Engineers Planners Surveyors Landscape Architects Environmental Scientists

MASER CONSULTING P.A.

Traffic Impact Study

189 The Plaza

Block 5005, Lots 1, 2, & 11
Township of Teaneck
Bergen County, New Jersey

April 4, 2019

Prepared For

Solomon Builders
141 Ayers Court
Teaneck, NJ 07666

Prepared By

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MC Project No. 18008205A

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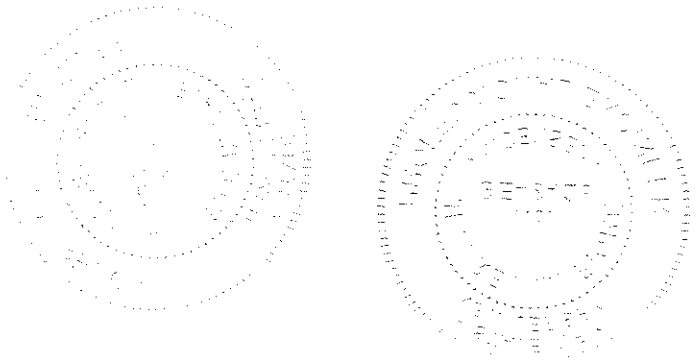

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I. INTRODUCTION

This Traffic Impact Study has been prepared for Solomon Builders ("Applicant") in association with a proposed 147-unit multi-family 15 story residential building within the Township of Teaneck, Bergen County, New Jersey. The subject property is located along The Plaza, between its intersections with Palisade Avenue and Queen Anne Road, and is designated as Block 5005, Lots 1, 2, and 11 on the Township of Teaneck tax maps. The site is currently developed with a mix of commercial uses. The subject property is located within the West Englewood Plaza District (B-1). A site location map is included as **Figure 1** in **Appendix A**.

The Applicant proposes to raze the existing buildings and develop a 147-unit multi-family 15 story residential building consisting of 56 1-bedroom units, 69 2-bedroom units, and 22 3-bedroom units. Access is proposed via a right-in/right-out only driveway along The Plaza. The proposed Site Plan is provided as **Figure 2** in **Appendix A**.

This study presents an evaluation of the current and future traffic conditions in the vicinity of the site. Specific elements included in this study are:

- An inventory of the roadway facilities in the vicinity of the project, including the existing physical and traffic operating characteristics;
- Determination of the Existing Conditions;
- Site Generated Trips described in the ITE Trip Generation Manual, 10th Edition;
- Trip Distribution and Assignment;
- Forecast of 2021 No-Build Traffic Volumes;
- Peak Hour Capacity Analysis for the 2021 No-Build Conditions;
- Forecast of the 2021 Build Traffic Volumes;
- Peak Hour Capacity Analysis for the 2021 Build Conditions;
- Site Access and Parking Assessment; and
- Summary and Conclusions.

II. EXISTING ROADWAY CONDITIONS

A field investigation was conducted adjacent to the project site to obtain an inventory of existing roadway conditions, posted traffic controls, adjacent land uses, lane configurations, and existing vehicular/pedestrian traffic patterns.

Roadways

Queen Anne Road is an urban minor arterial with a general north-south orientation under the Township of Teaneck jurisdiction. Within the project vicinity, the roadway supports one travel lane in each direction. The posted speed limit is 25 MPH.

Palisade Avenue is an urban major collector with a general north-south orientation under the Township of Teaneck jurisdiction. Within the project vicinity, the roadway supports one travel lane in each direction. The posted speed limit is 35 MPH.

The Plaza is a local road with a general east-west orientation under the Township of Teaneck jurisdiction. Within the project vicinity, the roadway supports one travel lane in each direction, which is separated by angled on-street parking in its median. There is no posted speed limit.

Unsignalized Intersections

Queen Anne Road with The Plaza/Ayers Court is an unsignalized four-way intersection with the eastbound and westbound approaches of The Plaza/Ayers Court under stop control. All intersection approaches provide one shared lane for all turning movements.

Palisade Avenue with The Plaza is an unsignalized T-intersection with the westbound approach of The Plaza under stop control. All intersection approaches provide one shared lane for all turning movements.

III. EXISTING TRAFFIC CONDITIONS

Traffic volume data for the roadway network adjacent to the subject property was obtained through manual turning movement counts (MTMC) conducted at the intersections of Queen Anne Road with The Plaza/Ayers Court and Palisade Avenue with The Plaza. The traffic counts were conducted on Tuesday, January 8, 2019 from 7:00 AM to 9:00 AM and from 4:00 PM to 6:00 PM. The following table details the data collection efforts and peak hours.

Table 1 – Data Collection Efforts and Established Peak Hours

Peak Period	Date Collected	Traffic Count Time Frame	Established Peak Hour
Weekday Morning	Tuesday, January 8, 2019	7:00 AM – 9:00 AM	8:00 AM – 9:00 AM
Weekday Evening		4:00 PM – 6:00 PM	5:00 PM – 6:00 PM

Figure 3, located in **Appendix A**, details the existing traffic volumes. The MTMC summary sheets are provided in **Appendix B**.

IV. TRIP GENERATION & DISTRIBUTION

Trip Generation

The ability of any roadway network to serve anticipated traffic volumes is measured by comparing peak hour traffic volumes to roadway capacities. Thus, it is essential to determine the hourly traffic volumes to be generated by The Project and add them to the No Build traffic volumes for the peak hours.

Trip generation estimates for the development of The Project were made utilizing data published under Land Use Code 222 – Multifamily Housing (High-Rise) in the Institute of Transportation Engineers' (ITE) publication, *Trip Generation, Tenth Edition*. This publication sets forth the trip generation rates based on traffic counts conducted at research sites throughout the county. **Table 2** details the anticipated trips for The Project.

Table 2 – Site Generated Trips

Land Use	Size	AM Peak			PM Peak		
		In	Out	Total	In	Out	Total
222 - Multifamily Housing (High-Rise)	147 units	13	41	54	36	23	59

As illustrated from the table above, the proposed development would generate a maximum of 59 peak hour trips. It is noted NJDOT and ITE define a significant increase in traffic as 100 or more peak hour trips added to the adjacent network. As the project would generate less than 100 trips during the weekday morning and evening peak hours, it can be considered not a significant increase in traffic on the adjacent roadway system. Thus, the impact to local roadways will be minimal.

Trip Distribution

Trip distribution methodology is developed based on a variety of factors. These factors include the existing travel patterns within the adjacent roadway network, adjacent land uses, proposed land use, development locations, driveway locations and the proximity of major arterials within the project vicinity.

The following trip distribution patterns were established upon a review of the existing roadway volumes, adjacent land uses, and anticipated travel patterns.

Table 3 – Trip Distribution

To/From	Distribution	
	Entering	**Exiting**
Queen Anne Road (North)	50%	25%
Queen Anne Road (South)	50%	25%
Palisade Avenue (North)	-	25%
Palisade Avenue (South)	-	25%
Total	**100%**	**100%**

The site generated trips were implemented into the roadway network based upon the anticipated distributions and are illustrated as **Figures 4 - 5** in **Appendix A**.

V. FUTURE TRAFFIC CONDITIONS

To determine the traffic impact of the development, an estimation of the traffic operational characteristics at the Build date without the construction of the project (or "No Build" condition) is made. The existing volumes have been projected to the Build year of 2021.

2021 Base Conditions

The NJDOT Annual Background Growth Rate Table recommends a rate of 1.75% for urban minor arterials, 1.00% for urban major collectors, and 1.00% for local roadways within Bergen County, therefore a conservative growth rate of 1.75% was utilized. This forecast accounts for general increases in local traffic volumes each year in the study area.

Adjacent Developments

Maser Consulting contacted the Township of Teaneck Planning Board to determine if there are any planned or approved developments in the vicinity of the project site. It was determined there are no planned developments that will affect the project.

2021 No Build Conditions

The 2021 No Build volumes equates to the 2021 Base volumes, as there are no planned developments within the vicinity of the site. The 2021 No Build volumes are presented in **Figure 6** of **Appendix A**.

2021 Build Conditions

The 2021 Build volumes were forecasted by adding the site generated traffic from the proposed development to the 2021 No Build traffic volumes within the roadway network. The 2021 Build Condition traffic volumes are summarized as **Figure 7** of **Appendix A**.

VI. HCM CAPACITY ANALYSIS

The peak hour traffic operations within the project vicinity were evaluated at the study intersections. The analyses were performed using *Synchro Trafficware*; a traffic analysis and simulation program. The results of these analyses provide Levels of Service (LOS), volume/capacity descriptions and average seconds of delay for the intersection movements.

The efficiency with which an intersection operates is a function of volume and capacity. The capacity of an intersection is the volume of vehicles it can accommodate during a given time period. LOS is a qualitative measure describing operational conditions within a traffic stream in terms of traffic characteristics such as freedom to maneuver, traffic interruption, comfort and convenience. Six LOS are defined for each type of facility with analysis procedures available. Levels of Service range from "A" through "F", with "A" representing excellent conditions with no delays and failure and deficient operations denoted by Level "F". The HCM LOS criteria for intersections are summarized in **Table 4.**

Table 4 – HCM: Unsignalized LOS/Delay Criteria

Level of Service	Average Control Delay (sec/veh)
	Unsignalized Intersection
A	< 10
B	> 10 – 15
C	> 15 – 25
D	> 25 – 35
E	> 35 – 50
F	> 50

The level of services for the 2021 No-Build and Build conditions are detailed in **Table 5**. The capacity analysis calculation worksheets are provided in **Appendix D.**

Table 5 – Level of Service Summary

Intersection	Lane Group		2021 No-Build				2021 Build			
			AM Peak		PM Peak		AM Peak		PM Peak	
			LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
Queen Anne Road (NB/SB) with The Plaza (EB) & Ayers Court (WB)	EB	L/T/R	D	32.5	F	53.3	E	39.6	F	74.7
	WB	L/T/R	C	23.9	D	27.9	D	25.3	D	31.7
	NB	L	A	8.9	A	8.2	A	9.0	A	8.3
	SB	L	A	8.2	A	8.7	A	8.2	A	8.7
Palisade Avenue (NB/SB) with The Plaza (WB)	WB	L/R	C	15.3	C	15.9	C	15.7	C	16.2
	SB	L	A	8.2	A	8.2	A	8.2	A	8.2
Site Driveway (SB) with The Plaza (WB)	SB	R	-	-	-	-	A	9.1	A	9.0

The following are discussions pertaining to each of the intersections analyzed. All capacity analysis calculation worksheets are appended. It should be noted the existing percentage of trucks and peak hour factors were used in all analysis. The following is a summary of the findings for each location.

Queen Anne Road with The Plaza/Ayers Court

2021 No-Build Analysis

Under the No-Build condition, all intersection movements will operate at Levels of Service "D" or better with the exception of the eastbound approach which will exceed capacity during the weekday evening peak hour.

2021 Build Analysis

Under the Build Condition, all intersection movements will continue to operate at or near No Build levels of service. Additionally, the following table illustrates the impact of the site generated trips on the total volume at the intersection.

Table 6 – Queen Anne Road with The Plaza/Ayers Court Intersection Volume Comparison

Peak Period	2021 No Build Volume	Site Generated Volume	2021 Build Volume	Percent Impact
Weekday Morning Peak Hour	1,050	34	1,084	3.2%
Weekday Evening Peak Hour	1,136	48	1,184	4.2%

As illustrated from the table above, the site generated traffic is approximately 4.2% of the overall traffic at the intersection of Queen Anne Road with The Plaza/Ayers Court, which is approximately 1 vehicle every 1 minute and 15 seconds; therefore, the impact of the site generated traffic at the intersection is negligible.

Palisade Avenue with The Plaza

2021 No-Build Analysis

Under the No-Build condition, all intersection movements will operate at Levels of Service "C" or better during both peak hours studied.

2021 Build Analysis

Under the Build Condition, all intersection movements will continue to operate at or near No Build levels of service.

Site Driveway with The Plaza

2021 Build Analysis

Under the Build condition, all intersection movements will operate at Levels of Service "A" during both peak hours studied with calculated 95th percentile queue lengths of less than one (1) vehicle on the site driveway approach, which can be accommodated within the layout of the site.

VII. SITE ACCESS AND PARKING ASSESSMENT

Access to the site is proposed via a right-in/right-out only driveway along The Plaza, which provides access to a structed parking garage. The layout of the parking structure provides sufficient circulation for vehicles to maneuver efficiently.

The Township of Teaneck Ordinance, section 33-28, sets forth a parking requirement of 0.8 spaces per 1-bedroom dwelling unit, 1.3 spaces per 2-bedroom dwelling unit, and 1.9 spaces per 3-bedroom dwelling unit, which is equivalent to the Residential Site Improvements Standards (RSIS) high-rise parking requirements. For the proposed 56 1-bedroom dwelling units, 69 2-bedroom dwelling units, and 22 3-bedroom dwelling units this equates to a parking requirement of 176 spaces. It is proposed to provide 176 spaces, thus satisfying the Ordinance requirements.

VIII. SUMMARY AND CONCLUSIONS

This Traffic Impact Study evaluated a proposed multi-family residential building within the Township of Teaneck, Bergen County, New Jersey. The findings of the Traffic Impact Study are summarized as follows:

1. The Applicant proposes to raze the existing buildings and develop a 147-unit multi-family high rise residential building.

2. Access to the sites is proposed via a right-in/right-out only driveway along The Plaza, which provides access to a structured parking garage.

3. The intersection of Queen Anne Road with The Plaza/Ayers Court will continue to operate at or near No-Build levels of service. The site generated traffic is equivalent to approximately 1 trip every 1 minute and 15 seconds at the intersection of Queen Anne Road with The Plaza/Ayers Court; therefore, the impact of the site generated traffic at the intersection is negligible.

4. The intersection of Palisade Avenue with The Plaza will continue to operate at or near No-Build levels of service.

5. The proposed site driveway along The Plaza will operate at Level of Service "A" during both peak hours studied.

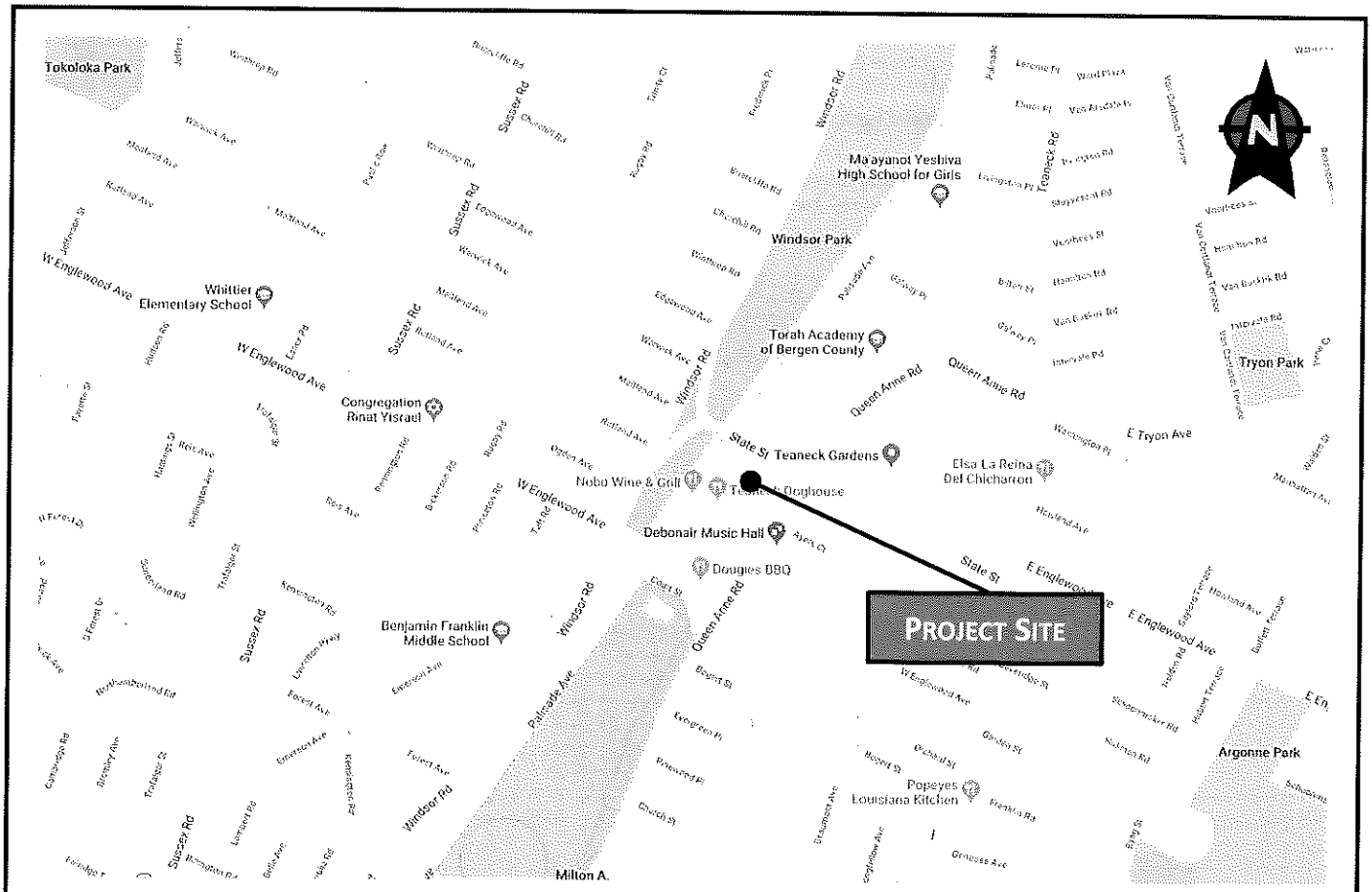
6. The Township of Teaneck Ordinance requires 176 parking spaces for the proposed development. It is proposed to provide 176 parking spaces, satisfying the Ordinance requirement.

189 THE PLAZA

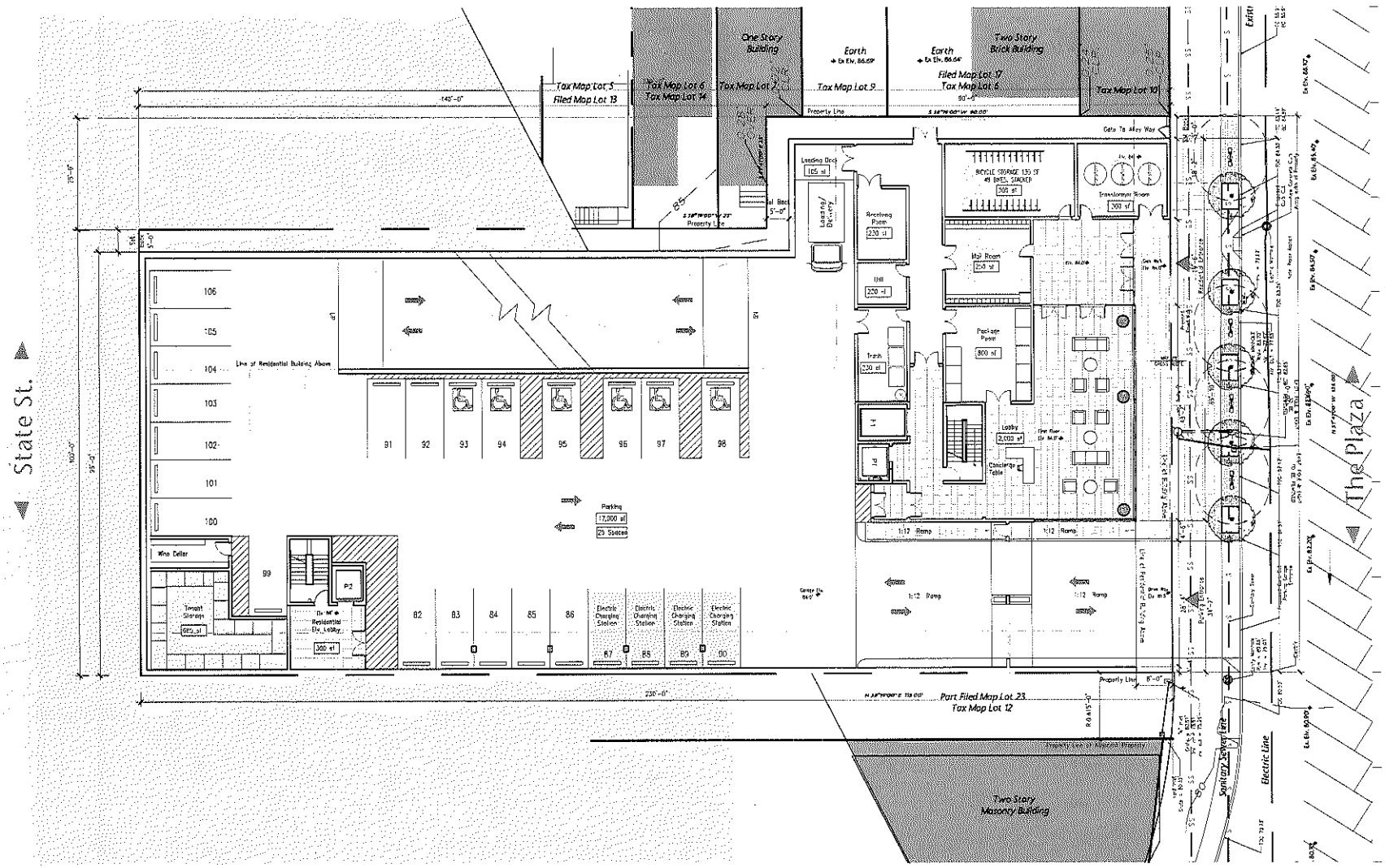
TRAFFIC IMPACT STUDY

APPENDIX A

TRAFFIC FIGURES



18008205A	189 The Plaza	Figure 1
	Township of Teaneck, Bergen County, New Jersey	Site Location Map



P1 First Floor/ Site Plan / Utility Plan
Scale: 3/32"= 1'-0"

REVISIONS		
NO.	DESCRIPTIONS	DATE
1	ZONING BOARD OF ADJUSTMENT	01/29/2019
NO.	TO WHOM ISSUED	DATE

ISSUES

189 The Plaza LLC
141 Ayers Court, Suite 1A
Teaneck, New Jersey 07666
(201) 308-5770
OWNERS

189 The Plaza

189 The Plaza
Teaneck, NJ 07030
Block 5005, Lots 1, 2, & 11

n a s t a s i
a r c h i t e c t s

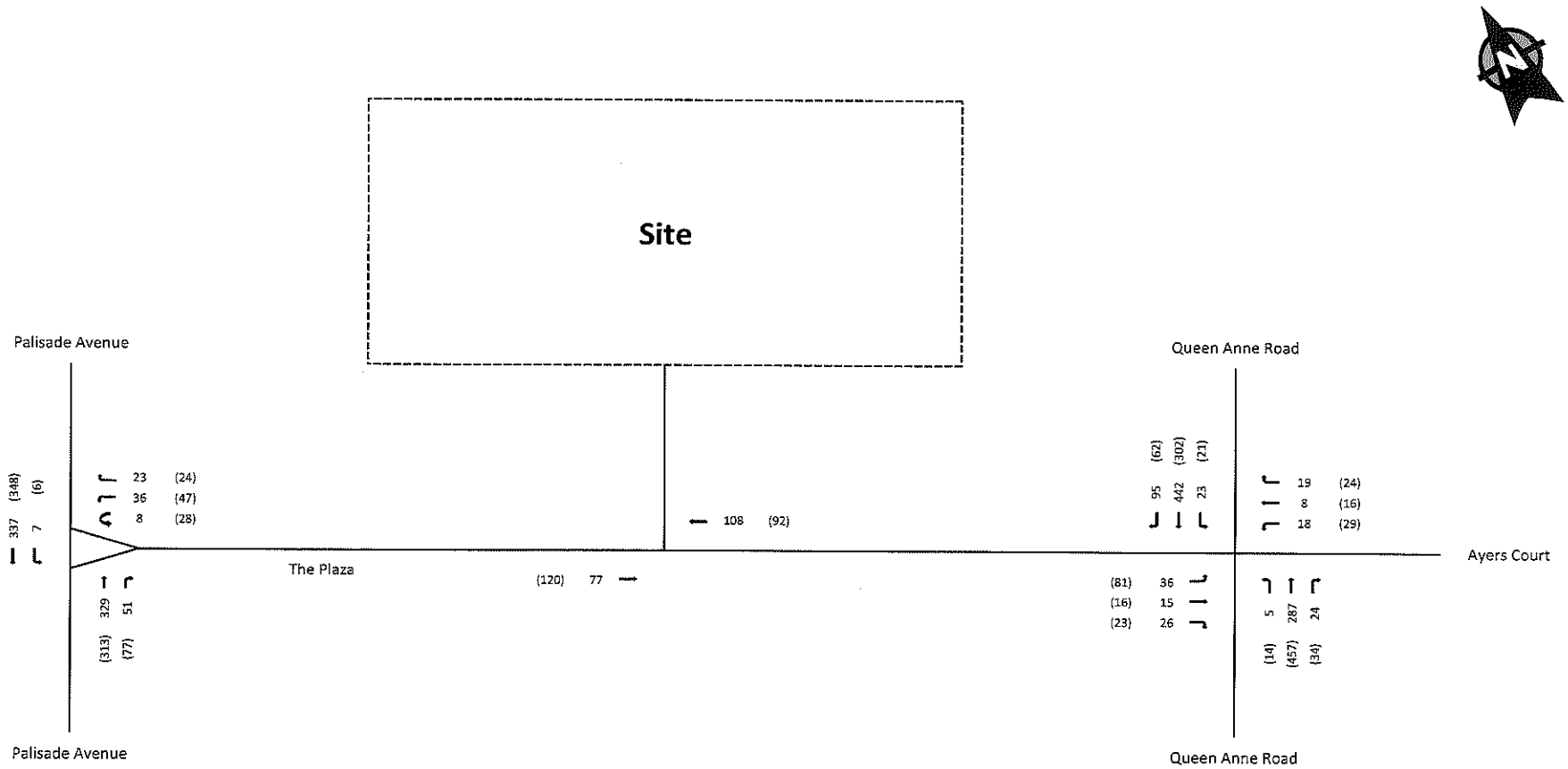
321 Newark Street
Hoboken, NJ 07030
Tel: 201.653.2577
Fax: 201.653.2642
NJ License #AI11560
NY License #021574

Site Plan
Utility Plan
The Plaza

Date:	January 9, 2019
Scale:	As Noted
Drawn:	GT
Checked:	R
Revisions:	FD

N

A101



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189 The Plaza

MC Project No. 18008205A

Township of Teaneck, Bergen County, New Jersey

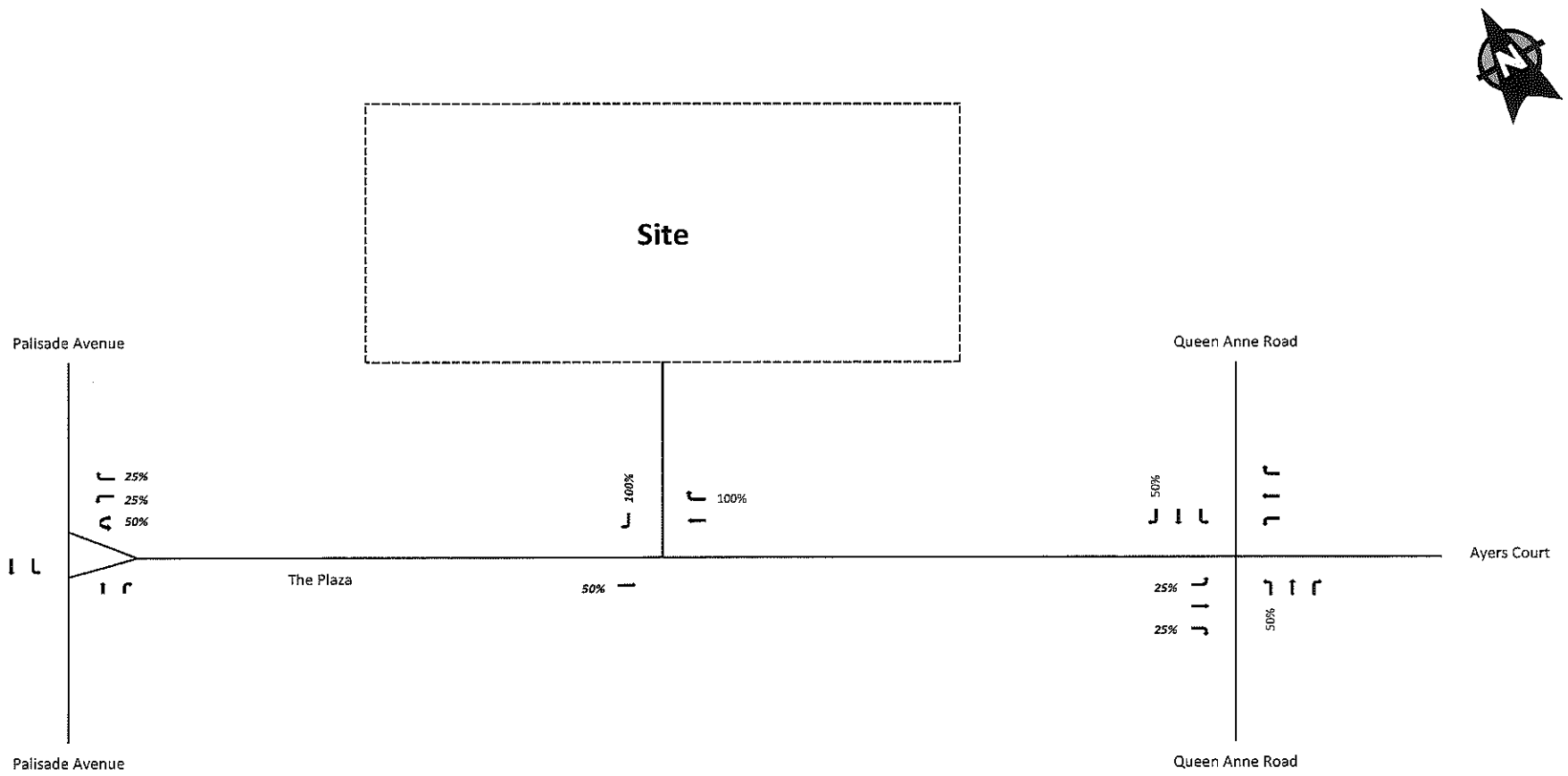
Legend

AM Peak Hour: ###
PM Peak Hour: (###)
Thru Movement:
Turning Movement:

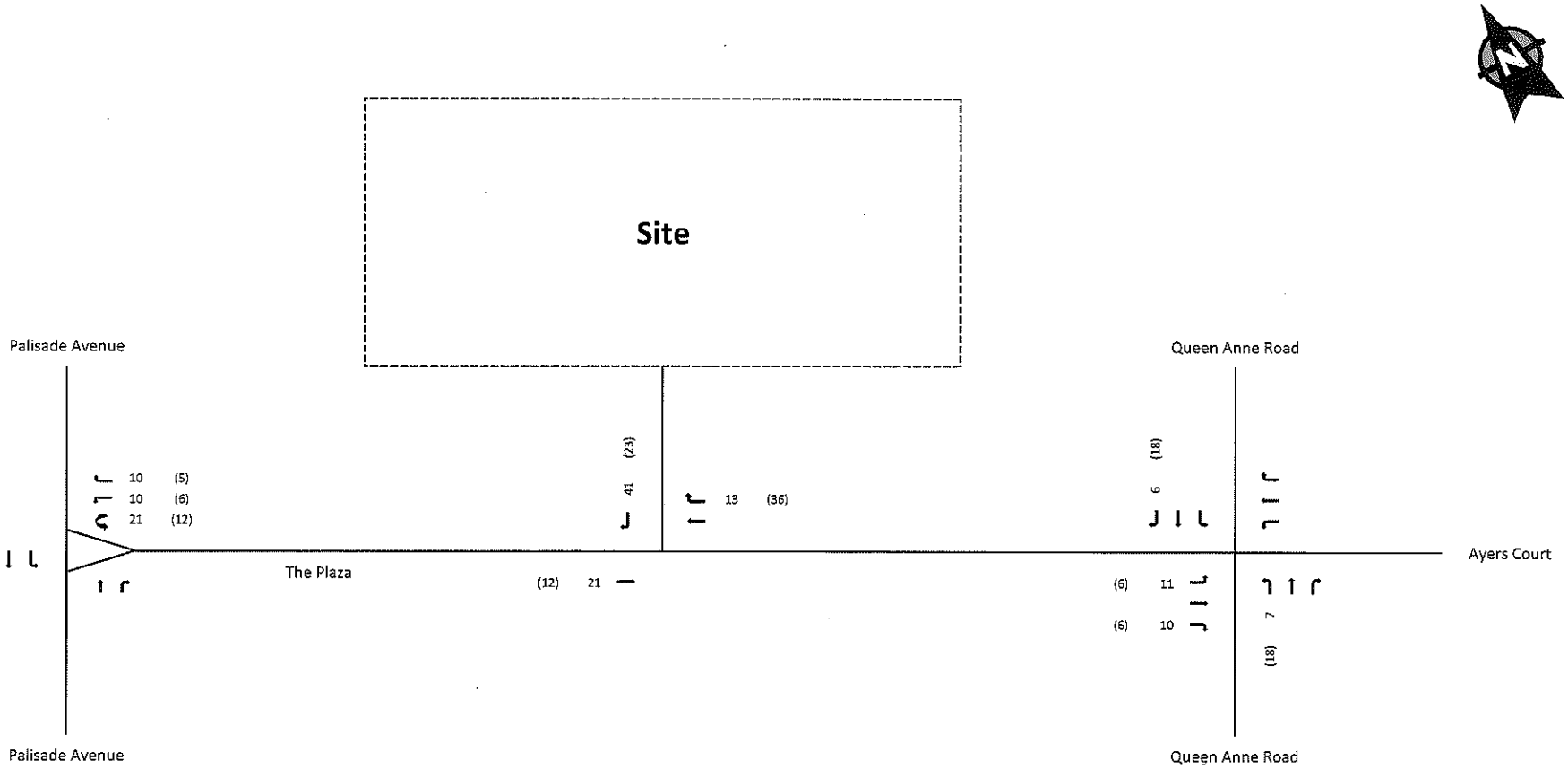
Figure 3

2018 Existing Volumes

AM & PM Peak Hours



MASER CONSULTING P.A.	189 The Plaza MC Project No. 18008205A Township of Teaneck, Bergen County, New Jersey	**Legend** Entering XXX Thru Movement: Exiting XXX Turning Movement:	**Figure 4** **Trip Distribution** **AM & PM Peak Hours**



PEAK HOUR	ENTER	EXIT	TOTAL
AM	13	41	54
PM	36	23	59

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189 The Plaza

MC Project No. 18008205A

Township of Teaneck, Bergen County, New Jersey

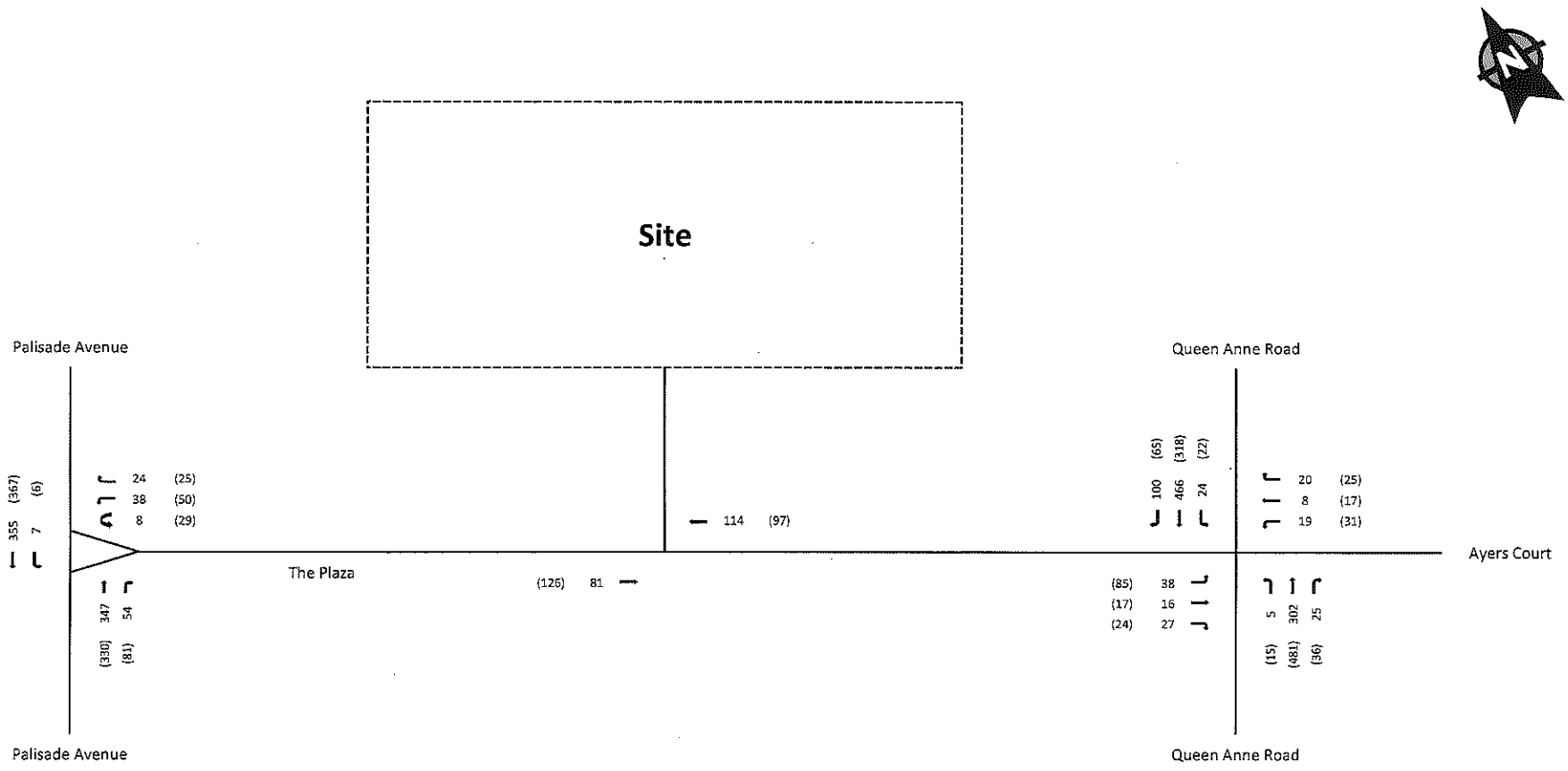
Legend

AM Peak Hour: ###
PM Peak Hour: (###)
Thru Movement:
Turning Movement:

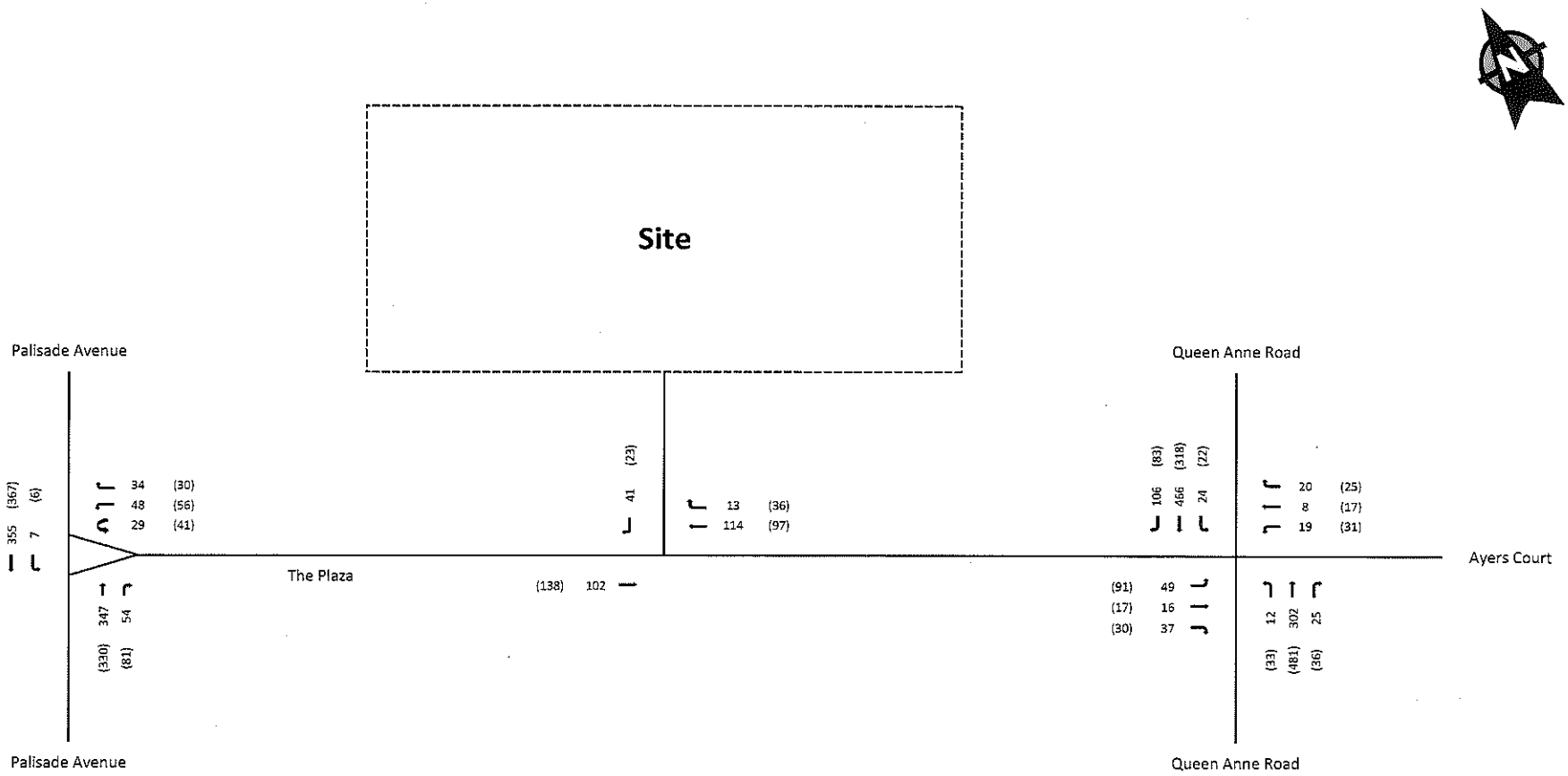
Figure 5

Site Generated Trips

AM & PM Peak Hours



MASER CONSULTING P.A.	189 The Plaza MC Project No. 18008205A Township of Teaneck, Bergen County, New Jersey	**Legend** AM Peak Hour: ### PM Peak Hour: (###) Thru Movement: Turning Movement:	**Figure 6** **2021 No Build Conditions** **AM & PM Peak Hours**



MASER CONSULTING P.A.	189 The Plaza MC Project No. 18008205A Township of Teaneck, Bergen County, New Jersey	**Legend** AM Peak Hour: ### PM Peak Hour: (###) Thru Movement: Turning Movement:	**Figure 7** **2021 Build Conditions** **AM & PM Peak Hours**

189 THE PLAZA

TRAFFIC IMPACT STUDY

APPENDIX B

TRAFFIC COUNT DATA

TRI-STATE TRAFFIC DATA

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184 Baker Rd

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

Teaneck, NJ
Queen Ann Rd & The Plaza/Ayers Court
Tuesday, January 8, 2019
Location: 40.902116, -74.00475

Count Name: Queen Ana Rd../The Plaza/Ayers Court
Site Code:
Start Date: 01/08/2019
Page No: 1

Turning Movement Data

Start Time	The Plaza Eastbound						Ayers Court Westbound						Queen Ann Rd. Northbound						The Plaza 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	
7:00 AM	6	3	2	0	0	11	2	2	6	0	2	10	1	27	5	0	0	33	6	74	4	1	7	85	139
7:15 AM	6	2	2	0	4	10	2	0	2	0	1	4	0	57	4	0	3	61	1	85	8	0	11	94	169
7:30 AM	6	1	8	0	5	15	6	0	6	0	4	12	0	73	10	0	1	83	3	86	14	0	10	103	213
7:45 AM	9	4	11	0	2	24	2	1	3	0	6	6	1	78	6	0	1	85	5	105	17	0	7	127	242
Hourly Total	27	10	23	0	11	60	12	3	17	0	13	32	2	235	25	0	5	262	15	350	43	1	35	409	763
8:00 AM	7	3	4	0	2	14	1	0	3	0	2	4	1	79	5	0	1	85	9	140	33	0	11	182	285
8:15 AM	12	3	7	0	0	22	7	1	6	0	3	14	0	93	9	0	2	102	5	121	36	0	5	162	300
8:30 AM	6	4	9	0	2	19	8	2	5	0	4	15	3	63	6	0	1	72	5	96	9	0	11	110	216
8:45 AM	11	5	6	0	6	22	2	5	5	0	6	12	1	52	4	0	0	57	4	85	17	0	14	106	197
Hourly Total	36	15	26	0	10	77	18	8	19	0	15	45	5	287	24	0	4	316	23	442	95	0	41	560	998
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	17	4	9	0	7	30	5	0	6	0	2	11	4	98	4	0	0	106	1	78	18	0	11	97	244
4:15 PM	13	3	8	0	10	24	2	3	9	0	8	14	3	110	6	0	1	119	3	79	18	0	5	100	257
4:30 PM	14	2	5	0	1	21	5	5	9	0	4	19	2	109	6	0	0	117	8	65	20	0	13	93	250
4:45 PM	14	3	6	0	9	23	3	0	6	1	6	10	2	97	6	0	0	105	8	83	14	2	8	107	245
Hourly Total	58	12	28	0	27	98	15	8	30	1	20	54	11	414	22	0	1	447	20	305	70	2	37	397	996
5:00 PM	15	1	8	0	8	24	7	3	12	1	4	23	3	108	10	0	0	121	8	80	6	1	4	95	263
5:15 PM	15	3	5	0	3	23	5	1	3	1	3	10	4	134	6	0	0	144	3	61	13	0	7	77	254
5:30 PM	13	4	4	1	7	22	3	4	1	5	11	13	4	108	8	0	2	120	6	79	20	0	6	105	260
5:45 PM	32	8	6	5	17	51	5	8	8	2	3	23	3	107	10	0	0	120	3	82	23	0	16	108	302
Hourly Total	75	16	23	6	35	120	20	16	24	9	21	69	14	457	34	0	2	505	20	302	62	1	33	385	1079
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	196	53	100	6	83	355	65	35	90	10	69	200	32	1393	105	0	12	1530	78	1399	270	4	146	1751	3836
Approach %	55.2	14.9	28.2	1.7	-	-	32.5	17.5	45.0	5.0	-	-	2.1	91.0	6.9	0.0	-	-	4.5	79.9	15.4	0.2	-	-	-
Total %	5.1	1.4	2.6	0.2	-	9.3	1.7	0.9	2.3	0.3	-	5.2	0.8	36.3	2.7	0.0	-	39.9	2.0	36.5	7.0	0.1	-	45.6	-
Lights	193	53	98	6	-	350	64	35	87	10	-	196	32	1346	100	0	-	1478	76	1336	269	4	-	1685	3709
% Lights	98.5	100.0	98.0	100.0	-	98.6	98.5	100.0	96.7	100.0	-	98.0	100.0	96.6	95.2	-	-	96.6	97.4	95.5	99.6	100.0	-	96.2	96.7
Buses	2	0	1	0	-	3	1	0	3	0	-	4	0	36	5	0	-	41	2	45	0	0	-	47	95
% Buses	1.0	0.0	1.0	0.0	-	0.8	1.5	0.0	3.3	0.0	-	2.0	0.0	2.6	4.8	-	-	2.7	2.6	3.2	0.0	0.0	-	2.7	2.5
Trucks	1	0	1	0	-	2	0	0	0	0	-	0	0	11	0	0	-	11	0	18	1	0	-	19	32
% Trucks	0.5	0.0	1.0	0.0	-	0.6	0.0	0.0	0.0	0.0	-	0.0	0.0	0.8	0.0	-	-	0.7	0.0	1.3	0.4	0.0	-	1.1	0.8
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	2.9	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	83	-	-	-	-	-	67	-	-	-	-	-	12	-	-	-	-	-	146	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	97.1	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

TRI-STATE TRAFFIC DATA

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Teaneck, NJ
Queen Ann Rd & The Plaza/Ayers Court
Tuesday, January 8, 2019
Location: 40.902116, -74.00475

Count Name: Queen Ana Rd../The Plaza/Ayers Court
Site Code:
Start Date: 01/08/2019

Turning Movement Peak Hour Data (8:00 AM)

Start Time	The Plaza Eastbound						Ayers Court Westbound						Queen Ann Rd. Northbound						The Plaza 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	
8:00 AM	7	3	4	0	2	14	1	0	3	0	2	4	1	79	5	0	1	85	9	140	33	0	11	182	285
8:15 AM	12	3	7	0	0	22	7	1	6	0	3	14	0	93	9	0	2	102	5	121	36	0	5	162	300
8:30 AM	6	4	9	0	2	19	8	2	5	0	4	15	3	63	6	0	1	72	5	96	9	0	11	110	216
8:45 AM	11	5	6	0	6	22	2	5	5	0	6	12	1	52	4	0	0	57	4	85	17	0	14	106	197
Total	36	15	26	0	10	77	18	8	19	0	15	45	5	287	24	0	4	316	23	442	95	0	41	560	998
Approach %	46.8	19.5	33.8	0.0	-	-	40.0	17.8	42.2	0.0	-	-	1.6	90.8	7.6	0.0	-	-	4.1	78.9	17.0	0.0	-	-	-
Total %	3.6	1.5	2.6	0.0	-	7.7	1.8	0.8	1.9	0.0	-	4.5	0.5	28.8	2.4	0.0	-	31.7	2.3	44.3	9.5	0.0	-	56.1	-
PHF	0.750	0.750	0.722	0.000	-	0.875	0.563	0.400	0.792	0.000	-	0.750	0.417	0.772	0.667	0.000	-	0.775	0.639	0.789	0.660	0.000	-	0.769	0.832
Lights	34	15	25	0	-	74	18	8	17	0	-	43	5	273	24	0	-	302	22	417	94	0	-	533	952
% Lights	94.4	100.0	96.2	-	-	96.1	100.0	100.0	89.5	-	-	95.6	100.0	95.1	100.0	-	-	95.6	95.7	94.3	98.9	-	-	95.2	95.4
Buses	2	0	0	0	-	2	0	0	2	0	-	2	0	10	0	0	-	10	1	19	0	0	-	20	34
% Buses	5.6	0.0	0.0	-	-	2.6	0.0	0.0	10.5	-	-	4.4	0.0	3.5	0.0	-	-	3.2	4.3	4.3	0.0	-	-	3.6	3.4
Trucks	0	0	1	0	-	1	0	0	0	0	-	0	0	4	0	0	-	4	0	6	1	0	-	7	12
% Trucks	0.0	0.0	3.8	-	-	1.3	0.0	0.0	0.0	-	-	0.0	0.0	1.4	0.0	-	-	1.3	0.0	1.4	1.1	-	-	1.3	1.2
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	6.7	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	10	-	-	-	-	-	14	-	-	-	-	-	4	-	-	-	-	-	41	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	93.3	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

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Teaneck, NJ
Queen Ann Rd & The Plaza/Ayers Court
Tuesday, January 8, 2019
Location: 40.902116, -74.00475

Count Name: Queen Ana Rd../The Plaza/Ayers Court
Site Code:
Start Date: 01/08/2019

Turning Movement Peak Hour Data (5:00 PM)

Start Time	The Plaza Eastbound						Ayers Court Westbound						Queen Ann Rd. Northbound						The Plaza 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	
5:00 PM	15	1	8	0	8	24	7	3	12	1	4	23	3	108	10	0	0	121	8	80	6	1	4	95	263
5:15 PM	15	3	5	0	3	23	5	1	3	1	3	10	4	134	6	0	0	144	3	61	13	0	7	77	254
5:30 PM	13	4	4	1	7	22	3	4	1	5	11	13	4	108	8	0	2	120	6	79	20	0	6	105	260
5:45 PM	32	8	6	5	17	51	5	8	8	2	3	23	3	107	10	0	0	120	3	82	23	0	16	108	302
Total	75	16	23	6	35	120	20	16	24	9	21	69	14	457	34	0	2	505	20	302	62	1	33	385	1079
Approach %	62.5	13.3	19.2	5.0	-	-	29.0	23.2	34.8	13.0	-	-	2.8	90.5	6.7	0.0	-	-	5.2	78.4	16.1	0.3	-	-	-
Total %	7.0	1.5	2.1	0.6	-	11.1	1.9	1.5	2.2	0.8	-	6.4	1.3	42.4	3.2	0.0	-	46.8	1.9	28.0	5.7	0.1	-	35.7	-
PHF	0.586	0.500	0.719	0.300	-	0.588	0.714	0.500	0.500	0.450	-	0.750	0.875	0.853	0.850	0.000	-	0.877	0.625	0.921	0.674	0.250	-	0.891	0.893
Lights	75	16	23	6	-	120	20	16	23	9	-	68	14	452	34	0	-	500	20	296	62	1	-	379	1067
% Lights	100.0	100.0	100.0	100.0	-	100.0	100.0	100.0	95.8	100.0	-	98.6	100.0	98.9	100.0	-	-	99.0	100.0	98.0	100.0	100.0	-	98.4	98.9
Buses	0	0	0	0	-	0	0	0	1	0	-	1	0	4	0	0	-	4	0	5	0	0	-	5	10
% Buses	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	4.2	0.0	-	1.4	0.0	0.9	0.0	-	-	0.8	0.0	1.7	0.0	0.0	-	1.3	0.9
Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	0	1	0	0	-	1	2
% Trucks	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.2	0.0	-	-	0.2	0.0	0.3	0.0	0.0	-	0.3	0.2
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	35	-	-	-	-	-	21	-	-	-	-	-	2	-	-	-	-	-	33	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

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Teaneck, NJ
Palisade Ave & The Plaza
Tuesday, January 8, 2019
Location: 40.902705, -74.006097

Count Name: Palisade Ave./The Plaza
Site Code:
Start Date: 01/08/2019
Page No: 1

Turning Movement Data

Start Time	The Plaza Westbound					Palisade Ave. Northbound					Palisade Ave. Southbound					Int. Total
	Left	Right	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	
7:00 AM	6	0	0	0	6	14	3	0	0	17	4	53	0	0	57	80
7:15 AM	2	0	3	0	5	13	3	0	0	16	2	51	0	0	53	74
7:30 AM	6	3	2	1	11	31	5	0	0	36	5	84	0	0	89	136
7:45 AM	9	2	1	0	12	40	9	0	0	49	3	95	0	0	98	159
Hourly Total	23	5	6	1	34	98	20	0	0	118	14	283	0	0	297	449
8:00 AM	9	0	1	5	10	53	14	1	0	68	2	96	0	0	98	176
8:15 AM	10	1	2	5	13	75	19	0	0	94	3	108	0	0	111	218
8:30 AM	4	11	4	1	19	90	4	0	0	94	1	79	0	0	80	193
8:45 AM	13	11	1	0	25	110	14	0	0	124	1	54	0	0	55	204
Hourly Total	36	23	8	11	67	328	51	1	0	380	7	337	0	0	344	791
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	6	9	2	1	17	73	15	0	0	88	3	66	0	0	69	174
4:15 PM	10	15	2	2	27	61	11	0	0	72	2	82	0	0	84	183
4:30 PM	7	6	1	3	14	61	14	0	0	75	2	89	0	0	91	180
4:45 PM	6	4	2	2	12	67	11	0	0	78	0	73	0	0	73	163
Hourly Total	29	34	7	8	70	262	51	0	0	313	7	310	0	0	317	700
5:00 PM	11	4	1	1	16	86	15	0	0	101	2	74	0	0	76	193
5:15 PM	5	3	3	1	11	86	15	0	0	101	1	117	0	0	118	230
5:30 PM	16	10	9	1	35	72	21	0	0	93	3	91	0	0	94	222
5:45 PM	15	7	15	2	37	69	26	0	0	95	0	66	0	0	66	198
Hourly Total	47	24	28	5	99	313	77	0	0	390	6	348	0	0	354	843
Grand Total	135	86	49	25	270	1001	199	1	0	1201	34	1278	0	0	1312	2783
Approach %	50.0	31.9	18.1	-	-	83.3	16.6	0.1	-	-	2.6	97.4	0.0	-	-	-
Total %	4.9	3.1	1.8	-	9.7	36.0	7.2	0.0	-	43.2	1.2	45.9	0.0	-	47.1	-
Lights	134	86	49	-	269	960	195	1	-	1156	33	1233	0	-	1266	2691
% Lights	99.3	100.0	100.0	-	99.6	95.9	98.0	100.0	-	96.3	97.1	96.5	-	-	96.5	96.7
Buses	0	0	0	-	0	25	3	0	-	28	0	32	0	-	32	60
% Buses	0.0	0.0	0.0	-	0.0	2.5	1.5	0.0	-	2.3	0.0	2.5	-	-	2.4	2.2
Trucks	1	0	0	-	1	16	1	0	-	17	1	13	0	-	14	32
% Trucks	0.7	0.0	0.0	-	0.4	1.6	0.5	0.0	-	1.4	2.9	1.0	-	-	1.1	1.1
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	25	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-

Turning Movement Peak Hour Data (8:00 AM)

Start Time	The Plaza Westbound					Palisade Ave. Northbound					Palisade Ave. Southbound					
	Left	Right	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Int. Total
8:00 AM	9	0	1	5	10	53	14	1	0	68	2	96	0	0	98	176
8:15 AM	10	1	2	5	13	75	19	0	0	94	3	108	0	0	111	218
8:30 AM	4	11	4	1	19	90	4	0	0	94	1	79	0	0	80	193
8:45 AM	13	11	1	0	25	110	14	0	0	124	1	54	0	0	55	204
Total	36	23	8	11	67	328	51	1	0	380	7	337	0	0	344	791
Approach %	53.7	34.3	11.9	-	-	86.3	13.4	0.3	-	-	2.0	98.0	0.0	-	-	-
Total %	4.6	2.9	1.0	-	8.5	41.5	6.4	0.1	-	48.0	0.9	42.6	0.0	-	43.5	-
PHF	0.692	0.523	0.500	-	0.670	0.745	0.671	0.250	-	0.766	0.583	0.780	0.000	-	0.775	0.907
Lights	35	23	8	-	66	314	48	1	-	363	7	321	0	-	328	757
% Lights	97.2	100.0	100.0	-	98.5	95.7	94.1	100.0	-	95.5	100.0	95.3	-	-	95.3	95.7
Buses	0	0	0	-	0	10	2	0	-	12	0	12	0	-	12	24
% Buses	0.0	0.0	0.0	-	0.0	3.0	3.9	0.0	-	3.2	0.0	3.6	-	-	3.5	3.0
Trucks	1	0	0	-	1	4	1	0	-	5	0	4	0	-	4	10
% Trucks	2.8	0.0	0.0	-	1.5	1.2	2.0	0.0	-	1.3	0.0	1.2	-	-	1.2	1.3
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	11	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-

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Palisade Ave & The Plaza
Tuesday, January 8, 2019
Location: 40.902705, -74.006097

Count Name: Palisade Ave./The Plaza
Site Code:
Start Date: 01/08/2019

Turning Movement Peak Hour Data (5:00 PM)

Start Time	The Plaza Westbound					Palisade Ave. Northbound					Palisade Ave. Southbound					Int. Total
	Left	Right	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	
5:00 PM	11	4	1	1	16	86	15	0	0	101	2	74	0	0	76	193
5:15 PM	5	3	3	1	11	86	15	0	0	101	1	117	0	0	118	230
5:30 PM	16	10	9	1	35	72	21	0	0	93	3	91	0	0	94	222
5:45 PM	15	7	15	2	37	69	26	0	0	95	0	66	0	0	66	198
Total	47	24	28	5	99	313	77	0	0	390	6	348	0	0	354	843
Approach %	47.5	24.2	28.3	-	-	80.3	19.7	0.0	-	-	1.7	98.3	0.0	-	-	-
Total %	5.6	2.8	3.3	-	11.7	37.1	9.1	0.0	-	46.3	0.7	41.3	0.0	-	42.0	-
PHF	0.734	0.600	0.467	-	0.669	0.910	0.740	0.000	-	0.965	0.500	0.744	0.000	-	0.750	0.916
Lights	47	24	28	-	99	305	77	0	-	382	6	334	0	-	340	821
% Lights	100.0	100.0	100.0	-	100.0	97.4	100.0	-	-	97.9	100.0	96.0	-	-	96.0	97.4
Buses	0	0	0	-	0	5	0	0	-	5	0	11	0	-	11	16
% Buses	0.0	0.0	0.0	-	0.0	1.6	0.0	-	-	1.3	0.0	3.2	-	-	3.1	1.9
Trucks	0	0	0	-	0	3	0	0	-	3	0	3	0	-	3	6
% Trucks	0.0	0.0	0.0	-	0.0	1.0	0.0	-	-	0.8	0.0	0.9	-	-	0.8	0.7
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	5	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-

189 THE PLAZA

TRAFFIC IMPACT STUDY

APPENDIX C

TRIP GENERATION

Multifamily Housing (High-Rise)

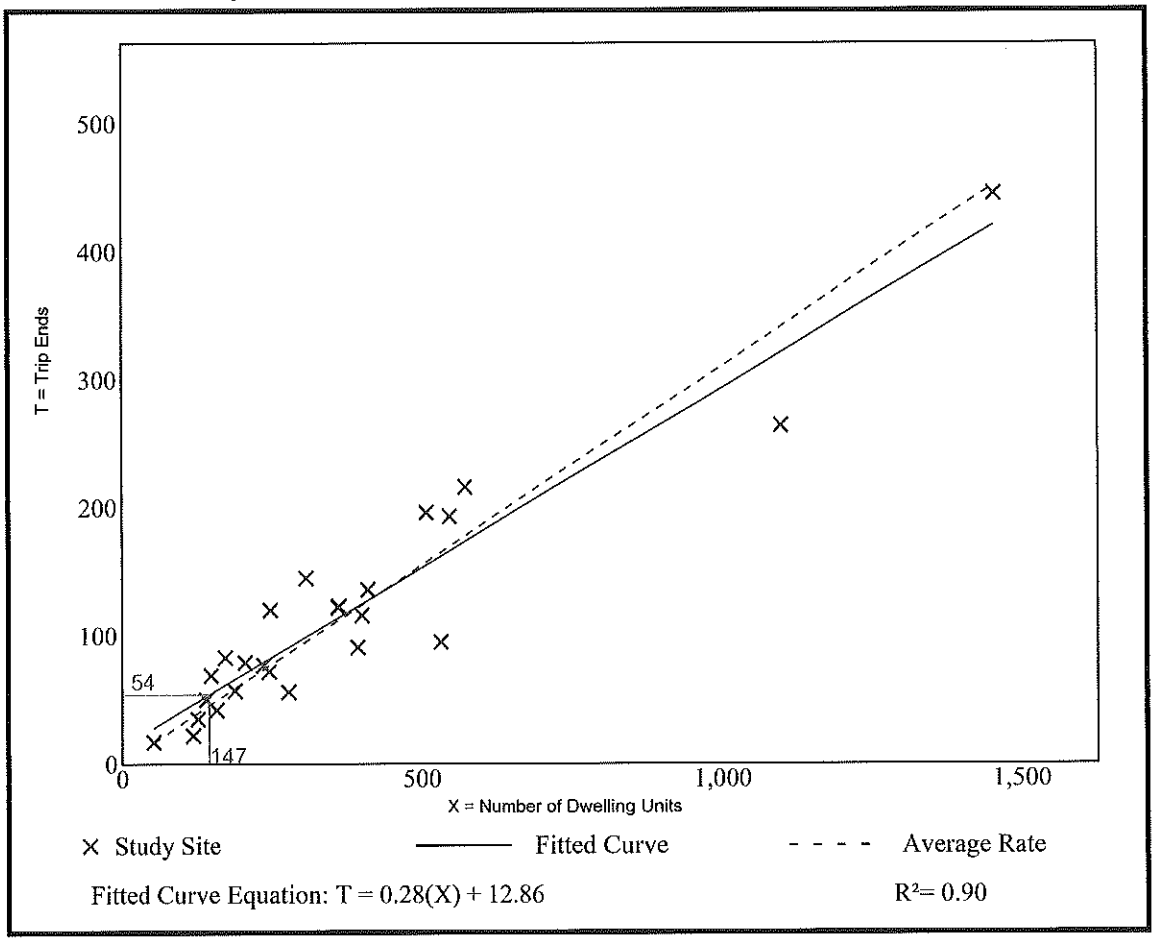
(222)

Vehicle Trip Ends vs:	**Dwelling Units**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	25
Avg. Num. of Dwelling Units:	372
Directional Distribution:	24% entering, 76% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.31	0.18 - 0.48	0.08

Data Plot and Equation



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Multifamily Housing (High-Rise)

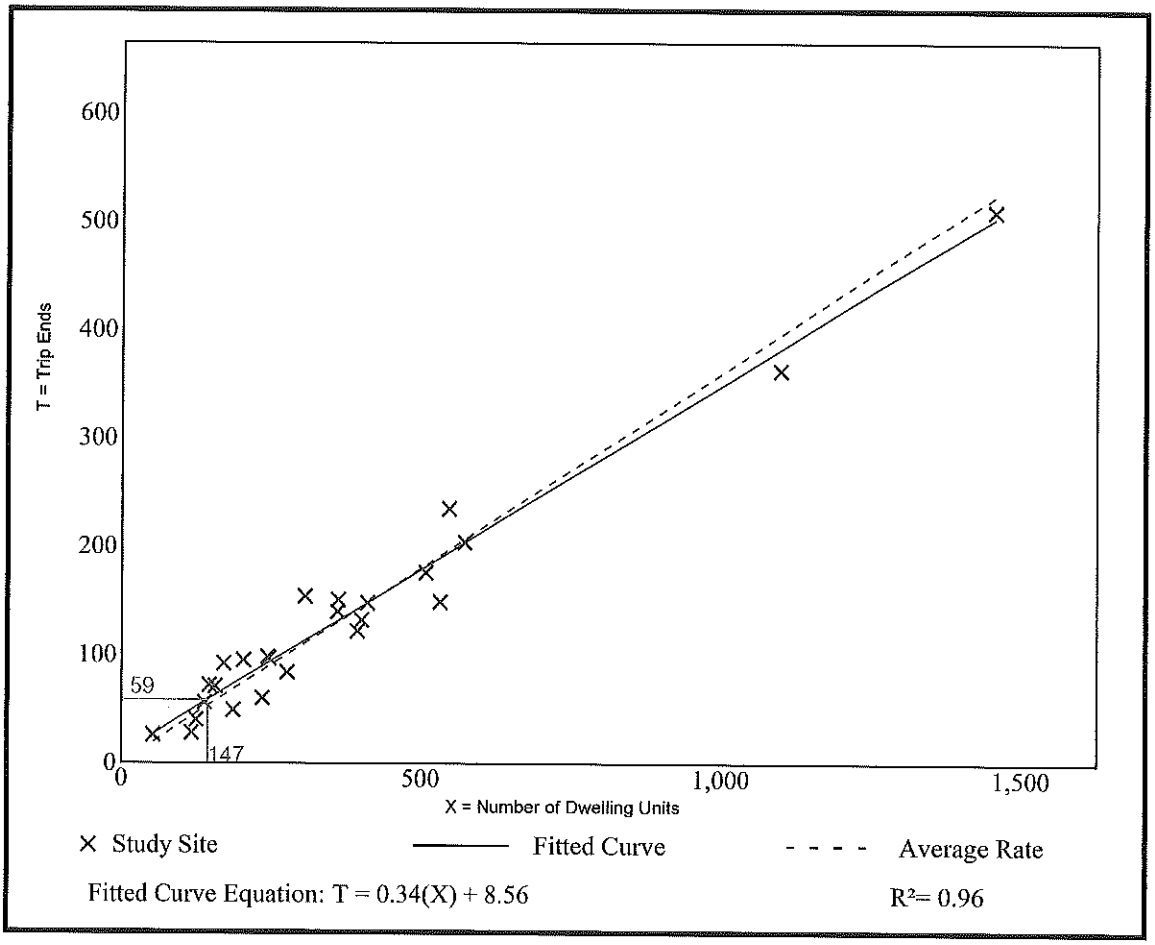
(222)

Vehicle Trip Ends vs:	**Dwelling Units**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	25
Avg. Num. of Dwelling Units:	372
Directional Distribution:	61% entering, 39% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.36	0.23 - 0.53	0.06

Data Plot and Equation



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189 THE PLAZA

TRAFFIC IMPACT STUDY

APPENDIX D

CAPACITY ANALYSIS

Intersection	
Int Delay, s/veh	3.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	38	16	27	19	8	20	5	302	25	24	466	100
Future Vol, veh/h	38	16	27	19	8	20	5	302	25	24	466	100
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	6	0	4	0	0	11	0	5	0	4	6	1
Mvmt Flow	46	19	33	23	10	24	6	364	30	29	561	120

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1087	1085	621	1096	1130	379	681	0	0	394	0	0
Stage 1	679	679	-	391	391	-	-	-	-	-	-	-
Stage 2	408	406	-	705	739	-	-	-	-	-	-	-
Critical Hdwy	7.16	6.5	6.24	7.1	6.5	6.31	4.1	-	-	4.14	-	-
Critical Hdwy Stg 1	6.16	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.16	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.554	4	3.336	3.5	4	3.399	2.2	-	-	2.236	-	-
Pot Cap-1 Maneuver	190	218	484	193	205	648	921	-	-	1154	-	-
Stage 1	435	454	-	637	611	-	-	-	-	-	-	-
Stage 2	612	601	-	430	427	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	169	207	484	161	195	648	921	-	-	1154	-	-
Mov Cap-2 Maneuver	169	207	-	161	195	-	-	-	-	-	-	-
Stage 1	432	435	-	632	606	-	-	-	-	-	-	-
Stage 2	575	596	-	368	409	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	32.5	23.9	0.1	0.3
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	921	-	-	226	247	1154	-	-
HCM Lane V/C Ratio	0.007	-	-	0.432	0.229	0.025	-	-
HCM Control Delay (s)	8.9	0	-	32.5	23.9	8.2	0	-
HCM Lane LOS	A	A	-	D	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	2	0.9	0.1	-	-

Intersection	
Int Delay, s/veh	1.4

Movement	WBU	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Vol, veh/h	8	38	24	347	54	7	355
Future Vol, veh/h	8	38	24	347	54	7	355
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	0	-	-	0
Grade, %	-	0	-	0	-	-	0
Peak Hour Factor	92	91	91	91	91	91	91
Heavy Vehicles, %	2	3	0	4	6	0	5
Mvmt Flow	9	42	26	381	59	8	390

Major/Minor	Minor1			Major1		Major2	
Conflicting Flow All	0	817	411	0	0	440	0
Stage 1	0	411	-	-	-	-	-
Stage 2	0	406	-	-	-	-	-
Critical Hdwy	-	6.43	6.2	-	-	4.1	-
Critical Hdwy Stg 1	-	5.43	-	-	-	-	-
Critical Hdwy Stg 2	-	5.43	-	-	-	-	-
Follow-up Hdwy	-	3.527	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	0	345	645	-	-	1131	-
Stage 1	0	667	-	-	-	-	-
Stage 2	0	671	-	-	-	-	-
Platoon blocked, %	-			-	-		-
Mov Cap-1 Maneuver	0	342	645	-	-	1131	-
Mov Cap-2 Maneuver	0	342	-	-	-	-	-
Stage 1	0	661	-	-	-	-	-
Stage 2	0	671	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.3	0	0.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	418	1131	-
HCM Lane V/C Ratio	-	-	0.163	0.007	-
HCM Control Delay (s)	-	-	15.3	8.2	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	0.6	0	-

Intersection	
Int Delay, s/veh	8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	85	17	24	31	17	25	15	481	36	22	318	65
Future Vol, veh/h	85	17	24	31	17	25	15	481	36	22	318	65
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	0	0	0	0	0	4	0	1	0	0	2	0
Mvmt Flow	96	19	27	35	19	28	17	540	40	25	357	73

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1062	1058	394	1061	1074	560	430	0	0	580	0	0
Stage 1	444	444	-	594	594	-	-	-	-	-	-	-
Stage 2	618	614	-	467	480	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.24	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.336	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	203	227	659	203	222	524	1140	-	-	1004	-	-
Stage 1	597	579	-	495	496	-	-	-	-	-	-	-
Stage 2	480	486	-	580	558	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	172	215	659	174	210	524	1140	-	-	1004	-	-
Mov Cap-2 Maneuver	172	215	-	174	210	-	-	-	-	-	-	-
Stage 1	584	560	-	484	485	-	-	-	-	-	-	-
Stage 2	427	475	-	520	540	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	53.3	27.9	0.2	0.5
HCM LOS	F	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1140	-	-	207	238	1004	-	-
HCM Lane V/C Ratio	0.015	-	-	0.684	0.345	0.025	-	-
HCM Control Delay (s)	8.2	0	-	53.3	27.9	8.7	0	-
HCM Lane LOS	A	A	-	F	D	A	A	-
HCM 95th %tile Q(veh)	0	-	-	4.3	1.5	0.1	-	-

Intersection	
Int Delay, s/veh	1.9

Movement	WBU	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Vol, veh/h	29	50	25	330	81	6	367
Future Vol, veh/h	29	50	25	330	81	6	367
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	0	-	-	0
Grade, %	-	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92	92
Heavy Vehicles, %	2	0	0	3	0	0	4
Mvmt Flow	32	54	27	359	88	7	399

Major/Minor	Minor1			Major1		Major2	
Conflicting Flow All	0	816	403	0	0	447	0
Stage 1	0	403	-	-	-	-	-
Stage 2	0	413	-	-	-	-	-
Critical Hdwy	-	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	-	5.4	-	-	-	-	-
Critical Hdwy Stg 2	-	5.4	-	-	-	-	-
Follow-up Hdwy	-	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	0	349	652	-	-	1124	-
Stage 1	0	679	-	-	-	-	-
Stage 2	0	672	-	-	-	-	-
Platoon blocked, %	-			-	-		-
Mov Cap-1 Maneuver	0	346	652	-	-	1124	-
Mov Cap-2 Maneuver	0	346	-	-	-	-	-
Stage 1	0	674	-	-	-	-	-
Stage 2	0	672	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.9	0	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	410	1124	-
HCM Lane V/C Ratio	-	-	0.199	0.006	-
HCM Control Delay (s)	-	-	15.9	8.2	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	0.7	0	-

Intersection	
Int Delay, s/veh	5.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	49	16	37	19	8	20	12	302	25	24	466	106
Future Vol, veh/h	49	16	37	19	8	20	12	302	25	24	466	106
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	6	0	4	0	0	11	0	5	0	4	6	1
Mvmt Flow	59	19	45	23	10	24	14	364	30	29	561	128

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1107	1105	625	1122	1154	379	689	0	0	394	0	0
Stage 1	683	683	-	407	407	-	-	-	-	-	-	-
Stage 2	424	422	-	715	747	-	-	-	-	-	-	-
Critical Hdwy	7.16	6.5	6.24	7.1	6.5	6.31	4.1	-	-	4.14	-	-
Critical Hdwy Stg 1	6.16	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.16	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.554	4	3.336	3.5	4	3.399	2.2	-	-	2.236	-	-
Pot Cap-1 Maneuver	184	213	481	185	199	648	915	-	-	1154	-	-
Stage 1	433	452	-	625	601	-	-	-	-	-	-	-
Stage 2	600	592	-	425	423	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	162	200	481	148	187	648	915	-	-	1154	-	-
Mov Cap-2 Maneuver	162	200	-	148	187	-	-	-	-	-	-	-
Stage 1	424	433	-	613	589	-	-	-	-	-	-	-
Stage 2	557	580	-	353	405	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	39.6	25.3	0.3	0.3
HCM LOS	E	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	915	-	-	222	233	1154	-	-
HCM Lane V/C Ratio	0.016	-	-	0.554	0.243	0.025	-	-
HCM Control Delay (s)	9	0	-	39.6	25.3	8.2	0	-
HCM Lane LOS	A	A	-	E	D	A	A	-
HCM 95th %tile Q(veh)	0	-	-	3	0.9	0.1	-	-

Intersection	
Int Delay, s/veh	2.1

Movement	WBU	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Vol, veh/h	29	48	34	347	54	7	355
Future Vol, veh/h	29	48	34	347	54	7	355
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	0	-	-	0
Grade, %	-	0	-	0	-	-	0
Peak Hour Factor	92	91	91	91	91	91	91
Heavy Vehicles, %	2	3	0	4	6	0	5
Mvmt Flow	32	53	37	381	59	8	390

Major/Minor	Minor1			Major1		Major2	
Conflicting Flow All	0	817	411	0	0	440	0
Stage 1	0	411	-	-	-	-	-
Stage 2	0	406	-	-	-	-	-
Critical Hdwy	-	6.43	6.2	-	-	4.1	-
Critical Hdwy Stg 1	-	5.43	-	-	-	-	-
Critical Hdwy Stg 2	-	5.43	-	-	-	-	-
Follow-up Hdwy	-	3.527	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	0	345	645	-	-	1131	-
Stage 1	0	667	-	-	-	-	-
Stage 2	0	671	-	-	-	-	-
Platoon blocked, %	-			-	-		-
Mov Cap-1 Maneuver	0	342	645	-	-	1131	-
Mov Cap-2 Maneuver	0	342	-	-	-	-	-
Stage 1	0	661	-	-	-	-	-
Stage 2	0	671	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.7	0	0.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	425	1131	-
HCM Lane V/C Ratio	-	-	0.212	0.007	-
HCM Control Delay (s)	-	-	15.7	8.2	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	0.8	0	-

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↱			↗
Traffic Vol, veh/h	0	102	114	13	0	41
Future Vol, veh/h	0	102	114	13	0	41
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	111	124	14	0	45

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	131
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	0	-	-	-	0	919
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	919
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	9.1
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	919
HCM Lane V/C Ratio	-	-	-	0.048
HCM Control Delay (s)	-	-	-	9.1
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	0.2

Intersection	
Int Delay, s/veh	11.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	91	17	30	31	17	25	33	481	36	22	318	83
Future Vol, veh/h	91	17	30	31	17	25	33	481	36	22	318	83
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	0	0	0	0	0	4	0	1	0	0	2	0
Mvmt Flow	102	19	34	35	19	28	37	540	40	25	357	93

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1112	1108	404	1114	1134	560	450	0	0	580	0	0
Stage 1	454	454	-	634	634	-	-	-	-	-	-	-
Stage 2	658	654	-	480	500	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.24	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.336	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	188	212	651	187	204	524	1121	-	-	1004	-	-
Stage 1	589	573	-	471	476	-	-	-	-	-	-	-
Stage 2	457	466	-	571	546	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	154	195	651	154	187	524	1121	-	-	1004	-	-
Mov Cap-2 Maneuver	154	195	-	154	187	-	-	-	-	-	-	-
Stage 1	560	554	-	448	453	-	-	-	-	-	-	-
Stage 2	394	443	-	505	527	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	74.7	31.7	0.5	0.5
HCM LOS	F	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1121	-	-	191	215	1004	-	-
HCM Lane V/C Ratio	0.033	-	-	0.812	0.381	0.025	-	-
HCM Control Delay (s)	8.3	0	-	74.7	31.7	8.7	0	-
HCM Lane LOS	A	A	-	F	D	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	5.7	1.7	0.1	-	-

Intersection	
Int Delay, s/veh	2.3

Movement	WBU	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Vol, veh/h	41	56	30	330	81	6	367
Future Vol, veh/h	41	56	30	330	81	6	367
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	0	-	-	0
Grade, %	-	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92	92
Heavy Vehicles, %	2	0	0	3	0	0	4
Mvmt Flow	45	61	33	359	88	7	399

Major/Minor	Minor1			Major1		Major2	
Conflicting Flow All	0	816	403	0	0	447	0
Stage 1	0	403	-	-	-	-	-
Stage 2	0	413	-	-	-	-	-
Critical Hdwy	-	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	-	5.4	-	-	-	-	-
Critical Hdwy Stg 2	-	5.4	-	-	-	-	-
Follow-up Hdwy	-	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	0	349	652	-	-	1124	-
Stage 1	0	679	-	-	-	-	-
Stage 2	0	672	-	-	-	-	-
Platoon blocked, %	-			-	-		-
Mov Cap-1 Maneuver	0	346	652	-	-	1124	-
Mov Cap-2 Maneuver	0	346	-	-	-	-	-
Stage 1	0	674	-	-	-	-	-
Stage 2	0	672	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.2	0	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	414	1124	-
HCM Lane V/C Ratio	-	-	0.226	0.006	-
HCM Control Delay (s)	-	-	16.2	8.2	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	0.9	0	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑			↱
Traffic Vol, veh/h	0	138	97	36	0	23
Future Vol, veh/h	0	138	97	36	0	23
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	150	105	39	0	25

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	125
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	0	-	-	-	0	926
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	926
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	9
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	926
HCM Lane V/C Ratio	-	-	-	0.027
HCM Control Delay (s)	-	-	-	9
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	0.1