	468	0	0	530	20	36	0	0	0	56	428	4	33	1	0	466	0	0	2	0	1	2	1054
8:00 AM	1	12	120	0	0	133	4	5	0	0	0	9	91	1	2	0	0	94	0	0	1	0	0	1	237
8:15 AM	1	16	151	0	0	168	4	5	0	0	0	9	92	1	6	0	0	99	0	0	1	0	1	1	277
8:30 AM	1	13	135	0	0	149	7	6	0	2	0	15	88	0	4	0	0	92	0	0	3	0	0	3	259
8:45 AM	1	8	109	0	0	118	4	15	0	0	0	19	89	1	3	0	0	93	0	0	1	0	0	1	231
Hourly Total	4	49	515	0	0	568	19	31	0	2	0	52	360	3	15	0	0	378	0	0	6	0	1	6	1004
9:00 AM	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
3:00 PM	0	5	78	6	0	89	7	32	2	0	0	41	84	0	9	0	0	93	0	0	1	0	2	1	224
3:15 PM	3	20	82	0	0	105	6	16	1	0	0	23	129	0	8	0	0	137	0	1	1	0	0	2	267
3:30 PM	0	5	94	0	0	99	9	30	1	0	0	40	140	0	6	0	0	146	0	0	1	0	0	1	286
3:45 PM	1	9	102	0	0	112	10	28	0	0	0	38	128	0	5	0	0	133	0	0	1	0	0	1	284
Hourly Total	4	39	356	6	0	405	32	106	4	0	0	142	481	0	28	0	0	509	0	1	4	0	2	5	1061
4:00 PM	0	8	104	0	0	112	7	24	0	0	0	31	155	2	3	0	0	160	0	2	2	0	0	4	307
4:15 PM	0	9	102	0	0	111	5	16	0	0	0	21	162	0	0	0	0	162	0	0	0	0	0	0	294
4:30 PM	0	8	114	0	0	122	10	24	0	0	0	34	113	0	1	0	0	114	0	0	1	0	0	1	271
4:45 PM	1	6	132	0	0	139	11	19	0	0	0	30	167	0	4	0	0	171	0	0	2	0	0	2	342
Hourly Total	1	31	452	0	0	484	33	83	0	0	0	116	597	2	8	0	0	607	0	2	5	0	0	7	1214
5:00 PM	0	3	121	0	0	124	11	12	0	0	0	23	144	0	2	0	0	146	0	1	1	0	0	2	295
5:15 PM	0	3	154	0	0	157	2	9	0	0	0	11	155	1	2	0	0	158	1	0	0	0	0	1	327
5:30 PM	0	3	171	0	0	174	3	3	0	0	0	6	151	0	2	0	0	153	0	0	1	0	0	1	334
5:45 PM	0	3	147	0	0	150	4	3	0	0	0	7	122	0	0	0	0	122	0	0	0	0	0	0	279
Hourly Total	0	12	593	0	0	605	20	27	0	0	0	47	572	1	6	0	0	579	1	1	2	0	0	4	1235
6:00 PM	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Grand Total	9	272	2660	6	0	2947	146	305	4	2	0	457	2629	12	135	1	0	2777	1	8	20	0	4	29	6210
Approach %	0.3	9.2	90.3	0.2	-	-	31.9	66.7	0.9	0.4	-	-	94.7	0.4	4.9	0.0	-	-	3.4	27.6	69.0	0.0	-	-	-
Total %	0.1	4.4	42.8	0.1	-	47.5	2.4	4.9	0.1	0.0	-	7.4	42.3	0.2	2.2	0.0	-	44.7	0.0	0.1	0.3	0.0	-	0.5	-
Lights	8	223	2587	6	-	2824	82	274	2	0	-	358	2538	8	89	1	-	2636	1	5	15	0	-	21	5839
% Lights	88.9	82.0	97.3	100.0	-	95.8	56.2	89.8	50.0	0.0	-	78.3	96.5	66.7	65.9	100.0	-	94.9	100.0	62.5	75.0	-	-	72.4	94.0
Buses	0	1	7	0	-	8	1	2	0	0	-	3	8	0	0	0	-	8	0	0	1	0	-	1	20
% Buses	0.0	0.4	0.3	0.0	-	0.3	0.7	0.7	0.0	0.0	-	0.7	0.3	0.0	0.0	0.0	-	0.3	0.0	0.0	5.0	-	-	3.4	0.3
Trucks	1	48	66	0	-	115	63	29	2	2	-	96	83	4	46	0	-	133	0	3	4	0	-	7	351
% Trucks	11.1	17.6	2.5	0.0	-	3.9	43.2	9.5	50.0	100.0	-	21.0	3.2	33.3	34.1	0.0	-	4.8	0.0	37.5	20.0	-	-	24.1	5.7
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	4	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

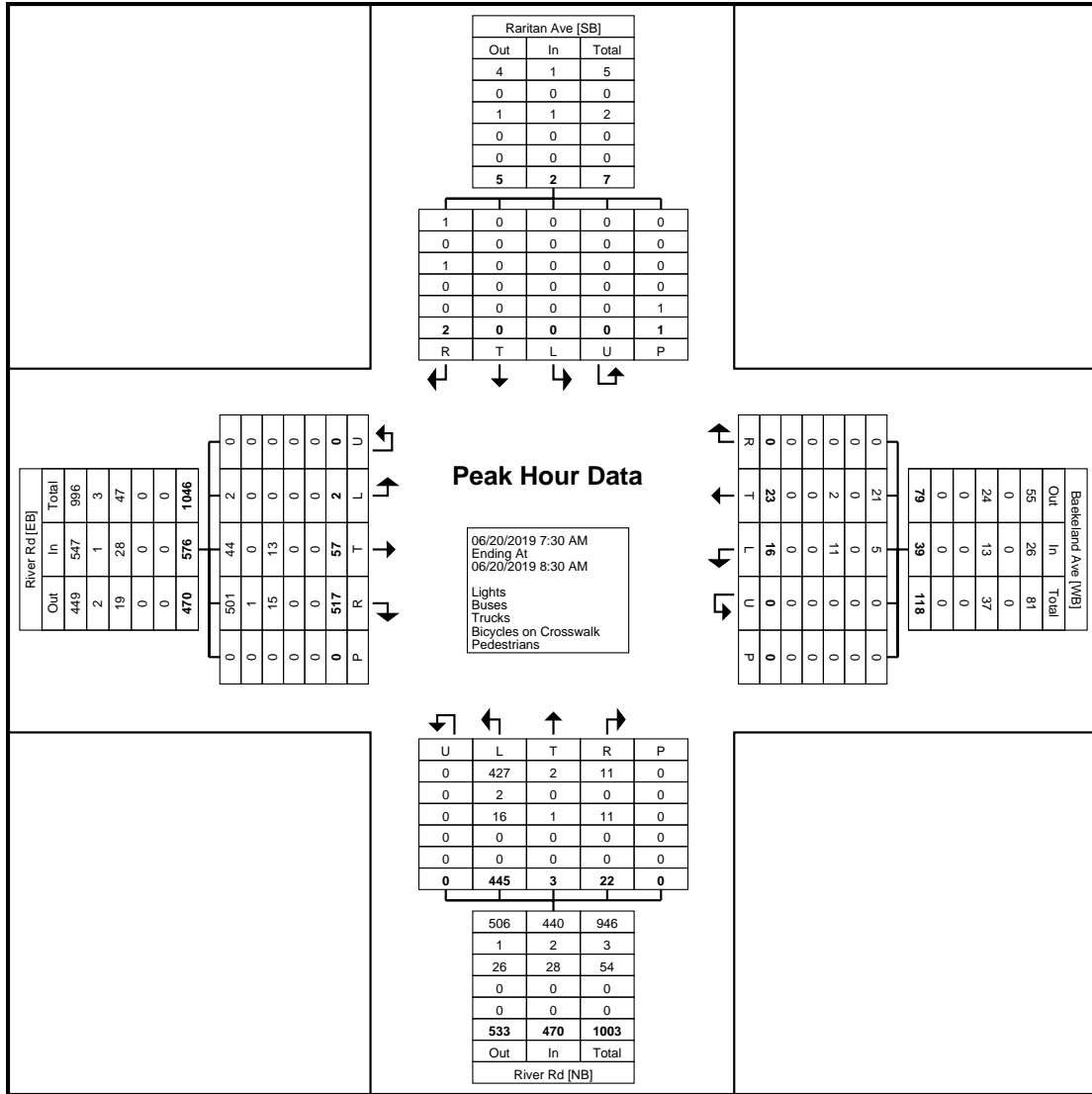
Middlesex, NJ  
River Rd & Baekland Ave &  
Raritan Ave  
Thursday, June 20, 2019  
Location: 40.558863, -  
74.521016



Turning Movement Data Plot

Turning Movement Peak Hour Data (7:30 AM)

Start Time	River Rd Eastbound						Baekland Ave Westbound						River Rd Northbound						Raritan Ave Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
7:30 AM	0	12	118	0	0	130	4	7	0	0	0	11	149	0	9	0	0	158	0	0	0	0	0	0	299
7:45 AM	0	17	128	0	0	145	4	6	0	0	0	10	113	1	5	0	0	119	0	0	0	0	0	0	274
8:00 AM	1	12	120	0	0	133	4	5	0	0	0	9	91	1	2	0	0	94	0	0	1	0	0	1	237
8:15 AM	1	16	151	0	0	168	4	5	0	0	0	9	92	1	6	0	0	99	0	0	1	0	1	1	277
Total	2	57	517	0	0	576	16	23	0	0	0	39	445	3	22	0	0	470	0	0	2	0	1	2	1087
Approach %	0.3	9.9	89.8	0.0	-	-	41.0	59.0	0.0	0.0	-	-	94.7	0.6	4.7	0.0	-	-	0.0	0.0	100.0	0.0	-	-	-
Total %	0.2	5.2	47.6	0.0	-	53.0	1.5	2.1	0.0	0.0	-	3.6	40.9	0.3	2.0	0.0	-	43.2	0.0	0.0	0.2	0.0	-	0.2	-
PHF	0.500	0.838	0.856	0.000	-	0.857	1.000	0.821	0.000	0.000	-	0.886	0.747	0.750	0.611	0.000	-	0.744	0.000	0.000	0.500	0.000	-	0.500	0.909
Lights	2	44	501	0	-	547	5	21	0	0	-	26	427	2	11	0	-	440	0	0	1	0	-	1	1014
% Lights	100.0	77.2	96.9	-	-	95.0	31.3	91.3	-	-	-	66.7	96.0	66.7	50.0	-	-	93.6	-	-	50.0	-	-	50.0	93.3
Buses	0	0	1	0	-	1	0	0	0	0	-	0	2	0	0	0	-	2	0	0	0	0	-	0	3
% Buses	0.0	0.0	0.2	-	-	0.2	0.0	0.0	-	-	-	0.0	0.4	0.0	0.0	-	-	0.4	-	-	0.0	-	-	0.0	0.3
Trucks	0	13	15	0	-	28	11	2	0	0	-	13	16	1	11	0	-	28	0	0	1	0	-	1	70
% Trucks	0.0	22.8	2.9	-	-	4.9	68.8	8.7	-	-	-	33.3	3.6	33.3	50.0	-	-	6.0	-	-	50.0	-	-	50.0	6.4
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

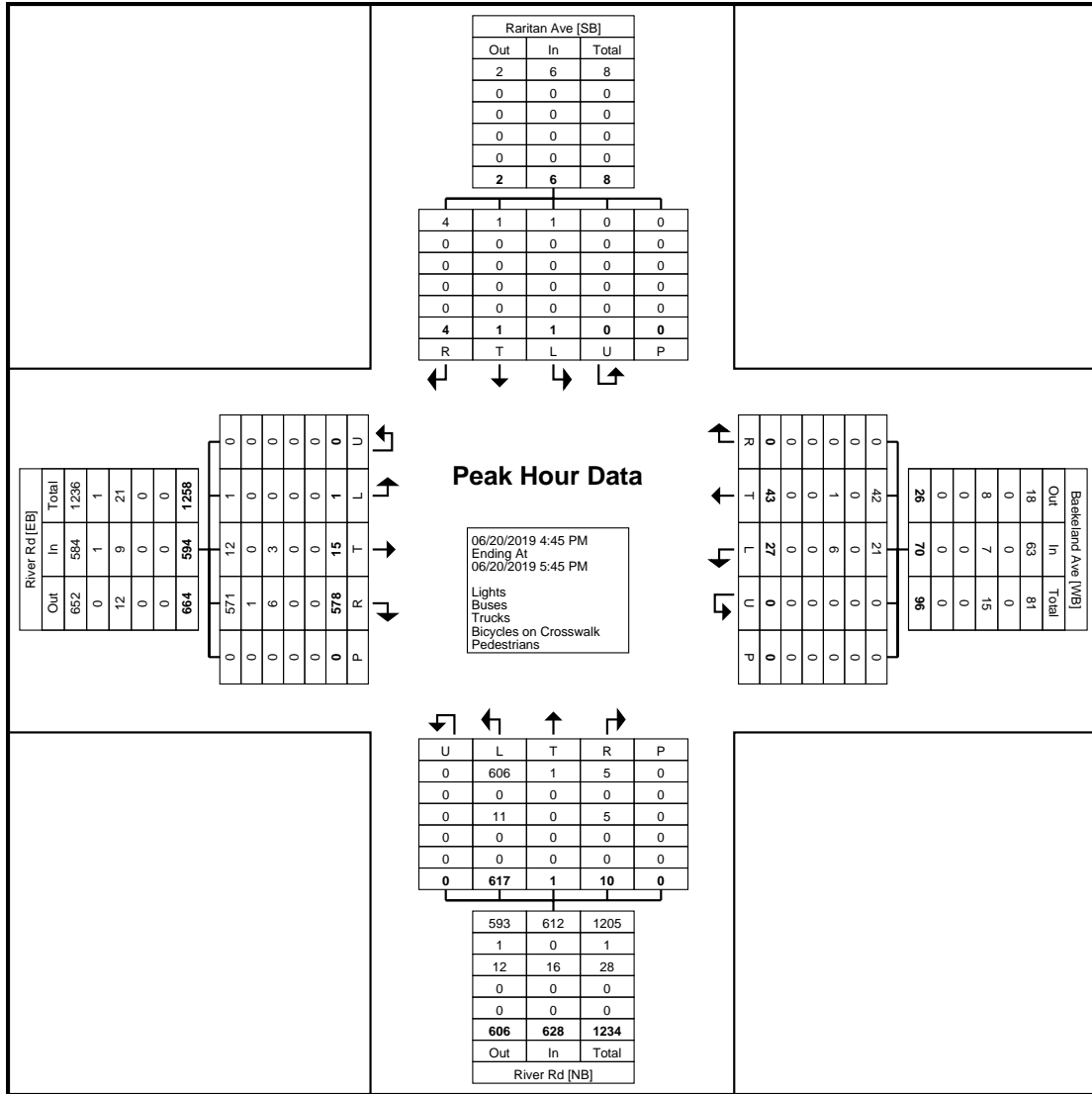


Turning Movement Peak Hour Data Plot (7:30 AM)

Turning Movement Peak Hour Data (4:45 PM)

Start Time	River Rd Eastbound						Baekland Ave Westbound						River Rd Northbound						Raritan Ave Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
4:45 PM	1	6	132	0	0	139	11	19	0	0	0	30	167	0	4	0	0	171	0	0	2	0	0	2	342
5:00 PM	0	3	121	0	0	124	11	12	0	0	0	23	144	0	2	0	0	146	0	1	1	0	0	2	295
5:15 PM	0	3	154	0	0	157	2	9	0	0	0	11	155	1	2	0	0	158	1	0	0	0	0	1	327
5:30 PM	0	3	171	0	0	174	3	3	0	0	0	6	151	0	2	0	0	153	0	0	1	0	0	1	334
Total	1	15	578	0	0	594	27	43	0	0	0	70	617	1	10	0	0	628	1	1	4	0	0	6	1298
Approach %	0.2	2.5	97.3	0.0	-	-	38.6	61.4	0.0	0.0	-	-	98.2	0.2	1.6	0.0	-	-	16.7	16.7	66.7	0.0	-	-	-
Total %	0.1	1.2	44.5	0.0	-	45.8	2.1	3.3	0.0	0.0	-	5.4	47.5	0.1	0.8	0.0	-	48.4	0.1	0.1	0.3	0.0	-	0.5	-
PHF	0.250	0.625	0.845	0.000	-	0.853	0.614	0.566	0.000	0.000	-	0.583	0.924	0.250	0.625	0.000	-	0.918	0.250	0.250	0.500	0.000	-	0.750	0.949
Lights	1	12	571	0	-	584	21	42	0	0	-	63	606	1	5	0	-	612	1	1	4	0	-	6	1265
% Lights	100.0	80.0	98.8	-	-	98.3	77.8	97.7	-	-	-	90.0	98.2	100.0	50.0	-	-	97.5	100.0	100.0	100.0	-	-	100.0	97.5
Buses	0	0	1	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1
% Buses	0.0	0.0	0.2	-	-	0.2	0.0	0.0	-	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.1
Trucks	0	3	6	0	-	9	6	1	0	0	-	7	11	0	5	0	-	16	0	0	0	0	-	0	32
% Trucks	0.0	20.0	1.0	-	-	1.5	22.2	2.3	-	-	-	10.0	1.8	0.0	50.0	-	-	2.5	0.0	0.0	0.0	-	-	0.0	2.5
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

















Turning Movement Peak Hour Data Plot (4:45 PM)

**APPENDIX C**  
**CAPACITY ANALYSIS**

Lanes, Volumes, Timings  
4: River Road (CR 622) & Ridge Road

2021 No-Build Condition  
AM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	61	14	480	170	53	535
Future Volume (vph)	61	14	480	170	53	535
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	15	15	12	13	12	12
Storage Length (ft)	0	0		250	150	
Storage Lanes	1	1		1	1	
Taper Length (ft)	25				60	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.850		0.850		
Fl <sub>t</sub> Protected	0.950				0.950	
Satd. Flow (prot)	1408	1660	1792	1314	1671	1810
Fl <sub>t</sub> Permitted	0.950				0.381	
Satd. Flow (perm)	1408	1660	1792	1314	670	1810
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		15		187		
Link Speed (mph)	30		35			35
Link Distance (ft)	747		1248			1473
Travel Time (s)	17.0		24.3			28.7
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	41%	7%	6%	27%	8%	5%
Adj. Flow (vph)	67	15	527	187	58	588
Shared Lane Traffic (%)						
Lane Group Flow (vph)	67	15	527	187	58	588
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	15		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	0.88	0.88	1.00	0.96	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	2	1	1	2
Detector Template	Left	Right	Thru	Right	Left	Thru
Leading Detector (ft)	20	20	100	20	20	100
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	6	20	20	6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)			94			94
Detector 2 Size(ft)			6			6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	pt+ov	NA	pt+ov	pm+pt	NA

Lanes, Volumes, Timings  
4: River Road (CR 622) & Ridge Road

2021 No-Build Condition  
AM Peak Hour



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Protected Phases	8	1 8	2	2 8	1	6
Permitted Phases					6	
Detector Phase	8	1 8	2	2 8	1	6
Switch Phase						
Minimum Initial (s)	8.0		12.0		6.0	21.0
Minimum Split (s)	15.0		20.0		9.0	29.0
Total Split (s)	27.0		38.0		13.0	51.0
Total Split (%)	34.6%		48.7%		16.7%	65.4%
Maximum Green (s)	20.0		30.0		10.0	43.0
Yellow Time (s)	3.0		5.0		3.0	5.0
All-Red Time (s)	4.0		3.0		0.0	3.0
Lost Time Adjust (s)	0.0		0.0		0.0	0.0
Total Lost Time (s)	7.0		8.0		3.0	8.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Recall Mode	None		Max		None	Max
Act Effct Green (s)	9.4	22.8	39.9	59.4	50.9	45.9
Actuated g/C Ratio	0.13	0.32	0.57	0.84	0.72	0.65
v/c Ratio	0.36	0.03	0.52	0.16	0.10	0.50
Control Delay	31.9	7.6	13.3	0.8	3.6	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.9	7.6	13.3	0.8	3.6	8.5
LOS	C	A	B	A	A	A
Approach Delay	27.4		10.0			8.0
Approach LOS	C		A			A
90th %ile Green (s)	12.0		32.8		7.2	43.0
90th %ile Term Code	Gap		Hold		Gap	MaxR
70th %ile Green (s)	9.9		33.5		6.5	43.0
70th %ile Term Code	Gap		Hold		Gap	MaxR
50th %ile Green (s)	8.5		33.9		6.1	43.0
50th %ile Term Code	Gap		Hold		Gap	MaxR
30th %ile Green (s)	8.0		43.0		0.0	43.0
30th %ile Term Code	Min		Hold		Skip	MaxR
10th %ile Green (s)	8.0		58.0		0.0	58.0
10th %ile Term Code	Min		Dwell		Skip	Dwell
Queue Length 50th (ft)	25	0	138	0	5	106
Queue Length 95th (ft)	60	11	260	12	16	204
Internal Link Dist (ft)	667		1168			1393
Turn Bay Length (ft)				250	150	
Base Capacity (vph)	402	633	1017	1237	628	1180
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.02	0.52	0.15	0.09	0.50

Intersection Summary

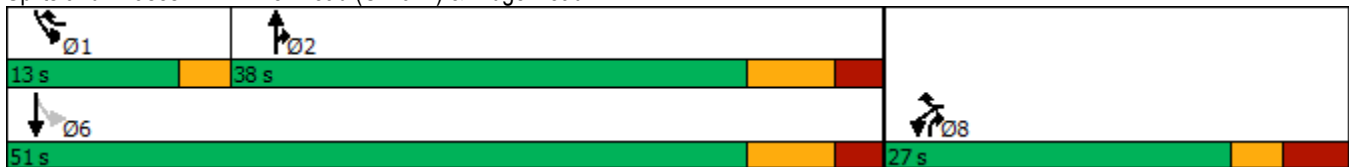
Area Type: Other  
Cycle Length: 78

Lanes, Volumes, Timings  
 4: River Road (CR 622) & Ridge Road

2021 No-Build Condition  
 AM Peak Hour













Actuated Cycle Length: 70.3	
Natural Cycle: 55	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.52	
Intersection Signal Delay: 10.1	Intersection LOS: B
Intersection Capacity Utilization 52.8%	ICU Level of Service A
Analysis Period (min) 15	
90th %ile Actuated Cycle: 70	
70th %ile Actuated Cycle: 67.9	
50th %ile Actuated Cycle: 66.5	
30th %ile Actuated Cycle: 66	
10th %ile Actuated Cycle: 81	

Splits and Phases: 4: River Road (CR 622) & Ridge Road



Lanes, Volumes, Timings  
4: River Road (CR 622) & Ridge Road

2021 Build Condition  
AM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	61	14	506	170	53	550
Future Volume (vph)	61	14	506	170	53	550
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	15	15	12	13	12	12
Storage Length (ft)	0	0		250	150	
Storage Lanes	1	1		1	1	
Taper Length (ft)	25				60	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.850		0.850		
Fl <sub>t</sub> Protected	0.950				0.950	
Satd. Flow (prot)	1408	1660	1776	1314	1671	1810
Fl <sub>t</sub> Permitted	0.950				0.360	
Satd. Flow (perm)	1408	1660	1776	1314	633	1810
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		15		187		
Link Speed (mph)	30		35			35
Link Distance (ft)	747		1248			1165
Travel Time (s)	17.0		24.3			22.7
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	41%	7%	7%	27%	8%	5%
Adj. Flow (vph)	67	15	556	187	58	604
Shared Lane Traffic (%)						
Lane Group Flow (vph)	67	15	556	187	58	604
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	15		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	0.88	0.88	1.00	0.96	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	2	1	1	2
Detector Template	Left	Right	Thru	Right	Left	Thru
Leading Detector (ft)	20	20	100	20	20	100
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	6	20	20	6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)			94			94
Detector 2 Size(ft)			6			6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	pt+ov	NA	pt+ov	pm+pt	NA

Lanes, Volumes, Timings  
4: River Road (CR 622) & Ridge Road

2021 Build Condition  
AM Peak Hour



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Protected Phases	8	1 8	2	2 8	1	6
Permitted Phases					6	
Detector Phase	8	1 8	2	2 8	1	6
Switch Phase						
Minimum Initial (s)	8.0		12.0		6.0	21.0
Minimum Split (s)	15.0		20.0		9.0	29.0
Total Split (s)	27.0		38.0		13.0	51.0
Total Split (%)	34.6%		48.7%		16.7%	65.4%
Maximum Green (s)	20.0		30.0		10.0	43.0
Yellow Time (s)	3.0		5.0		3.0	5.0
All-Red Time (s)	4.0		3.0		0.0	3.0
Lost Time Adjust (s)	0.0		0.0		0.0	0.0
Total Lost Time (s)	7.0		8.0		3.0	8.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Recall Mode	None		Max		None	Max
Act Effct Green (s)	9.4	22.8	39.9	59.4	50.9	45.9
Actuated g/C Ratio	0.13	0.32	0.57	0.84	0.72	0.65
v/c Ratio	0.36	0.03	0.55	0.16	0.11	0.51
Control Delay	31.9	7.6	13.9	0.8	3.6	8.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.9	7.6	13.9	0.8	3.6	8.6
LOS	C	A	B	A	A	A
Approach Delay	27.4		10.6			8.2
Approach LOS	C		B			A
90th %ile Green (s)	12.0		32.8		7.2	43.0
90th %ile Term Code	Gap		Hold		Gap	MaxR
70th %ile Green (s)	9.9		33.5		6.5	43.0
70th %ile Term Code	Gap		Hold		Gap	MaxR
50th %ile Green (s)	8.5		33.9		6.1	43.0
50th %ile Term Code	Gap		Hold		Gap	MaxR
30th %ile Green (s)	8.0		43.0		0.0	43.0
30th %ile Term Code	Min		Hold		Skip	MaxR
10th %ile Green (s)	8.0		58.0		0.0	58.0
10th %ile Term Code	Min		Dwell		Skip	Dwell
Queue Length 50th (ft)	25	0	150	0	5	110
Queue Length 95th (ft)	60	11	282	12	16	212
Internal Link Dist (ft)	667		1168			1085
Turn Bay Length (ft)				250	150	
Base Capacity (vph)	402	633	1008	1237	606	1180
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.02	0.55	0.15	0.10	0.51

Intersection Summary

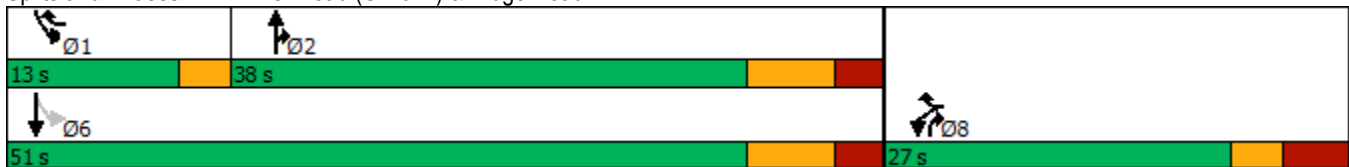
Area Type: Other  
Cycle Length: 78

Lanes, Volumes, Timings  
 4: River Road (CR 622) & Ridge Road

2021 Build Condition  
 AM Peak Hour

Actuated Cycle Length: 70.3	
Natural Cycle: 55	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.55	
Intersection Signal Delay: 10.5	Intersection LOS: B
Intersection Capacity Utilization 54.1%	ICU Level of Service A
Analysis Period (min) 15	
90th %ile Actuated Cycle: 70	
70th %ile Actuated Cycle: 67.9	
50th %ile Actuated Cycle: 66.5	
30th %ile Actuated Cycle: 66	
10th %ile Actuated Cycle: 81	













Splits and Phases: 4: River Road (CR 622) & Ridge Road





Lanes, Volumes, Timings  
4: River Road (CR 622) & Ridge Road

2021 No-Build Condition  
PM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	150	53	615	55	20	611
Future Volume (vph)	150	53	615	55	20	611
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	15	15	12	13	12	12
Storage Length (ft)	0	0		250	150	
Storage Lanes	1	1		1	1	
Taper Length (ft)	25				60	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.850		0.850		
Fl <sub>t</sub> Protected	0.950				0.950	
Satd. Flow (prot)	1601	1630	1863	1255	1641	1863
Fl <sub>t</sub> Permitted	0.950				0.270	
Satd. Flow (perm)	1601	1630	1863	1255	466	1863
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		56		59		
Link Speed (mph)	30		35			35
Link Distance (ft)	747		1248			1473
Travel Time (s)	17.0		24.3			28.7
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	24%	9%	2%	33%	10%	2%
Adj. Flow (vph)	160	56	654	59	21	650
Shared Lane Traffic (%)						
Lane Group Flow (vph)	160	56	654	59	21	650
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	15		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	0.88	0.88	1.00	0.96	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	2	1	1	2
Detector Template	Left	Right	Thru	Right	Left	Thru
Leading Detector (ft)	20	20	100	20	20	100
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	6	20	20	6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)			94			94
Detector 2 Size(ft)			6			6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	pt+ov	NA	pt+ov	pm+pt	NA

Lanes, Volumes, Timings  
4: River Road (CR 622) & Ridge Road

2021 No-Build Condition  
PM Peak Hour



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Protected Phases	8	1 8	2	2 8	1	6
Permitted Phases					6	
Detector Phase	8	1 8	2	2 8	1	6
Switch Phase						
Minimum Initial (s)	8.0		12.0		6.0	21.0
Minimum Split (s)	15.0		20.0		9.0	29.0
Total Split (s)	27.0		38.0		13.0	51.0
Total Split (%)	34.6%		48.7%		16.7%	65.4%
Maximum Green (s)	20.0		30.0		10.0	43.0
Yellow Time (s)	3.0		5.0		3.0	5.0
All-Red Time (s)	4.0		3.0		0.0	3.0
Lost Time Adjust (s)	0.0		0.0		0.0	0.0
Total Lost Time (s)	7.0		8.0		3.0	8.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Recall Mode	None		Max		None	Max
Act Effct Green (s)	12.3	25.5	37.8	60.5	48.1	43.1
Actuated g/C Ratio	0.17	0.36	0.54	0.86	0.68	0.61
v/c Ratio	0.57	0.09	0.66	0.05	0.05	0.57
Control Delay	34.9	4.8	18.3	0.8	4.8	11.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.9	4.8	18.3	0.8	4.8	11.3
LOS	C	A	B	A	A	B
Approach Delay	27.1		16.8			11.1
Approach LOS	C		B			B
90th %ile Green (s)	17.7		33.5		6.5	43.0
90th %ile Term Code	Gap		Hold		Gap	MaxR
70th %ile Green (s)	14.3		34.0		6.0	43.0
70th %ile Term Code	Gap		Hold		Min	MaxR
50th %ile Green (s)	12.2		34.0		6.0	43.0
50th %ile Term Code	Gap		Hold		Min	MaxR
30th %ile Green (s)	10.1		43.0		0.0	43.0
30th %ile Term Code	Gap		Hold		Skip	MaxR
10th %ile Green (s)	8.0		43.0		0.0	43.0
10th %ile Term Code	Min		Hold		Skip	MaxR
Queue Length 50th (ft)	64	0	211	0	2	147
Queue Length 95th (ft)	119	20	#436	6	10	287
Internal Link Dist (ft)	667		1168			1393
Turn Bay Length (ft)				250	150	
Base Capacity (vph)	455	709	998	1138	485	1139
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.08	0.66	0.05	0.04	0.57

Intersection Summary

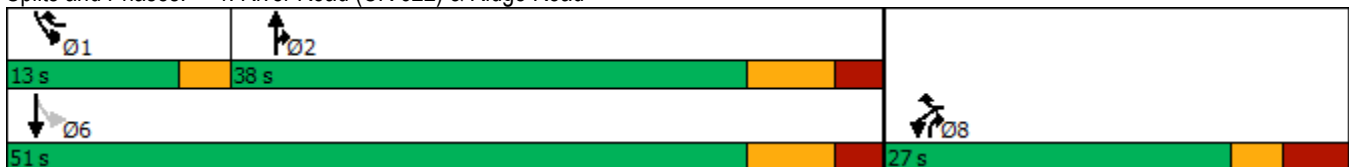
Area Type: Other  
Cycle Length: 78

Lanes, Volumes, Timings  
 4: River Road (CR 622) & Ridge Road

2021 No-Build Condition  
 PM Peak Hour













Actuated Cycle Length: 70.5  
 Natural Cycle: 60  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.66  
 Intersection Signal Delay: 15.8  
 Intersection LOS: B  
 Intersection Capacity Utilization 53.2%  
 ICU Level of Service A  
 Analysis Period (min) 15  
 90th %ile Actuated Cycle: 75.7  
 70th %ile Actuated Cycle: 72.3  
 50th %ile Actuated Cycle: 70.2  
 30th %ile Actuated Cycle: 68.1  
 10th %ile Actuated Cycle: 66  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 4: River Road (CR 622) & Ridge Road



Lanes, Volumes, Timings  
4: River Road (CR 622) & Ridge Road

2021 Build Condition  
PM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	150	53	626	55	20	646
Future Volume (vph)	150	53	626	55	20	646
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	15	15	12	13	12	12
Storage Length (ft)	0	0		250	150	
Storage Lanes	1	1		1	1	
Taper Length (ft)	25				60	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.850		0.850		
Fl <sub>t</sub> Protected	0.950				0.950	
Satd. Flow (prot)	1601	1630	1863	1255	1641	1845
Fl <sub>t</sub> Permitted	0.950				0.261	
Satd. Flow (perm)	1601	1630	1863	1255	451	1845
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		56		59		
Link Speed (mph)	30		35			35
Link Distance (ft)	747		1248			1165
Travel Time (s)	17.0		24.3			22.7
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	24%	9%	2%	33%	10%	3%
Adj. Flow (vph)	160	56	666	59	21	687
Shared Lane Traffic (%)						
Lane Group Flow (vph)	160	56	666	59	21	687
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	15		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	0.88	0.88	1.00	0.96	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	2	1	1	2
Detector Template	Left	Right	Thru	Right	Left	Thru
Leading Detector (ft)	20	20	100	20	20	100
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	6	20	20	6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)			94			94
Detector 2 Size(ft)			6			6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	pt+ov	NA	pt+ov	pm+pt	NA

Lanes, Volumes, Timings  
4: River Road (CR 622) & Ridge Road

2021 Build Condition  
PM Peak Hour



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Protected Phases	8	1 8	2	2 8	1	6
Permitted Phases					6	
Detector Phase	8	1 8	2	2 8	1	6
Switch Phase						
Minimum Initial (s)	8.0		12.0		6.0	21.0
Minimum Split (s)	15.0		20.0		9.0	29.0
Total Split (s)	27.0		38.0		13.0	51.0
Total Split (%)	34.6%		48.7%		16.7%	65.4%
Maximum Green (s)	20.0		30.0		10.0	43.0
Yellow Time (s)	3.0		5.0		3.0	5.0
All-Red Time (s)	4.0		3.0		0.0	3.0
Lost Time Adjust (s)	0.0		0.0		0.0	0.0
Total Lost Time (s)	7.0		8.0		3.0	8.0
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Recall Mode	None		Max		None	Max
Act Effct Green (s)	12.3	25.5	37.8	60.5	48.1	43.1
Actuated g/C Ratio	0.17	0.36	0.54	0.86	0.68	0.61
v/c Ratio	0.57	0.09	0.67	0.05	0.05	0.61
Control Delay	34.9	4.8	18.7	0.8	4.8	12.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.9	4.8	18.7	0.8	4.8	12.1
LOS	C	A	B	A	A	B
Approach Delay	27.1		17.3			11.9
Approach LOS	C		B			B
90th %ile Green (s)	17.7		33.5		6.5	43.0
90th %ile Term Code	Gap		Hold		Gap	MaxR
70th %ile Green (s)	14.3		34.0		6.0	43.0
70th %ile Term Code	Gap		Hold		Min	MaxR
50th %ile Green (s)	12.2		34.0		6.0	43.0
50th %ile Term Code	Gap		Hold		Min	MaxR
30th %ile Green (s)	10.1		43.0		0.0	43.0
30th %ile Term Code	Gap		Hold		Skip	MaxR
10th %ile Green (s)	8.0		43.0		0.0	43.0
10th %ile Term Code	Min		Hold		Skip	MaxR
Queue Length 50th (ft)	64	0	218	0	2	162
Queue Length 95th (ft)	119	20	#449	6	10	317
Internal Link Dist (ft)	667		1168			1085
Turn Bay Length (ft)				250	150	
Base Capacity (vph)	455	709	998	1138	477	1128
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.08	0.67	0.05	0.04	0.61

Intersection Summary

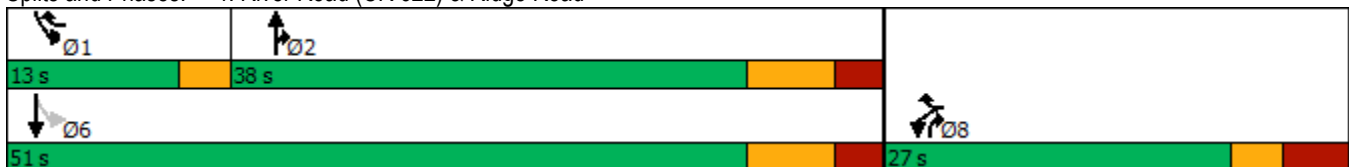
Area Type: Other  
Cycle Length: 78

Lanes, Volumes, Timings  
 4: River Road (CR 622) & Ridge Road

2021 Build Condition  
 PM Peak Hour

Actuated Cycle Length: 70.5  
 Natural Cycle: 60  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.67  
 Intersection Signal Delay: 16.2  
 Intersection LOS: B  
 Intersection Capacity Utilization 54.8%  
 ICU Level of Service A  
 Analysis Period (min) 15  
 90th %ile Actuated Cycle: 75.7  
 70th %ile Actuated Cycle: 72.3  
 50th %ile Actuated Cycle: 70.2  
 30th %ile Actuated Cycle: 68.1  
 10th %ile Actuated Cycle: 66  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 4: River Road (CR 622) & Ridge Road



Intersection						
Int Delay, s/veh	0					
Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	483	3	2	618	0	2
Future Vol, veh/h	483	3	2	618	0	2
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	95	95	95	95	95	95
Heavy Vehicles, %	2	0	0	1	0	0
Mvmt Flow	508	3	2	651	0	2

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	511	0	1165	510
Stage 1	-	-	-	-	510	-
Stage 2	-	-	-	-	655	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1065	-	217	567
Stage 1	-	-	-	-	607	-
Stage 2	-	-	-	-	521	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1065	-	216	567
Mov Cap-2 Maneuver	-	-	-	-	216	-
Stage 1	-	-	-	-	605	-
Stage 2	-	-	-	-	521	-

Approach	NB	SB	SW
HCM Control Delay, s	0	0	11.4
HCM LOS			B

Minor Lane/Major Mvmt	NBT	NBR	SBL	SBT	SWL	SWR
Capacity (veh/h)	-	-	1065	-	-	567
HCM Lane V/C Ratio	-	-	0.002	-	-	0.004
HCM Control Delay (s)	-	-	8.4	0	11.4	
HCM Lane LOS	-	-	A	A	B	
HCM 95th %tile Q(veh)	-	-	0	-	0	

Intersection						
Int Delay, s/veh	0					
Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	488	3	2	627	0	2
Future Vol, veh/h	488	3	2	627	0	2
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	95	95	95	95	95	95
Heavy Vehicles, %	4	0	0	5	0	0
Mvmt Flow	514	3	2	660	0	2

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	517	0	1180	516
Stage 1	-	-	-	-	516	-
Stage 2	-	-	-	-	664	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1059	-	212	563
Stage 1	-	-	-	-	603	-
Stage 2	-	-	-	-	516	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1059	-	211	563
Mov Cap-2 Maneuver	-	-	-	-	211	-
Stage 1	-	-	-	-	601	-
Stage 2	-	-	-	-	516	-

Approach	NB	SB	SW
HCM Control Delay, s	0	0	11.4
HCM LOS			B

Minor Lane/Major Mvmt	NBT	NBR	SBL	SBT	SWLn1
Capacity (veh/h)	-	-	1059	-	563
HCM Lane V/C Ratio	-	-	0.002	-	0.004
HCM Control Delay (s)	-	-	8.4	0	11.4
HCM Lane LOS	-	-	A	A	B
HCM 95th %tile Q(veh)	-	-	0	-	0



Intersection						
Int Delay, s/veh	0.1					
Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	706	1	1	603	2	4
Future Vol, veh/h	706	1	1	603	2	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	95	95	95	95	95	95
Heavy Vehicles, %	2	0	0	2	0	0
Mvmt Flow	743	1	1	635	2	4

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	744	0	1381	744
Stage 1	-	-	-	-	744	-
Stage 2	-	-	-	-	637	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	873	-	160	418
Stage 1	-	-	-	-	473	-
Stage 2	-	-	-	-	531	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	873	-	160	418
Mov Cap-2 Maneuver	-	-	-	-	160	-
Stage 1	-	-	-	-	472	-
Stage 2	-	-	-	-	531	-

Approach	NB	SB	SW
HCM Control Delay, s	0	0	18.6
HCM LOS			C

Minor Lane/Major Mvmt	NBT	NBR	SBL	SBT	SWLn1
Capacity (veh/h)	-	-	873	-	272
HCM Lane V/C Ratio	-	-	0.001	-	0.023
HCM Control Delay (s)	-	-	9.1	0	18.6
HCM Lane LOS	-	-	A	A	C
HCM 95th %tile Q(veh)	-	-	0	-	0.1

Intersection						
Int Delay, s/veh	0.1					
Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	719	1	1	607	2	4
Future Vol, veh/h	719	1	1	607	2	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	95	95	95	95	95	95
Heavy Vehicles, %	2	0	0	2	0	0
Mvmt Flow	757	1	1	639	2	4

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	758	0	1399	758
Stage 1	-	-	-	-	758	-
Stage 2	-	-	-	-	641	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	862	-	156	410
Stage 1	-	-	-	-	466	-
Stage 2	-	-	-	-	528	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	862	-	156	410
Mov Cap-2 Maneuver	-	-	-	-	156	-
Stage 1	-	-	-	-	465	-
Stage 2	-	-	-	-	528	-

Approach	NB	SB	SW
HCM Control Delay, s	0	0	18.9
HCM LOS			C

Minor Lane/Major Mvmt	NBT	NBR	SBL	SBT	SWLn1
Capacity (veh/h)	-	-	862	-	266
HCM Lane V/C Ratio	-	-	0.001	-	0.024
HCM Control Delay (s)	-	-	9.2	0	18.9
HCM Lane LOS	-	-	A	A	C
HCM 95th %tile Q(veh)	-	-	0	-	0.1

Intersection						
Int Delay, s/veh	1.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	R	T	R	L	T
Traffic Vol, veh/h	19	23	463	23	58	559
Future Vol, veh/h	19	23	463	23	58	559
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	Yield	-	None
Storage Length	0	-	-	175	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	74	9	4	52	22	3
Mvmt Flow	20	24	487	24	61	588

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1197	487	0	0	487
Stage 1	487	-	-	-	-
Stage 2	710	-	-	-	-
Critical Hdwy	7.14	6.29	-	-	4.32
Critical Hdwy Stg 1	6.14	-	-	-	-
Critical Hdwy Stg 2	6.14	-	-	-	-
Follow-up Hdwy	4.166	3.381	-	-	2.398
Pot Cap-1 Maneuver	149	567	-	-	980
Stage 1	493	-	-	-	-
Stage 2	378	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	135	567	-	-	980
Mov Cap-2 Maneuver	135	-	-	-	-
Stage 1	448	-	-	-	-
Stage 2	378	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	24.1	0	0.8
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	232	980
HCM Lane V/C Ratio	-	-	0.191	0.062
HCM Control Delay (s)	-	-	24.1	8.9
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.7	0.2

Intersection						
Int Delay, s/veh	1.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		↑	↑		↑
Traffic Vol, veh/h	30	28	463	42	67	559
Future Vol, veh/h	30	28	463	42	67	559
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	Yield	-	None
Storage Length	0	-	-	175	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	47	7	4	29	19	3
Mvmt Flow	32	29	487	44	71	588

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1217	487	0	0	487
Stage 1	487	-	-	-	-
Stage 2	730	-	-	-	-
Critical Hdwy	6.87	6.27	-	-	4.29
Critical Hdwy Stg 1	5.87	-	-	-	-
Critical Hdwy Stg 2	5.87	-	-	-	-
Follow-up Hdwy	3.923	3.363	-	-	2.371
Pot Cap-1 Maneuver	162	571	-	-	993
Stage 1	535	-	-	-	-
Stage 2	405	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	145	571	-	-	993
Mov Cap-2 Maneuver	145	-	-	-	-
Stage 1	478	-	-	-	-
Stage 2	405	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	26.6	0	1
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	227	993
HCM Lane V/C Ratio	-	-	0.269	0.071
HCM Control Delay (s)	-	-	26.6	8.9
HCM Lane LOS	-	-	D	A
HCM 95th %tile Q(veh)	-	-	1.1	0.2

Intersection						
Int Delay, s/veh	1.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		↑	↑		↑
Traffic Vol, veh/h	29	44	663	13	16	588
Future Vol, veh/h	29	44	663	13	16	588
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	Yield	-	None
Storage Length	0	-	-	175	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	24	2	2	62	19	1
Mvmt Flow	31	46	698	14	17	619

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1351	698	0	0	698
Stage 1	698	-	-	-	-
Stage 2	653	-	-	-	-
Critical Hdwy	6.64	6.22	-	-	4.29
Critical Hdwy Stg 1	5.64	-	-	-	-
Critical Hdwy Stg 2	5.64	-	-	-	-
Follow-up Hdwy	3.716	3.318	-	-	2.371
Pot Cap-1 Maneuver	149	440	-	-	824
Stage 1	455	-	-	-	-
Stage 2	479	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	144	440	-	-	824
Mov Cap-2 Maneuver	144	-	-	-	-
Stage 1	441	-	-	-	-
Stage 2	479	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	26.6	0	0.3
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	242	824
HCM Lane V/C Ratio	-	-	0.318	0.02
HCM Control Delay (s)	-	-	26.6	9.5
HCM Lane LOS	-	-	D	A
HCM 95th %tile Q(veh)	-	-	1.3	0.1

Intersection						
Int Delay, s/veh	3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		↑	↑		↑
Traffic Vol, veh/h	54	57	663	21	20	588
Future Vol, veh/h	54	57	663	21	20	588
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	Yield	-	None
Storage Length	0	-	-	175	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	13	2	2	38	15	1
Mvmt Flow	57	60	698	22	21	619

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1359	698	0	0	698
Stage 1	698	-	-	-	-
Stage 2	661	-	-	-	-
Critical Hdwy	6.53	6.22	-	-	4.25
Critical Hdwy Stg 1	5.53	-	-	-	-
Critical Hdwy Stg 2	5.53	-	-	-	-
Follow-up Hdwy	3.617	3.318	-	-	2.335
Pot Cap-1 Maneuver	155	440	-	-	841
Stage 1	474	-	-	-	-
Stage 2	493	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	149	440	-	-	841
Mov Cap-2 Maneuver	149	-	-	-	-
Stage 1	456	-	-	-	-
Stage 2	493	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	36.8	0	0.3
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	226	841
HCM Lane V/C Ratio	-	-	0.517	0.025
HCM Control Delay (s)	-	-	36.8	9.4
HCM Lane LOS	-	-	E	A
HCM 95th %tile Q(veh)	-	-	2.7	0.1

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	0	505	7	0	590
Future Vol, veh/h	4	0	505	7	0	590
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	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	100	0	6	100	0	5
Mvmt Flow	4	0	521	7	0	608

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1133	525	0	0	528	0
Stage 1	525	-	-	-	-	-
Stage 2	608	-	-	-	-	-
Critical Hdwy	7.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	6.4	-	-	-	-	-
Critical Hdwy Stg 2	6.4	-	-	-	-	-
Follow-up Hdwy	4.4	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	147	556	-	-	1049	-
Stage 1	436	-	-	-	-	-
Stage 2	393	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	147	556	-	-	1049	-
Mov Cap-2 Maneuver	147	-	-	-	-	-
Stage 1	436	-	-	-	-	-
Stage 2	393	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	30.2	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	147	-	1049
HCM Lane V/C Ratio	-	-	0.028	-	-
HCM Control Delay (s)	-	-	30.2	0	0
HCM Lane LOS	-	-	D	A	A
HCM 95th %tile Q(veh)	-	-	0.1	-	0

Intersection						
Int Delay, s/veh	0.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	0	685	3	0	642
Future Vol, veh/h	10	0	685	3	0	642
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, %	100	0	3	100	0	2
Mvmt Flow	10	0	706	3	0	662

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1370	708	0	0	709
Stage 1	708	-	-	-	-
Stage 2	662	-	-	-	-
Critical Hdwy	7.4	6.2	-	-	4.1
Critical Hdwy Stg 1	6.4	-	-	-	-
Critical Hdwy Stg 2	6.4	-	-	-	-
Follow-up Hdwy	4.4	3.3	-	-	2.2
Pot Cap-1 Maneuver	101	438	-	-	899
Stage 1	347	-	-	-	-
Stage 2	368	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	101	438	-	-	899
Mov Cap-2 Maneuver	101	-	-	-	-
Stage 1	347	-	-	-	-
Stage 2	368	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	44.7	0	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	101	899
HCM Lane V/C Ratio	-	-	0.102	-
HCM Control Delay (s)	-	-	44.7	0
HCM Lane LOS	-	-	E	A
HCM 95th %tile Q(veh)	-	-	0.3	0



Intersection						
Int Delay, s/veh	0.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	82	28	0	43	16	0
Future Vol, veh/h	82	28	0	43	16	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	30	0	0	37	0	0
Mvmt Flow	89	30	0	47	17	0

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	119	0	151
Stage 1	-	-	-	-	104
Stage 2	-	-	-	-	47
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1482	-	846
Stage 1	-	-	-	-	925
Stage 2	-	-	-	-	981
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1482	-	846
Mov Cap-2 Maneuver	-	-	-	-	846
Stage 1	-	-	-	-	925
Stage 2	-	-	-	-	981

Approach	EB	WB	NB
HCM Control Delay, s	0	0	9.3
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	846	-	-	1482	-
HCM Lane V/C Ratio	0.021	-	-	-	-
HCM Control Delay (s)	9.3	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection						
Int Delay, s/veh	2.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	30	12	0	72	38	0
Future Vol, veh/h	30	12	0	72	38	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	37	0	0	11	0	0
Mvmt Flow	33	13	0	78	41	0

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	46	0	118
Stage 1	-	-	-	-	40
Stage 2	-	-	-	-	78
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1575	-	883
Stage 1	-	-	-	-	988
Stage 2	-	-	-	-	950
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1575	-	883
Mov Cap-2 Maneuver	-	-	-	-	883
Stage 1	-	-	-	-	988
Stage 2	-	-	-	-	950

Approach	EB	WB	NB
HCM Control Delay, s	0	0	9.3
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	883	-	-	1575	-
HCM Lane V/C Ratio	0.047	-	-	-	-
HCM Control Delay (s)	9.3	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection						
Int Delay, s/veh	0.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	82	0	10	43	0	5
Future Vol, veh/h	82	0	10	43	0	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	92	92	92	92	92	92
Heavy Vehicles, %	30	0	0	37	0	0
Mvmt Flow	89	0	11	47	0	5

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	89	0	158 89
Stage 1	-	-	-	-	89 -
Stage 2	-	-	-	-	69 -
Critical Hdwy	-	-	4.1	-	6.4 6.2
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.4 -
Follow-up Hdwy	-	-	2.2	-	3.5 3.3
Pot Cap-1 Maneuver	-	-	1519	-	838 975
Stage 1	-	-	-	-	940 -
Stage 2	-	-	-	-	959 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1519	-	832 975
Mov Cap-2 Maneuver	-	-	-	-	832 -
Stage 1	-	-	-	-	933 -
Stage 2	-	-	-	-	959 -

Approach	EB	WB	NB
HCM Control Delay, s	0	1.4	8.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	975	-	-	1519	-
HCM Lane V/C Ratio	0.006	-	-	0.007	-
HCM Control Delay (s)	8.7	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection						
Int Delay, s/veh	1.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	30	0	4	72	0	12
Future Vol, veh/h	30	0	4	72	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	37	0	0	11	0	0
Mvmt Flow	33	0	4	78	0	13

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	33	0	119 33
Stage 1	-	-	-	-	33 -
Stage 2	-	-	-	-	86 -
Critical Hdwy	-	-	4.1	-	6.4 6.2
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.4 -
Follow-up Hdwy	-	-	2.2	-	3.5 3.3
Pot Cap-1 Maneuver	-	-	1592	-	882 1046
Stage 1	-	-	-	-	995 -
Stage 2	-	-	-	-	942 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1592	-	879 1046
Mov Cap-2 Maneuver	-	-	-	-	879 -
Stage 1	-	-	-	-	992 -
Stage 2	-	-	-	-	942 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	8.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1046	-	-	1592	-
HCM Lane V/C Ratio	0.012	-	-	0.003	-
HCM Control Delay (s)	8.5	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection						
Int Delay, s/veh	0.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	87	0	3	53	0	1
Future Vol, veh/h	87	0	3	53	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	29	0	100	30	0	100
Mvmt Flow	95	0	3	58	0	1

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	95	0	159
Stage 1	-	-	-	-	95
Stage 2	-	-	-	-	64
Critical Hdwy	-	-	5.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	3.1	-	3.5
Pot Cap-1 Maneuver	-	-	1057	-	837
Stage 1	-	-	-	-	934
Stage 2	-	-	-	-	964
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1057	-	834
Mov Cap-2 Maneuver	-	-	-	-	834
Stage 1	-	-	-	-	931
Stage 2	-	-	-	-	964

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	9.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	749	-	-	1057	-
HCM Lane V/C Ratio	0.001	-	-	0.003	-
HCM Control Delay (s)	9.8	-	-	8.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection						
Int Delay, s/veh	0.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	
Traffic Vol, veh/h	42	0	1	76	0	3
Future Vol, veh/h	42	0	1	76	0	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, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	26	0	100	11	0	100
Mvmt Flow	46	0	1	83	0	3

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	-	46	0	131
Stage 1	-	-	-	-	46
Stage 2	-	-	-	-	85
Critical Hdwy	-	-	5.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	3.1	-	3.5
Pot Cap-1 Maneuver	-	0	1110	-	868
Stage 1	-	0	-	-	982
Stage 2	-	0	-	-	943
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1110	-	867
Mov Cap-2 Maneuver	-	-	-	-	867
Stage 1	-	-	-	-	981
Stage 2	-	-	-	-	943

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	9.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	WBL	WBT
Capacity (veh/h)	803	-	1110	-
HCM Lane V/C Ratio	0.004	-	0.001	-
HCM Control Delay (s)	9.5	-	8.2	-
HCM Lane LOS	A	-	A	-
HCM 95th %tile Q(veh)	0	-	0	-