

TRAFFIC IMPACT STUDY

For
Amin Family, LLC
Proposed Mixed-Use Development

Property Located at:

202 West 7th Street & Arlington Avenue
Block 711 – Lot 2
City of Plainfield, Union County, New Jersey

Prepared by:



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

A handwritten signature in black ink, appearing to read 'NV', written over a horizontal line.

Nick Verderese, PE
NJ PE License #38991

A handwritten signature in black ink, appearing to read 'Justin P. Taylor', written over a horizontal line.

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

RECEIVED

January 30, 2020

FEB - 3 2020

3327-99-001T

PLANNING DIVISION

INTRODUCTION

It is proposed to construct a Mixed-Use Development on a parcel of land currently developed with a retail strip center, including a convenience store and a laundromat, located at the southwest corner of the intersection of West 7th Street (CR 601) and Arlington Avenue in City of Plainfield, Union County, New Jersey, see Figure 1 in Appendix A. The site is designated as Block 711 – Lot 2 on the City of Plainfield Tax Maps. The existing use consists of a 7,229 SF retail shopping center, which contains a 2,413 SF convenience store, a 2,717 SF laundromat, and a 2,099 SF vacant retail space. It is proposed to maintain the existing retail strip center and construct two (2) floors, consisting of twelve (12) residential apartments on top of the existing building. As part of the proposed development, it is proposed to maintain the existing convenience store and laundromat. It is also proposed to reconfigure and expand the existing building to provide 1,117 SF of vacant retail store and a 1,583 SF lobby for the residential apartments on the first floor. The site is located within the TODD/TD – Transit Orientated Development Downtown District – Transition District.

Access to the site is currently provided via a full movement driveway along West 7th Street and a full movement driveway along Arlington Avenue. As part of the proposed development, it is proposed to reconfigure and realign both driveways, while maintaining all turning movements.

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

- A detailed field inspection was conducted to obtain an inventory of existing roadway geometry, traffic control, and location and geometry of existing driveways and intersections.
- Existing traffic data was collected via manual turning movement (MTM) counts during the weekday AM, weekday PM, and Saturday midday peak periods at the intersections of:
 - West 7th Street (CR 601) and Site Driveway
 - Arlington Avenue and Site Driveway
- Projections of traffic to be generated by the proposed development were prepared utilizing trip generation data as published by the Institute of Transportation Engineers. Site traffic was then assigned to the adjacent street system based upon the anticipated directional distribution.
- Capacity analyses were conducted for the Existing, No Build, and Build conditions for the study intersections.
- The proposed points of ingress and egress were inspected for adequacy of geometric design, spacing and/or alignment to streets and driveways on the opposite side of the street, relationship to other driveways adjacent to the development, and conformance with accepted design standards.
- The site plan as designed was reviewed for sufficiency in accommodating large wheel base vehicles such as delivery trucks, refuse trucks, and emergency vehicles.

- The parking layout and supply was assessed based on accepted design standards, local requirements, and demand experienced at similar developments.

EXISTING CONDITIONS

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

Existing Roadway Conditions

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

West 7th Street (CR 601) is an Urban Minor Arterial roadway under Union County jurisdiction with a general east/west orientation. In the vicinity of the site the posted speed limit is 35 MPH and the roadway provides one travel lane in each direction. On-street parking is not permitted in the vicinity of the site. Curb and sidewalk are provided along both sides of the roadway. West 7th Street provides a straight horizontal alignment and a relatively flat vertical alignment. The land uses along West 7th Street in the vicinity of The Project are primarily residential.

Arlington Avenue is a Local Road under the City of Plainfield jurisdiction with general north/south orientation. In the vicinity of the site the speed limit is not posted and the roadway provides one travel lane in each direction. On-street parking, curb and sidewalk are provided along both sides of roadway. Arlington Avenue provides a straight horizontal alignment and a relatively flat vertical alignment. The land use along Arlington Avenue in the vicinity of the project are primarily commercial.

Existing Traffic Volumes

Manual turning movement (MTM) counts were conducted on Thursday, January 9, 2020 from 7:00 AM to 9:00 AM and 4:30 PM to 6:30 PM, and on Saturday, January 11, 2020 from 11:00 AM to 2:00 PM, at the following intersections:

- West 7th Street (CR 601) and Site Driveway
- Arlington Avenue and Site Driveway

Review of the collected traffic data reveals that the weekday morning peak street hour (PSH) occurs between 7:30 - 8:30 AM, the weekday evening PSH occurs between 5:00 – 6:00 PM and the Saturday PSH occurs between 12:15 PM - 1:15 PM. Figure 2, located in Appendix A, shows the existing peak hour traffic volumes at the study intersections. All traffic counts are contained in Appendix B.

Existing Capacity Analysis

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

An unsignalized (STOP sign controlled) driveway or side street along a through route is seldom critical from an overall capacity standpoint, however, it may be of great significance to the capacity of the minor cross-route, and it may influence the quality of traffic flow on both. When analyzing an unsignalized intersection, it is assumed that both the major street through and right turn movements are unimpeded and have the right-of-way over all side street traffic and left turns from the major street.

All other turning movements in the intersection cross, merge with, or are otherwise impeded by major street movements. Traffic delays at unsignalized intersections are determined by sequentially processing these impeded movements. Table I describes the level of service ranges for unsignalized (stop controlled) intersections.

**Table I
Level of Service Criteria
for Unsignalized Intersections**

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

It should be noted that the analyses within the *Highway Capacity Manual* assume a random arrival for all the movements, which may not be the case if an adjacent traffic signal is present that platoons vehicles, such as the signalized intersection of West 7th Street (CR 601) and Arlington Avenue.

All capacity analyses were performed utilizing HCS7 Software. Table II summarizes the existing levels of service (LOS) and delays. All capacity analysis calculation worksheets are contained in Appendix C.

**Table II
Existing Levels of Service**

Intersection	Direction/ Movement		AM PSH	PM PSH	SAT PSH
West 7 th Street & Site Driveway	EB	L	a (9)	a (9)	a (9)
	SB	LR	b (13)	b (15)	b (13)
Arlington Avenue & Site Driveway	EB	LR	b (11)	a (9)	a (9)
	NB	L	a (8)	a (7)	a (7)

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

A (#) - Signalized Intersection Level of Service (seconds of delay per vehicle)

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

West 7th Street and Site Driveway

The existing site driveway intersects West 7th Street to form a T-intersection with the southbound approach of the site driveway operating under stop control. The westbound approach of West 7th Street provides a shared through/right turn lane, while the eastbound approach provides a shared left turn/through lane. The southbound approach of the site driveway provides a shared left turn/right turn lane.

A review of the existing analysis reveals that the intersection operates at levels of service “B” or better during the analyzed peak periods. See Table II for the individual movement levels of service and delays.

Arlington Avenue and Site Driveway

The existing site driveway intersects Arlington Avenue to form a T-intersection with the eastbound approach of the site driveway operating under stop control. The southbound approach of the Arlington Avenue provides a shared through/right turn lane, while the northbound approach provides a shared left turn/through lane.

A review of the existing analysis reveals that the intersection operates at levels of service “B” or better during the analyzed peak periods. See Table II for the individual movement levels of service and delays.

FUTURE CONDITIONS

Traffic volumes and operational analyses were developed for both the 2022 No Build and Build conditions. The No Build conditions provide a baseline for assessing the impact of the site development traffic on the roadway system. The process of developing the No Build and Build traffic volumes and the subsequent analyses is outlined below.

Regardless of whether the subject site is developed or not, traffic volumes on the surrounding roadways are expected to increase as a result of developments throughout the region. A growth rate for roadways within the study area was obtained from the NJDOT Annual Background Growth Rate Table, which indicates a growth rate of 1.0% per year.

Through consultation with the City of Plainfield Planning Board Staff, there is one development in the vicinity of the site that has been approved but not yet constructed that is identified as a potential significant traffic generator, shown below. The Adjacent Development Traffic Volumes passing the site are shown on Figure 3. It was assumed that the background growth rate was adequate to account for the traffic associated with all developments not listed hereafter

- A mixed-use development consisting of 14 residential apartments and 5,000 SF of retail, located at the southeast corner of the intersection of West 7th Street and Park Avenue, has been approved. Projections of the associated traffic volumes were developed using Institute of Transportation Engineers (ITE) publication *Trip Generation, 10th Edition* for Land Use Code (LUC) 220 – Multifamily Housing (Low-Rise) and LUC 820 – Shopping Center.

Future 2022 No Build traffic volumes were developed by applying the background growth rate of 1.0% for two (2) years to the study area roadways existing traffic volumes. Figure 4, in Appendix A, shows the 2022 No Build traffic volumes.

Traffic Generation

Trip generation projections for The Project were prepared utilizing trip generation research data as published under LUC 220 – Multifamily Housing (Low-Rise) and LUC 820 – Shopping Center in the Institute of Transportation Engineers' (ITE) publication, *Trip Generation, 10th Edition*. This publication sets forth trip generation rates based on traffic counts conducted at research sites throughout the country.

According to studies conducted by ITE, traffic associated with LUC 820 is not 100% newly generated. Rather, a portion of the traffic is diverted from the existing traffic stream on the adjacent roadway network. This is because the shopping center is not exclusively a destination land use, instead patrons stop on their way to/from other locations such as home or work. ITE identifies 34% and 26% passby traffic percentages during the weekday evening and Saturday midday peak hours, respectively, which are also accepted by NJDOT. No rate is published for the weekday morning peak hour, hence, in order to provide a conservative analysis, no passby traffic was considered. Table III below details the traffic volumes associated with the subject project taking into account internal capture and the passby credits.

Table III
Trip Generation Considering Passby Traffic

Trip Type		AM PSH			PM PSH			SAT PSH		
		In	Out	Total	In	Out	Total	In	Out	Total
1,117 SF Shopping Center	Total	1	0	1	10	10	20	9	9	18
	Passby	0	0	0	3	4	7	2	3	5
	New (Primary)	0	0	0	7	6	13	7	6	13
12 unit Residential Apartments	Total	1	5	6	6	3	9	4	4	8
	Passby	0	0	0	0	0	0	0	0	0
	New (Primary)	1	5	6	6	3	9	4	4	8
Total Proposed	Total	2	5	7	16	13	29	13	13	26
	Passby	0	0	0	3	4	7	2	3	5
	New (Primary)	2	5	7	13	9	22	11	10	21

Once the magnitude of traffic to be generated by the site is known, it is necessary to assign that traffic to the adjacent street system. The distribution of new traffic to the surrounding roadways is based on the location of primary arterial roadways, major signalized intersections and existing traffic patterns. Table IV below summarizes the anticipated trip distribution for The Project.

Table IV
Trip Distribution

To/From	Percentage
Arlington Avenue- North	40%
Arlington Avenue- South	20%
West 7 th Street- East	20%
West 7 th Street- West	20%
Total	100%

Located in Appendix A, Figure 5 illustrates the primary site generated volumes, Figure 6 illustrates the passby site generated volumes, and Figure 7 illustrates the total site generated volumes assigned to the study area network. The site generated volumes were added to the No Build traffic volumes to generate the Build traffic volumes, which are shown in Figure 8.

Future Capacity Analysis

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

**Table V
Future Levels of Service**

Intersection	Direction/ Movement		AM PSH		PM PSH		SAT PSH	
			No Build	Build	No Build	Build	No Build	Build
West 7 th Street & Site Driveway	EB	L	a (9)	a (9)	a (9)	a (9)	a (9)	a (9)
	SB	LR	b (14)	b (14)	b (15)	c (16)	b (13)	b (14)
Arlington Ave. & Site Driveway	EB	LR	b (11)	b (11)	a (9)	a (9)	a (9)	a (9)
	NB	L	a (8)	a (8)	a (7)	a (7)	a (7)	a (7)

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

A (#) - Signalized Intersection Level of Service (seconds of delay per vehicle)

West 7th Street and Site Driveway

With the addition of site generated traffic, the intersection is anticipated to operate at levels of service “C” or better during the analyzed peak hours. See Table V for the individual movement levels of service and delays.

Arlington Avenue and Site Driveway

With the addition of site generated traffic, the intersection is anticipated to operate at No Build levels of service “B” or better during the analyzed peak hours. See Table V for the individual movement levels of service and delays.

SITE PLAN

Site Access and Circulation

The site plan was reviewed with respect to the site access and on-site circulation design. As noted previously, access to the site is currently provided via a full movement driveway along West 7th Street and a full movement driveway along Arlington Avenue. As part of the proposed development, it is proposed to reconfigure and realign both driveways, while maintaining all turning movements

The parking lot will be serviced by parking aisles with widths of 24', which meets the Ordinance's minimum requirement of 24' aisles. These aisles will allow for two-way circulation and 90 degree parking. Review of the site plan design indicates that the site can sufficiently accommodate, within paved areas, a large wheel base vehicle, such as a single unit truck (SU), along with the automobile traffic anticipated.

Parking

The City of Plainfield Ordinance sets forth a parking requirement of 1 parking space for each dwelling unit within the TODD District, 1 space per 300 SF of gross floor area of retail, and 1 space per 2 washer and dryer units within a laundromat. This equates to a parking requirement of 12 spaces for the 12 residential apartments, 12 spaces for the 3,530 SF of retail space, and 13 spaces for the 25 washer and dryer units in the laundromat, or a total of 37 spaces. This site as proposed provides 35 parking spaces and thus, a parking variance is required.

The parking layout of the site provides 7 sets of tandem parking spaces (total of 14) and 21 standard parking spaces. It is anticipated that the 7 sets of tandem parking spaces will be assigned to 7 residential units and that users of the convenience store, laundromat and retail uses will be restricted from parking in these spaces during off-peak hours. It should be noted that the City of Plainfield Ordinance only requires 1 parking space for each dwelling unit within the TODD District. Therefore, the 7 sets of tandem spaces will allow for apartment occupants with 2 vehicles to park on the property without occupying 2 individual parking spaces.

Parking counts were conducted at the existing site to determine the parking demand generated by the existing convenience store and laundromat. The counts were conducted on Thursday, January 9, 2020 from 7:00 AM to 9:00 AM and 4:30 PM to 6:30 PM, and on Saturday, January 11, 2020 from 11:00 AM to 2:00 PM. These specific count times were selected to coincide with the typical peak parking hours of the existing uses. The parking count data is appended. Based upon the results of the parking counts, the maximum demand experienced by the existing convenience store and laundromat is 8 spaces during the weekday morning peak hour, 14 spaces during the weekday evening peak hour and 15 spaces during the Saturday midday peak hour.

For the proposed retail use and residential apartments, national parking demand data has also been collected by the Urban Land Institute (ULI), a non-profit education and research institute whose mission is to provide responsible leadership in the use of land in order to enhance the total environment. This data is compiled within their publication *Shared Parking, 2nd Edition*. This publication documents temporal distributions of parking demands throughout the day, week, and year for individual land uses, as well as peak parking demands. Based on the ordinance requirement of 4 parking spaces for the proposed 1,117 SF retail use and 12 parking spaces for the residential apartments, a shared parking analysis was performed to determine the peak parking demand, as well as the peak parking time period during a typical weekday and Saturday. Based on the results of the analysis, the peak parking demand for the new retail and residential uses is 11 parking spaces during the weekday morning peak hour (9 AM), 14 spaces during the weekday evening peak hour (6 PM) and 11 parking spaces during the Saturday midday peak hour (1 PM).

Therefore, based on the existing parking counts and ULI parking demand data, the calculated demand is 28 parking spaces for the site and the proposed parking supply will be sufficient to support the project.

**Table VI
Parking Demand**

Parking Criteria	Parking Demand/Requirement		
	AM PSH	PM PSH	SAT PSH
Existing Demand – Convenience Store and Laundromat	8	14	15
ULI Shared Parking Demand – Retail and Residential Uses	11	14	11
Total Parking Demand	19	28	26

It is proposed to provide parking stalls with dimensions of 9'x18', which satisfy the Ordinance minimum requirement of 9'x18'. It should be noted that industry standards recommend stall widths of between 8'9" and 9' and a length of 18' for high-turnover land uses such as The Project, which is met as designed.

FINDINGS & CONCLUSIONS

Findings

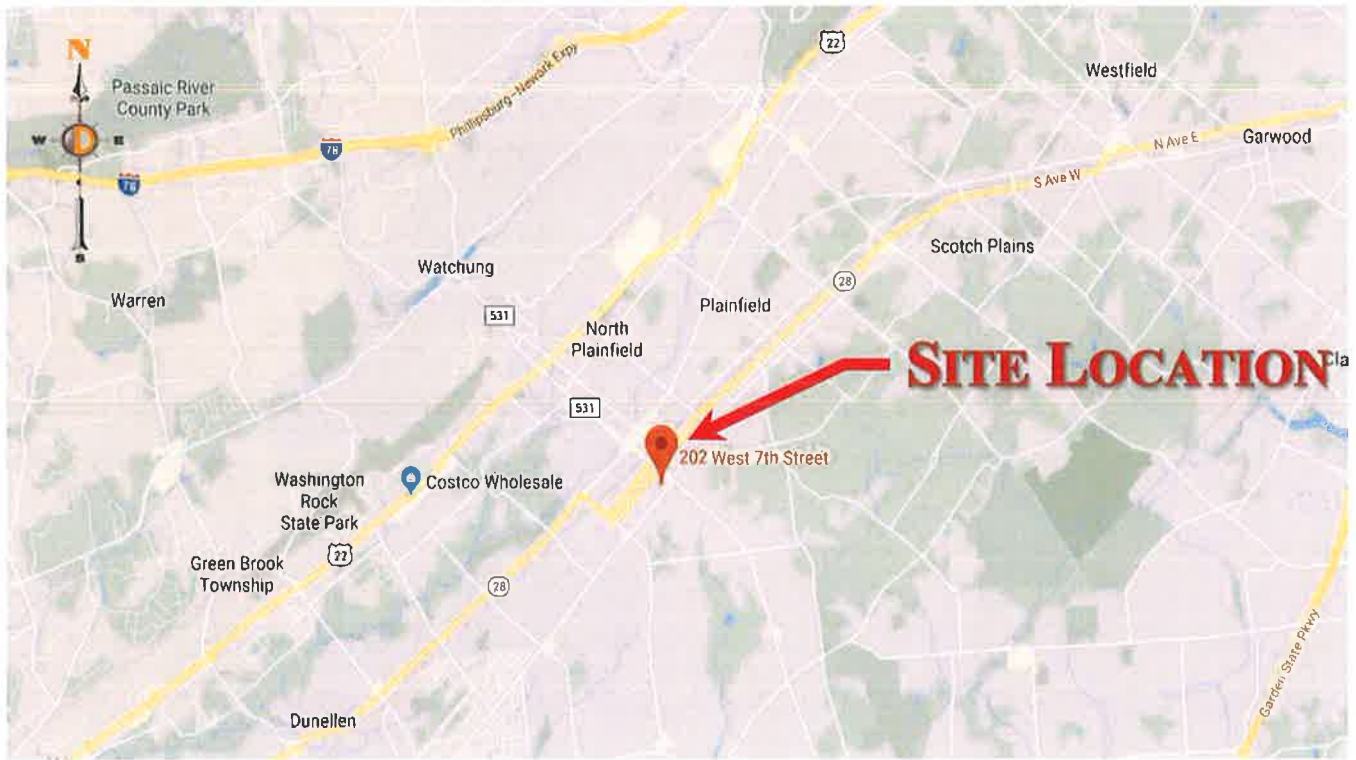
Based upon the detailed analyses as documented herein, the following findings are noted:

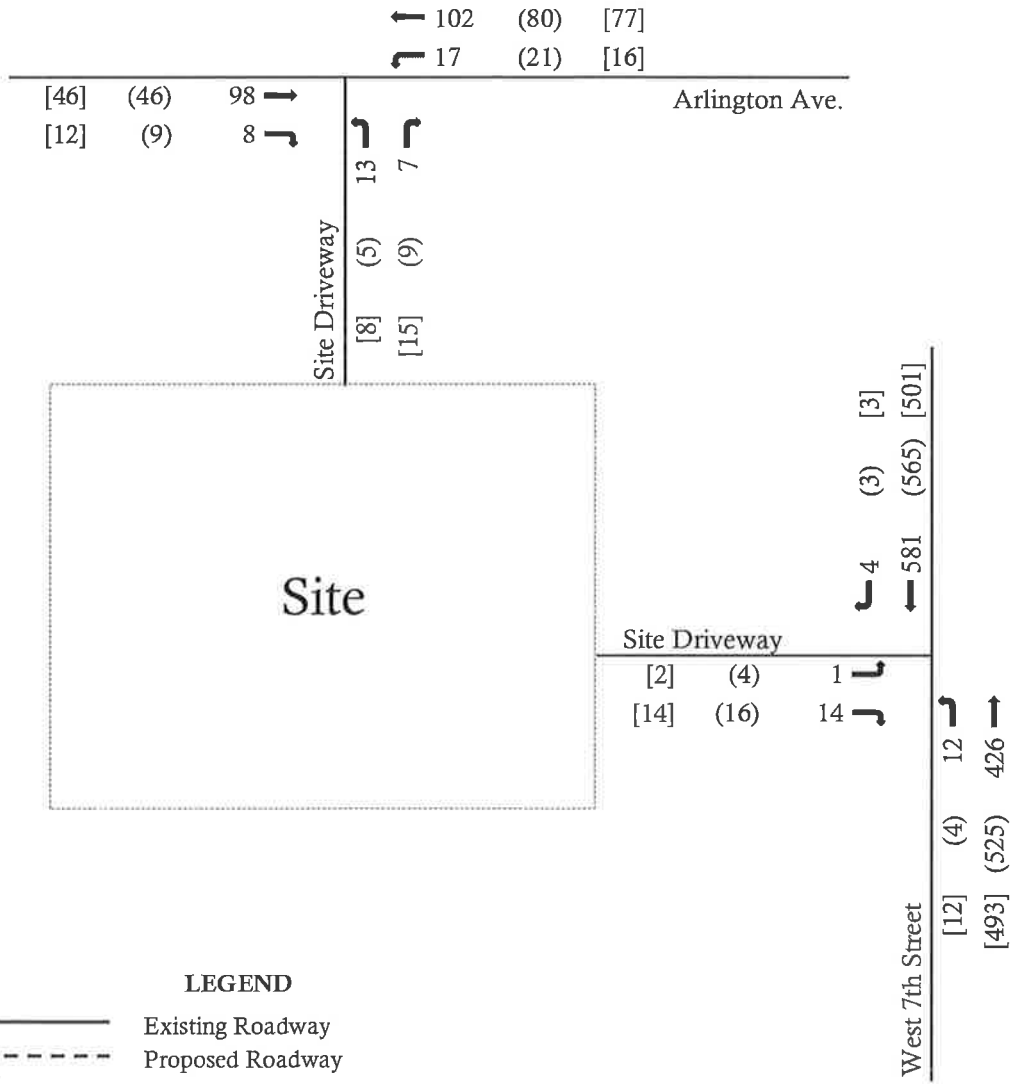
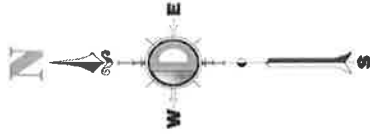
- The proposed mixed-use development will generate 2 entering trips and 5 exiting trips during the weekday morning peak hour, 13 entering trips and 9 exiting trips during the evening peak hour, and 11 entering trips and 10 exiting trips during the Saturday peak hour that are “new” to the adjacent roadway network.
- Access to the site is to be provided via a full movement driveway along West 7th Street and a full movement driveway along Arlington Avenue. It is proposed to reconfigure and realign both driveways, while maintaining all turning movements.
- With the addition of site generated traffic, the intersection of West 7th Street & Site Driveway is anticipated to operate at levels of service “C” or better during the peak hours studied.
- With the addition of site generated traffic, the intersection of Arlington & Site Driveway is anticipated to operate at No Build levels of service “B” or better during the peak hours studied.
- As proposed, The Project’s site driveways and internal circulation have been designed to provide for safe and efficient movement of automobiles and large wheel base vehicles.
- The proposed parking supply and design is sufficient to support the projected demand and satisfies the Ordinance requirements.

Conclusions

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

Appendix A
Traffic Volume Figures





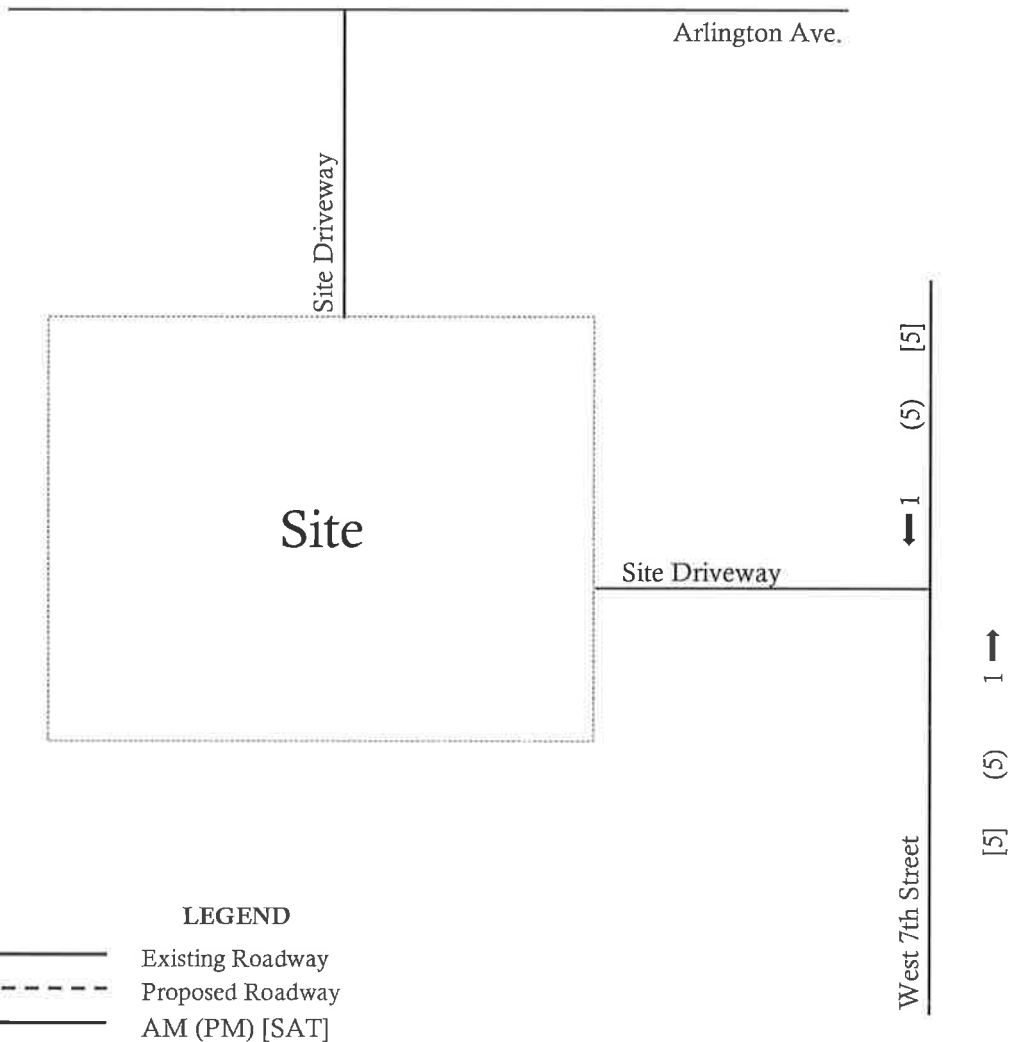
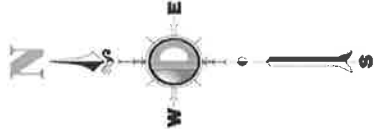
LEGEND

— Existing Roadway

- - - Proposed Roadway

← AM (PM) [SAT]





LEGEND

- Existing Roadway
- - - Proposed Roadway
- ← AM (PM) [SAT]



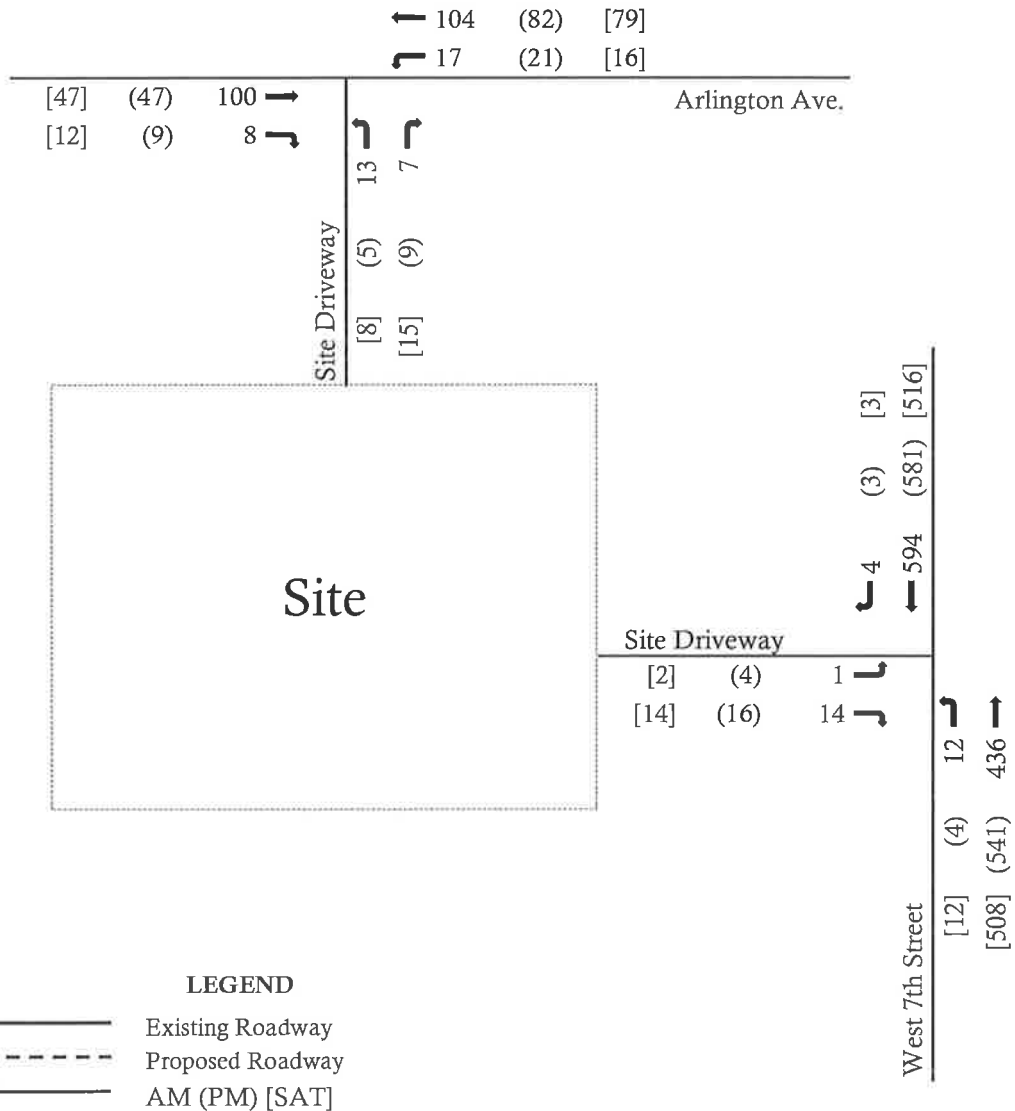
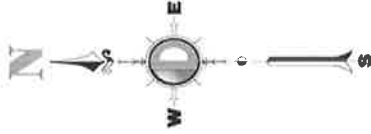
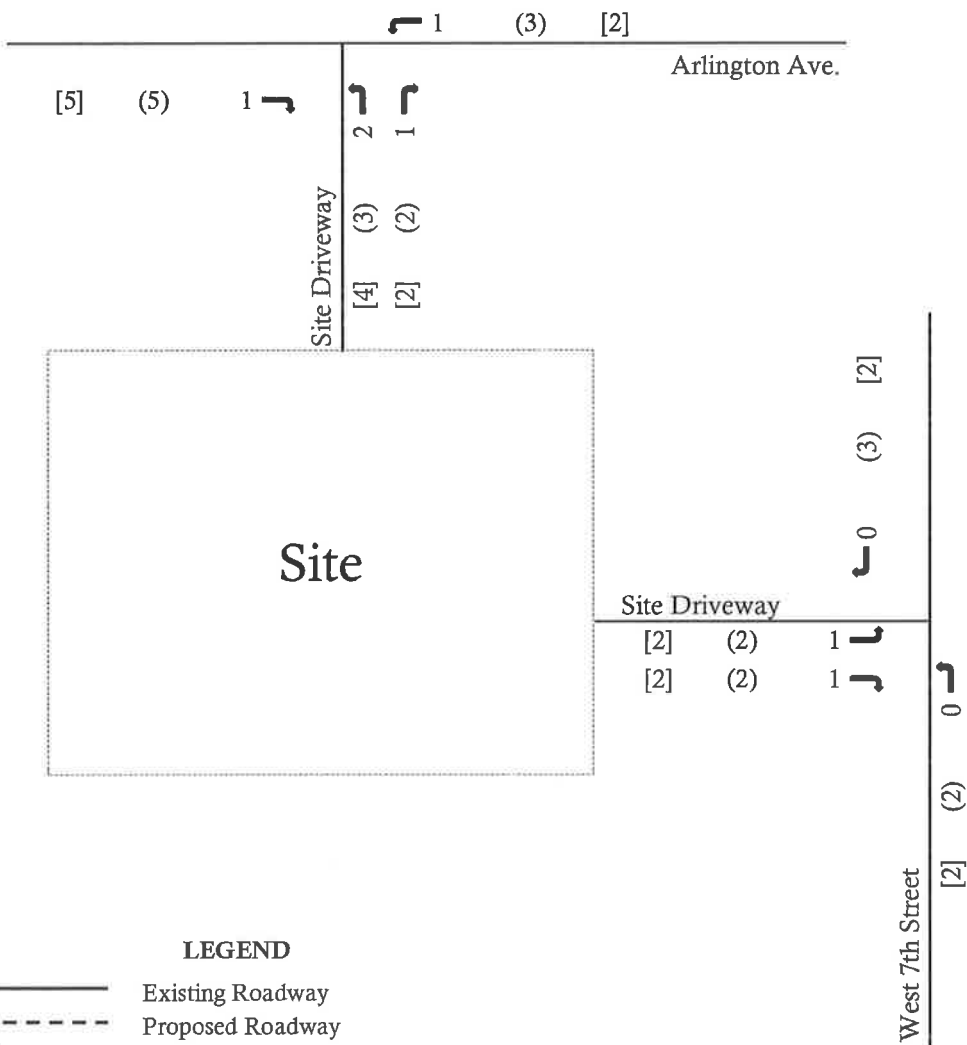


Figure 4

No Build Traffic Volumes



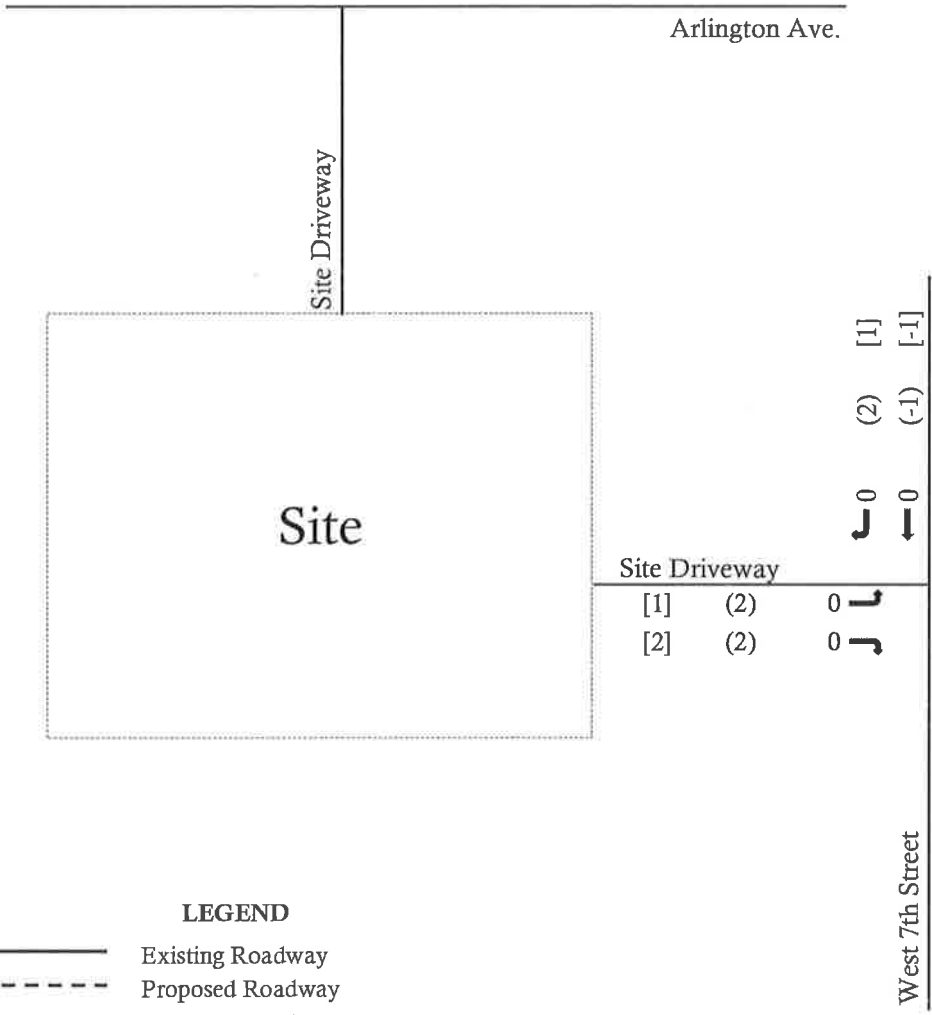
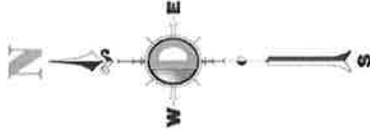
LEGEND

- Existing Roadway
- - - Proposed Roadway
- ← AM (PM) [SAT]



Figure 5

Primary Site Generated Trips



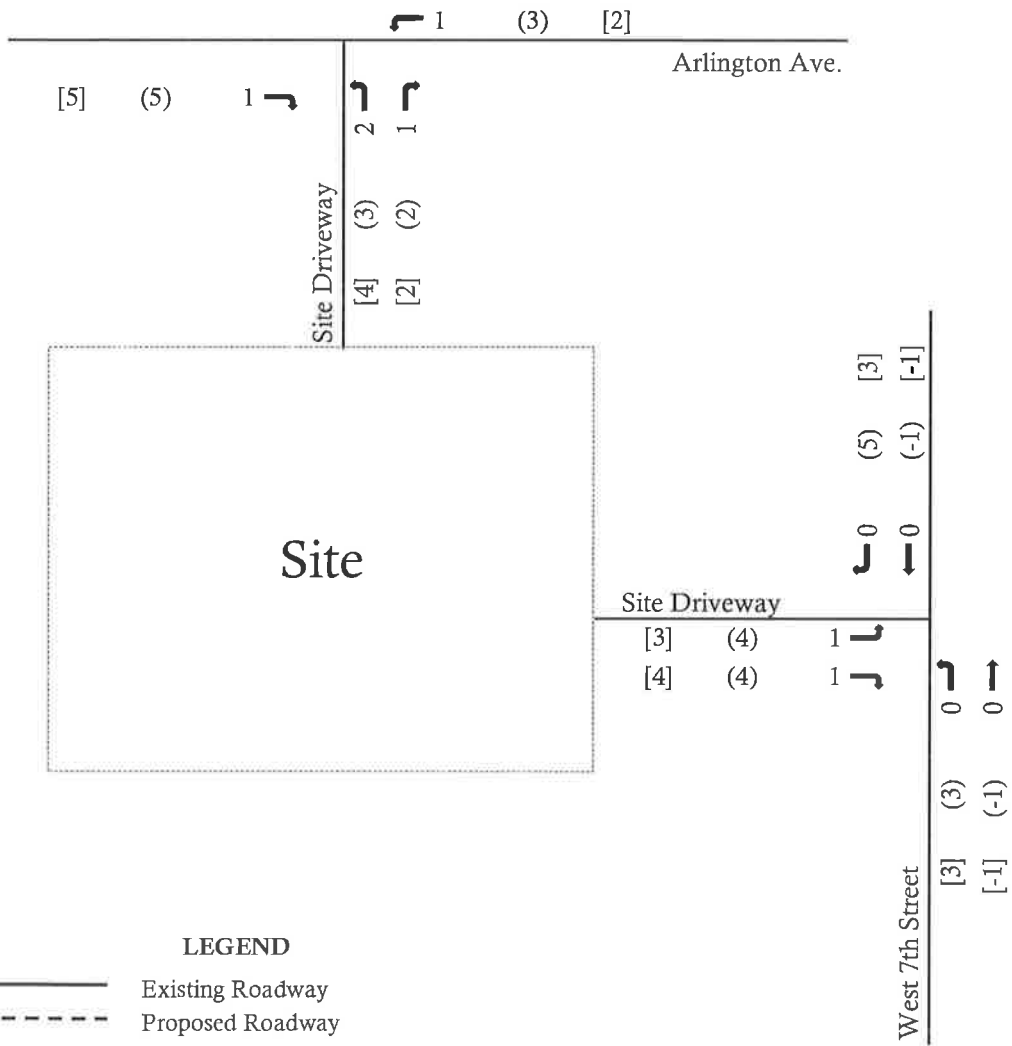
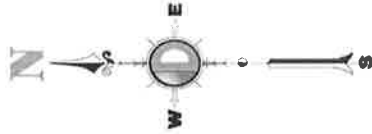
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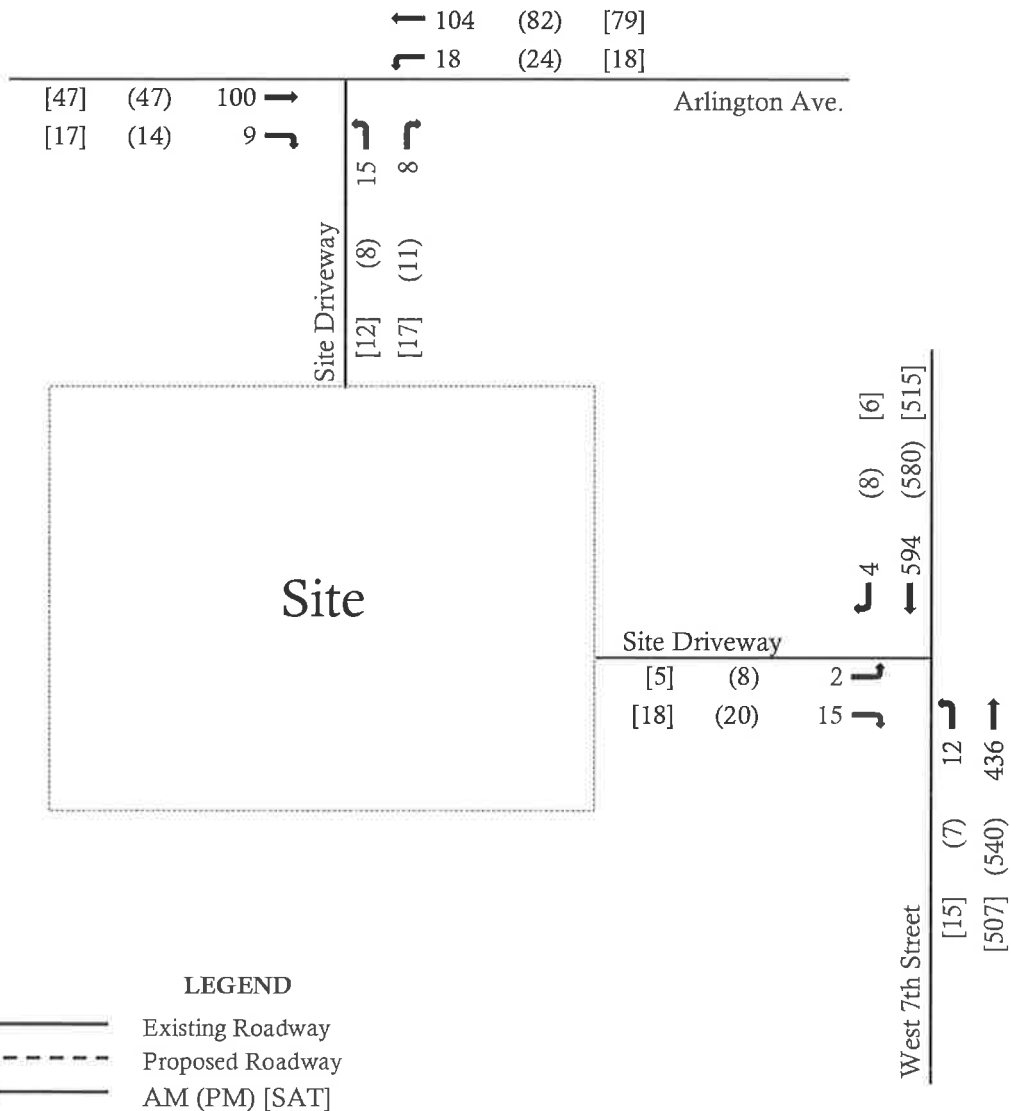
- Existing Roadway
- - - Proposed Roadway
- ← AM (PM) [SAT]






Figure 6

Passby Site Generated Trips





LEGEND

-  Existing Roadway
-  Proposed Roadway
-  AM (PM) [SAT]



Appendix B
Project Information

Dynamic Traffic, LLC

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

E/W: West 7th St
 N/S: Site Driveway
 Town/County: Plainfield/Union
 Job #: 3327-99-001T

File Name : West 7th St and Site Driveway - AMPM
 Site Code : 00000000
 Start Date : 1/9/2020
 Page No : 1

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

Start Time	West 7th Street (CR 601) Eastbound					West 7th Street (CR 601) Westbound					Site Driveway Southbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
07:00 AM	3	91	0	0	94	0	123	0	0	123	0	0	1	1	2	219
07:15 AM	3	103	0	0	106	0	115	0	0	115	0	0	2	11	13	234
07:30 AM	3	100	0	0	103	0	135	2	0	137	0	0	2	9	11	251
07:45 AM	4	110	0	0	114	0	159	1	0	160	0	0	2	22	24	298
Total	13	404	0	0	417	0	532	3	0	535	0	0	7	43	50	1002
08:00 AM	3	113	0	0	116	0	154	1	0	155	0	0	3	15	18	289
08:15 AM	2	103	0	0	105	0	133	0	0	133	1	0	7	2	10	248
08:30 AM	0	124	0	0	124	0	108	0	0	108	0	0	1	2	3	235
08:45 AM	2	108	0	0	110	0	109	1	0	110	0	0	1	4	5	225
Total	7	448	0	0	455	0	504	2	0	506	1	0	12	23	36	997
*** BREAK ***																
04:30 PM	0	128	0	0	128	0	149	1	0	150	0	0	4	6	10	288
04:45 PM	1	136	0	0	137	0	113	0	0	113	0	0	1	8	9	259
Total	1	264	0	0	265	0	262	1	0	263	0	0	5	14	19	547
05:00 PM	0	149	0	0	149	0	127	2	0	129	1	0	3	13	17	295
05:15 PM	0	133	0	0	133	0	155	1	0	156	1	0	9	12	22	311
05:30 PM	3	116	0	0	119	0	134	0	0	134	2	0	2	18	22	275
05:45 PM	1	127	0	0	128	0	149	0	0	149	0	0	2	15	17	294
Total	4	525	0	0	529	0	565	3	0	568	4	0	16	58	78	1175
06:00 PM	3	138	0	0	141	0	140	1	0	141	0	0	3	11	14	296
06:15 PM	1	118	0	0	119	0	118	0	0	118	2	0	5	13	20	257
Grand Total	29	1897	0	0	1926	0	2121	10	0	2131	7	0	48	162	217	4274
Apprch %	1.5	98.5	0	0		0	99.5	0.5	0		3.2	0	22.1	74.7		
Total %	0.7	44.4	0	0	45.1	0	49.6	0.2	0	49.9	0.2	0	1.1	3.8	5.1	
Cars	29	1853	0	0	1882	0	2079	10	0	2089	7	0	48	162	217	4188
% Cars	100	97.7	0	0	97.7	0	98	100	0	98	100	0	100	100	100	98
Trucks (SU)	0	40	0	0	40	0	36	0	0	36	0	0	0	0	0	76
% Trucks (SU)	0	2.1	0	0	2.1	0	1.7	0	0	1.7	0	0	0	0	0	1.8
Trucks (TT)	0	4	0	0	4	0	6	0	0	6	0	0	0	0	0	10
% Trucks (TT)	0	0.2	0	0	0.2	0	0.3	0	0	0.3	0	0	0	0	0	0.2

Dynamic Traffic, LLC

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

E/W: West 7th St
 N/S: Site Driveway
 Town/County: Plainfield/Union
 Job #: 3327-99-001T

File Name : West 7th St and Site Driveway - SAT
 Site Code : 00000000
 Start Date : 1/11/2020
 Page No : 1

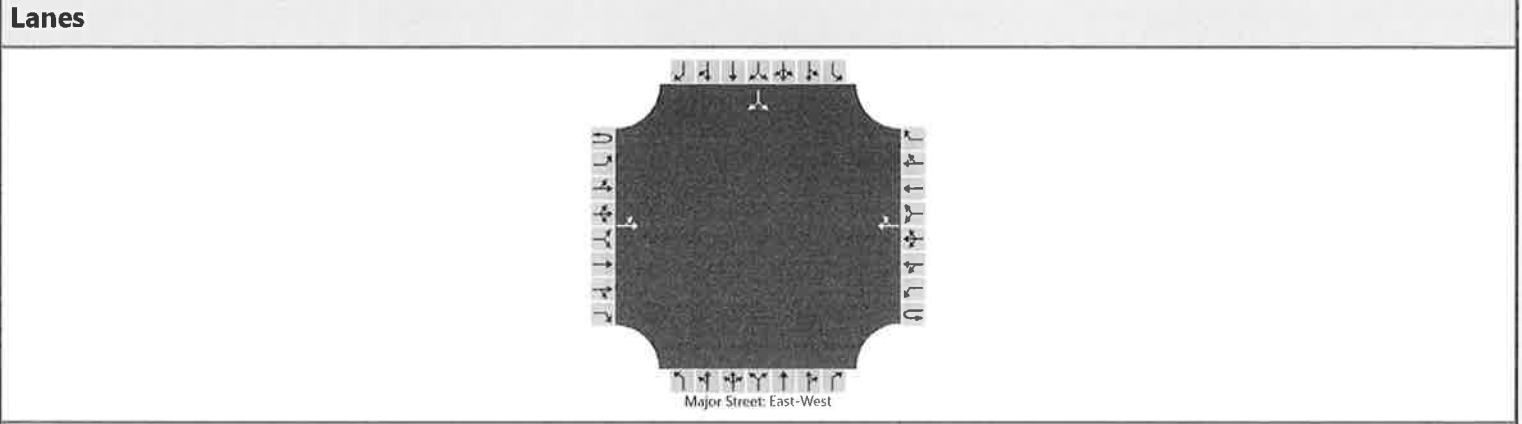
Groups Printed- Cars - Trucks (SU) - Trucks (TT)

Start Time	West 7th Street (CR 601) Eastbound					West 7th Street (CR 601) Westbound					Site Driveway Southbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
11:00 AM	1	109	0	0	110	0	99	0	0	99	1	0	2	12	15	224
11:15 AM	2	107	0	0	109	0	122	1	0	123	2	0	2	7	11	243
11:30 AM	3	114	0	0	117	0	115	0	0	115	0	0	3	18	21	253
11:45 AM	2	102	0	0	104	0	110	1	0	111	0	0	5	12	17	232
Total	8	432	0	0	440	0	446	2	0	448	3	0	12	49	64	952
12:00 PM	1	84	0	0	85	0	115	2	0	117	1	0	5	18	24	226
12:15 PM	3	103	0	0	106	0	129	0	0	129	0	0	6	20	26	261
12:30 PM	3	144	0	0	147	0	120	0	0	120	0	0	1	15	16	283
12:45 PM	3	125	0	0	128	0	135	1	0	136	0	0	6	10	16	280
Total	10	456	0	0	466	0	499	3	0	502	1	0	18	63	82	1050
01:00 PM	3	121	0	0	124	0	117	2	0	119	2	0	1	6	9	252
01:15 PM	2	114	0	0	116	0	133	1	0	134	0	0	6	9	15	265
01:30 PM	2	106	0	0	108	0	117	3	0	120	2	0	2	16	20	248
01:45 PM	1	111	0	0	112	0	135	1	0	136	1	0	5	7	13	261
Total	8	452	0	0	460	0	502	7	0	509	5	0	14	38	57	1026
Grand Total	26	1340	0	0	1366	0	1447	12	0	1459	9	0	44	150	203	3028
Apprch %	1.9	98.1	0	0		0	99.2	0.8	0		4.4	0	21.7	73.9		
Total %	0.9	44.3	0	0	45.1	0	47.8	0.4	0	48.2	0.3	0	1.5	5	6.7	
Cars	25	1326	0	0	1351	0	1429	12	0	1441	9	0	44	150	203	2995
% Cars	96.2	99	0	0	98.9	0	98.8	100	0	98.8	100	0	100	100	100	98.9
Trucks (SU)	1	14	0	0	15	0	17	0	0	17	0	0	0	0	0	32
% Trucks (SU)	3.8	1	0	0	1.1	0	1.2	0	0	1.2	0	0	0	0	0	1.1
Trucks (TT)	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
% Trucks (TT)	0	0	0	0	0	0	0.1	0	0	0.1	0	0	0	0	0	0

Appendix C
Capacity Analysis

HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	HZ			Intersection	West 7th St and Site Drwy		
Agency/Co.	Dynamic Traffic			Jurisdiction	Plainfield Township		
Date Performed	1/16/2020			East/West Street	West 7th Street		
Analysis Year	2020			North/South Street	Site Drwy		
Time Analyzed	EX AM			Peak Hour Factor	0.91		
Intersection Orientation	East-West			Analysis Time Period (hrs)	0.25		
Project Description	3327-99-001T						



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Priority																
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		12	426				581		4					1		14
Percent Heavy Vehicles (%)		0												0		0
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

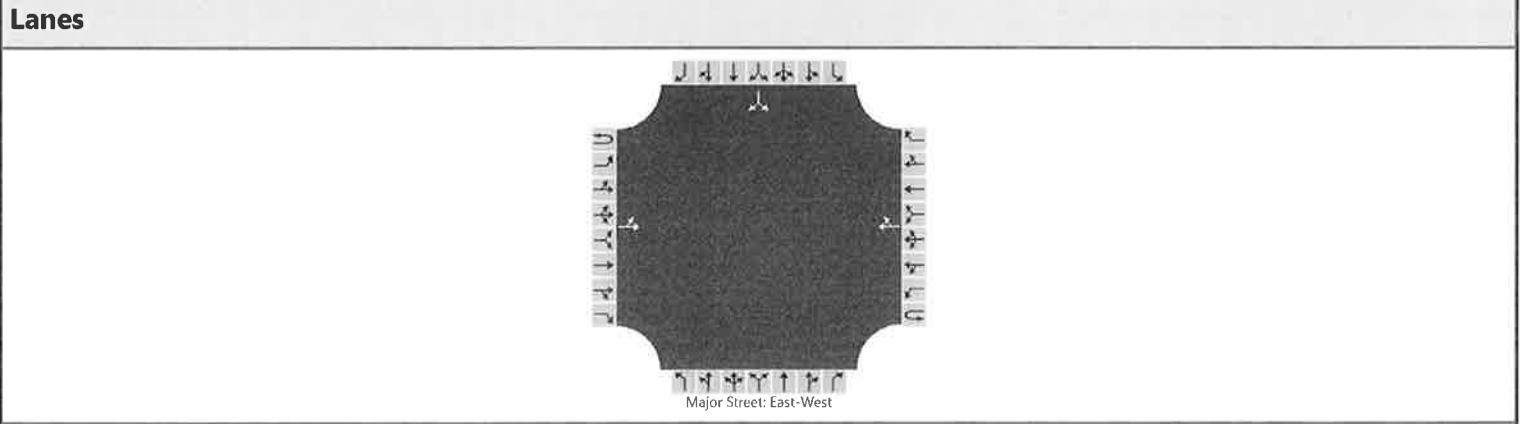
Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.10												6.40		6.20
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.20												3.50		3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		13														16	
Capacity, c (veh/h)		952														444	
v/c Ratio		0.01														0.04	
95% Queue Length, Q ₉₅ (veh)		0.0														0.1	
Control Delay (s/veh)		8.8														13.4	
Level of Service (LOS)		A														B	
Approach Delay (s/veh)		0.4												13.4			
Approach LOS														B			

HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	HZ			Intersection	West 7th St and Site Drwy		
Agency/Co.	Dynamic Traffic			Jurisdiction	Plainfield Township		
Date Performed	1/16/2020			East/West Street	West 7th Street		
Analysis Year	2020			North/South Street	Site Drwy		
Time Analyzed	EX PM			Peak Hour Factor	0.95		
Intersection Orientation	East-West			Analysis Time Period (hrs)	0.25		
Project Description	3327-99-001T						



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Priority																
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		4	525				565	3						4		16
Percent Heavy Vehicles (%)		0												0		0
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.10												6.40		6.20
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.20												3.50		3.30

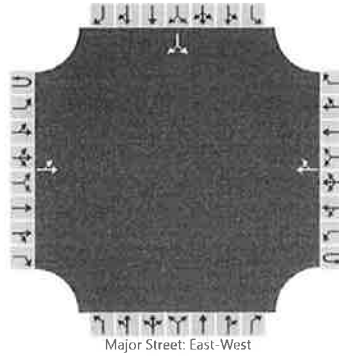
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		4														21	
Capacity, c (veh/h)		989														401	
v/c Ratio		0.00														0.05	
95% Queue Length, Q ₉₅ (veh)		0.0														0.2	
Control Delay (s/veh)		8.7														14.5	
Level of Service (LOS)		A														B	
Approach Delay (s/veh)		0.1												14.5			
Approach LOS														B			

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	HZ	Intersection	West 7th St and Site Drwy
Agency/Co.	Dynamic Traffic	Jurisdiction	Plainfield Township
Date Performed	1/16/2020	East/West Street	West 7th Street
Analysis Year	2020	North/South Street	Site Drwy
Time Analyzed	EX SAT	Peak Hour Factor	0.95
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	3327-99-001T		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		12	493				501	3						2		14
Percent Heavy Vehicles (%)		8												0		0
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.18												6.40		6.20
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.27												3.50		3.30

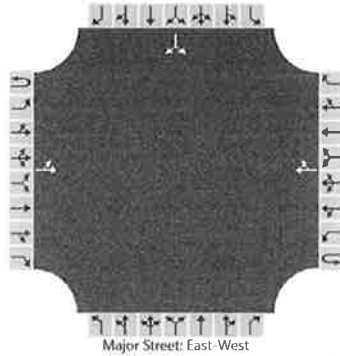
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		13														17	
Capacity, c (veh/h)		1007														477	
v/c Ratio		0.01														0.04	
95% Queue Length, Q ₉₅ (veh)		0.0														0.1	
Control Delay (s/veh)		8.6														12.8	
Level of Service (LOS)		A														B	
Approach Delay (s/veh)		0.4												12.8			
Approach LOS														B			

HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	HZ			Intersection	West 7th St and Site Drwy		
Agency/Co.	Dynamic Traffic			Jurisdiction	Plainfield Township		
Date Performed	1/16/2020			East/West Street	West 7th Street		
Analysis Year	2022			North/South Street	Site Drwy		
Time Analyzed	NB AM			Peak Hour Factor	0.91		
Intersection Orientation	East-West			Analysis Time Period (hrs)	0.25		
Project Description	3327-99-001T						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Priority																
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		12	436				594	4							1	14
Percent Heavy Vehicles (%)		0													0	0
Proportion Time Blocked																
Percent Grade (%)															0	
Right Turn Channelized																
Median Type Storage							Undivided									

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.10												6.40		6.20
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.20												3.50		3.30

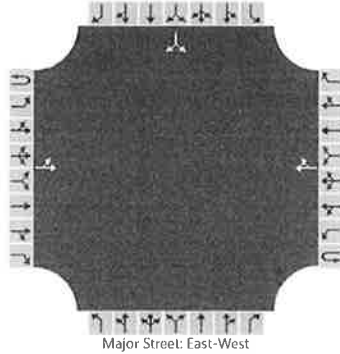
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		13														16	
Capacity, c (veh/h)		940														435	
v/c Ratio		0.01														0.04	
95% Queue Length, Q ₉₅ (veh)		0.0														0.1	
Control Delay (s/veh)		8.9														13.6	
Level of Service (LOS)		A														B	
Approach Delay (s/veh)		0.4												13.6			
Approach LOS														B			

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	HZ	Intersection	West 7th St and Site Drwy
Agency/Co.	Dynamic Traffic	Jurisdiction	Plainfield Township
Date Performed	1/16/2020	East/West Street	West 7th Street
Analysis Year	2022	North/South Street	Site Drwy
Time Analyzed	NB PM	Peak Hour Factor	0.95
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	3327-99-001T		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Priority																
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		4	541				581	3						4		16
Percent Heavy Vehicles (%)		0												0		0
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type Storage					Undivided											

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.10												6.40		6.20
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.20												3.50		3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		4														21	
Capacity, c (veh/h)		975														388	
v/c Ratio		0.00														0.05	
95% Queue Length, Q ₉₅ (veh)		0.0														0.2	
Control Delay (s/veh)		8.7														14.8	
Level of Service (LOS)		A														B	
Approach Delay (s/veh)		0.1												14.8			
Approach LOS														B			

HCS7 Two-Way Stop-Control Report

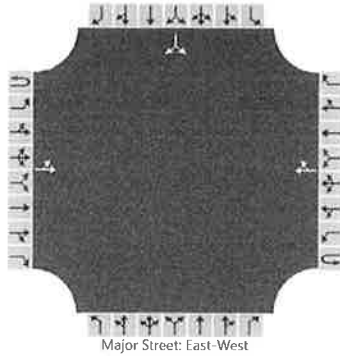
General Information

Analyst	HZ
Agency/Co.	Dynamic Traffic
Date Performed	1/16/2020
Analysis Year	2022
Time Analyzed	NB SAT
Intersection Orientation	East-West
Project Description	3327-99-001T

Site Information

Intersection	West 7th St and Site Drwy
Jurisdiction	Plainfield Township
East/West Street	West 7th Street
North/South Street	Site Drwy
Peak Hour Factor	0.95
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Priority																
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		12	508				516	3						2		14
Percent Heavy Vehicles (%)		0												0		0
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.10												6.40		6.20
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.20												3.50		3.30

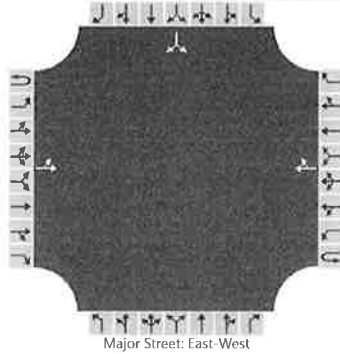
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		13														17	
Capacity, c (veh/h)		1033														464	
v/c Ratio		0.01														0.04	
95% Queue Length, Q ₉₅ (veh)		0.0														0.1	
Control Delay (s/veh)		8.5														13.0	
Level of Service (LOS)		A														B	
Approach Delay (s/veh)		0.3												13.0			
Approach LOS														B			

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	HZ	Intersection	West 7th St and Site Drwy
Agency/Co.	Dynamic Traffic	Jurisdiction	Plainfield Township
Date Performed	1/16/2020	East/West Street	West 7th Street
Analysis Year	2022	North/South Street	Site Drwy
Time Analyzed	BD AM	Peak Hour Factor	0.91
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	3327-99-001T		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Priority																
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		12	436				594	4						2		15
Percent Heavy Vehicles (%)		2												2		2
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.12												6.42		6.22
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.22												3.52		3.32

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		13														19	
Capacity, c (veh/h)		930														408	
v/c Ratio		0.01														0.05	
95% Queue Length, Q ₉₅ (veh)		0.0														0.1	
Control Delay (s/veh)		8.9														14.2	
Level of Service (LOS)		A														B	
Approach Delay (s/veh)		0.4												14.2			
Approach LOS														B			

HCS7 Two-Way Stop-Control Report

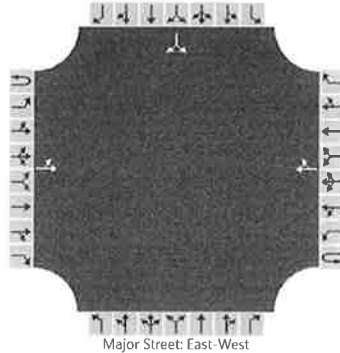
General Information

Analyst	HZ
Agency/Co.	Dynamic Traffic
Date Performed	1/16/2020
Analysis Year	2022
Time Analyzed	BD PM
Intersection Orientation	East-West
Project Description	3327-99-001T

Site Information

Intersection	West 7th St and Site Drwy
Jurisdiction	Plainfield Township
East/West Street	West 7th Street
North/South Street	Site Drwy
Peak Hour Factor	0.95
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Priority																
Number of Lanes	0	0	1	0	0	0	1	0	0	0	0		0	1	0	
Configuration		LT						TR							LR	
Volume (veh/h)		7	540				580	8						8		20
Percent Heavy Vehicles (%)		2												2		2
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.12												6.42		6.22
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.22												3.52		3.32

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		7														29	
Capacity, c (veh/h)		961														349	
v/c Ratio		0.01														0.08	
95% Queue Length, Q ₉₅ (veh)		0.0														0.3	
Control Delay (s/veh)		8.8														16.3	
Level of Service (LOS)		A														C	
Approach Delay (s/veh)		0.2												16.3			
Approach LOS														C			

HCS7 Two-Way Stop-Control Report

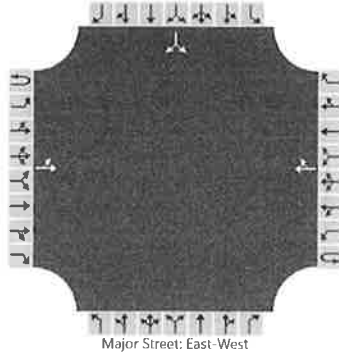
General Information

Analyst	HZ
Agency/Co.	Dynamic Traffic
Date Performed	1/16/2020
Analysis Year	2022
Time Analyzed	BD SAT
Intersection Orientation	East-West
Project Description	3327-99-001T

Site Information

Intersection	West 7th St and Site Drwy
Jurisdiction	Plainfield Township
East/West Street	West 7th Street
North/South Street	Site Drwy
Peak Hour Factor	0,95
Analysis Time Period (hrs)	0,25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Priority																
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		15	507				515	6						5		18
Percent Heavy Vehicles (%)		2												2		2
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.12												6.42		6.22
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.22												3.52		3.32

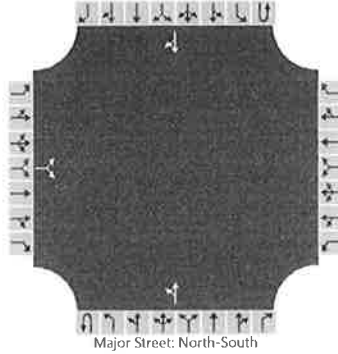
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		16														24	
Capacity, c (veh/h)		1021														414	
v/c Ratio		0.02														0.06	
95% Queue Length, Q ₉₅ (veh)		0.0														0.2	
Control Delay (s/veh)		8.6														14.2	
Level of Service (LOS)		A														B	
Approach Delay (s/veh)		0.4												14.2			
Approach LOS														B			

HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	HZ			Intersection	Arlington and Site Drwy		
Agency/Co.	Dynamic Traffic			Jurisdiction	Plainfield Township		
Date Performed	1/16/2020			East/West Street	Site Drwy		
Analysis Year	2020			North/South Street	Arlington AVE.		
Time Analyzed	EX AM			Peak Hour Factor	0.63		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	3327-99-001T						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound				
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	
Movement																	
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6	
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0	
Configuration			LR							LT						TR	
Volume (veh/h)		13		7						17	102				98	8	
Percent Heavy Vehicles (%)		8		0						0							
Proportion Time Blocked																	
Percent Grade (%)		0															
Right Turn Channelized																	
Median Type Storage		Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1							
Critical Headway (sec)		6.48		6.20						4.10							
Base Follow-Up Headway (sec)		3.5		3.3						2.2							
Follow-Up Headway (sec)		3.57		3.30						2.20							

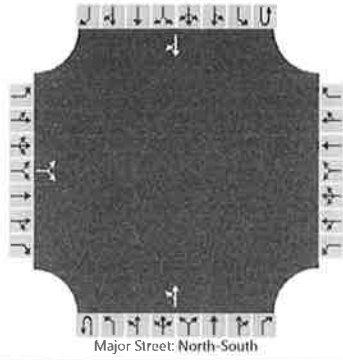
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			32							27							
Capacity, c (veh/h)			676							1422							
v/c Ratio			0.05							0.02							
95% Queue Length, Q ₉₅ (veh)			0.1							0.1							
Control Delay (s/veh)			10.6							7.6							
Level of Service (LOS)			B							A							
Approach Delay (s/veh)		10.6								1.2							
Approach LOS		B								A							

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	HZ	Intersection	Arlington and Site Drwy
Agency/Co.	Dynamic Traffic	Jurisdiction	Plainfield Township
Date Performed	1/16/2020	East/West Street	Site Drwy
Analysis Year	2020	North/South Street	Arlington AVE.
Time Analyzed	EX PM	Peak Hour Factor	0.76
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	3327-99-001T		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement									1U				4U			
Priority		10	11	12		7	8	9		1	2	3		4	5	6
Number of Lanes		0	1	0		0	0	0		0	1	0		0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		5		9						21	80				46	9
Percent Heavy Vehicles (%)		0		0						0						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.40		6.20						4.10						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.50		3.30						2.20						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			18							28						
Capacity, c (veh/h)			896							1540						
v/c Ratio			0.02							0.02						
95% Queue Length, Q ₉₅ (veh)			0.1							0.1						
Control Delay (s/veh)			9.1							7.4						
Level of Service (LOS)			A							A						
Approach Delay (s/veh)	9.1								1.6							
Approach LOS	A															

HCS7 Two-Way Stop-Control Report

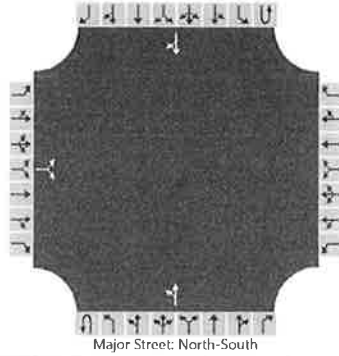
General Information

Analyst	HZ
Agency/Co.	Dynamic Traffic
Date Performed	1/16/2020
Analysis Year	2020
Time Analyzed	EX PM
Intersection Orientation	North-South
Project Description	3327-99-001T

Site Information

Intersection	Arlington and Site Drwy
Jurisdiction	Plainfield Township
East/West Street	Site Drwy
North/South Street	Arlington AVE.
Peak Hour Factor	0.85
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound					
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R		
Movement																		
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6		
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0		
Configuration			LR							LT						TR		
Volume (veh/h)		8		15						16	77					46	12	
Percent Heavy Vehicles (%)		0		7						0								
Proportion Time Blocked																		
Percent Grade (%)		0																
Right Turn Channelized																		
Median Type Storage		Undivided																

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1							
Critical Headway (sec)		6.40		6.27						4.10							
Base Follow-Up Headway (sec)		3.5		3.3						2.2							
Follow-Up Headway (sec)		3.50		3.36						2.20							

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			27							19							
Capacity, c (veh/h)			912							1546							
v/c Ratio			0.03							0.01							
95% Queue Length, Q ₉₅ (veh)			0.1							0.0							
Control Delay (s/veh)			9.1							7.4							
Level of Service (LOS)			A							A							
Approach Delay (s/veh)		9.1								1.3							
Approach LOS		A															

HCS7 Two-Way Stop-Control Report

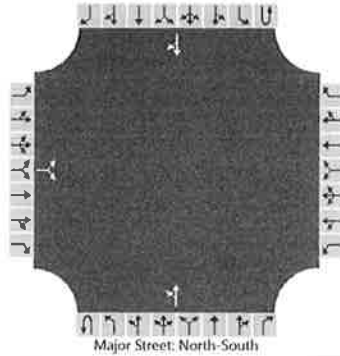
General Information

Analyst	HZ
Agency/Co.	Dynamic Traffic
Date Performed	1/16/2020
Analysis Year	2022
Time Analyzed	NB AM
Intersection Orientation	North-South
Project Description	3327-99-001T

Site Information

Intersection	Arlington and Site Drwy
Jurisdiction	Plainfield Township
East/West Street	Site Drwy
North/South Street	Arlington AVE.
Peak Hour Factor	0.63
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound					
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R		
Movement																		
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6		
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0		
Configuration			LR								LT						TR	
Volume (veh/h)		13		7						17	104					100	8	
Percent Heavy Vehicles (%)		8		0						0								
Proportion Time Blocked																		
Percent Grade (%)		0																
Right Turn Channelized																		
Median Type Storage		Undivided																

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1							
Critical Headway (sec)		6.48		6.20						4.10							
Base Follow-Up Headway (sec)		3.5		3.3						2.2							
Follow-Up Headway (sec)		3.57		3.30						2.20							

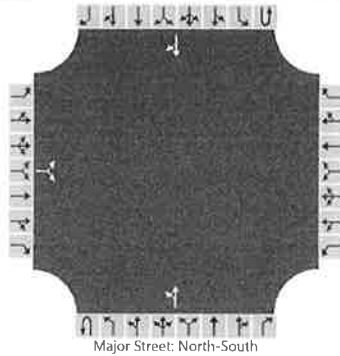
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			32							27							
Capacity, c (veh/h)			671							1418							
v/c Ratio			0.05							0.02							
95% Queue Length, Q ₉₅ (veh)			0.1							0.1							
Control Delay (s/veh)			10.6							7.6							
Level of Service (LOS)			B							A							
Approach Delay (s/veh)		10.6								1.2							
Approach LOS		B								A							

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	HZ	Intersection	Arlington and Site Drwy
Agency/Co.	Dynamic Traffic	Jurisdiction	Plainfield Township
Date Performed	1/16/2020	East/West Street	Site Drwy
Analysis Year	2022	North/South Street	Arlington AVE.
Time Analyzed	NB PM	Peak Hour Factor	0.76
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	3327-99-001T		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound				
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	
Movement									1U	1	2	3	4U	4	5	6	
Priority		10	11	12		7	8	9									
Number of Lanes		0	1	0		0	0	0		0	1	0		0	1	0	
Configuration			LR							LT						TR	
Volume (veh/h)		5		9						21	82				47	9	
Percent Heavy Vehicles (%)		0		0						0							
Proportion Time Blocked																	
Percent Grade (%)		0															
Right Turn Channelized																	
Median Type Storage		Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.40		6.20						4.10						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.50		3.30						2.20						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			18							28								
Capacity, c (veh/h)			893							1539								
v/c Ratio			0.02							0.02								
95% Queue Length, Q ₉₅ (veh)			0.1							0.1								
Control Delay (s/veh)			9.1							7.4								
Level of Service (LOS)			A							A								
Approach Delay (s/veh)		9.1									1.6							
Approach LOS		A																

HCS7 Two-Way Stop-Control Report

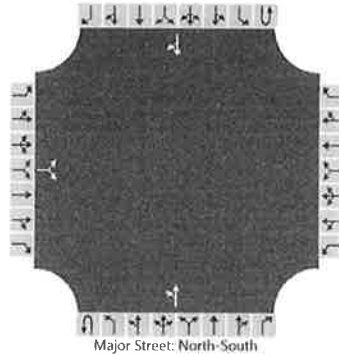
General Information

Analyst	HZ
Agency/Co.	Dynamic Traffic
Date Performed	1/16/2020
Analysis Year	2022
Time Analyzed	NB SAT
Intersection Orientation	North-South
Project Description	3327-99-001T

Site Information

Intersection	Arlington and Site Drwy
Jurisdiction	Plainfield Township
East/West Street	Site Drwy
North/South Street	Arlington AVE.
Peak Hour Factor	0.85
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement																
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0		0	1	0		0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		8		15						16	79				47	12
Percent Heavy Vehicles (%)		0		0						0						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.40		6.20						4.10						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.50		3.30						2.20						

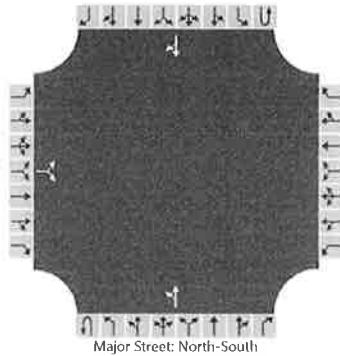
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			27							19						
Capacity, c (veh/h)			920							1544						
v/c Ratio			0.03							0.01						
95% Queue Length, Q ₉₅ (veh)			0.1							0.0						
Control Delay (s/veh)			9.0							7.4						
Level of Service (LOS)			A							A						
Approach Delay (s/veh)	9.0								1.3							
Approach LOS	A															

HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	HZ			Intersection	Arlington and Site Drwy		
Agency/Co.	Dynamic Traffic			Jurisdiction	Plainfield Township		
Date Performed	1/16/2020			East/West Street	Site Drwy		
Analysis Year	2022			North/South Street	Arlington AVE.		
Time Analyzed	BD AM			Peak Hour Factor	0.63		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	3327-99-001T						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement																
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		15		8						18	104				100	9
Percent Heavy Vehicles (%)		8		2						2						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.48		6.22						4.12						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.57		3.32						2.22						

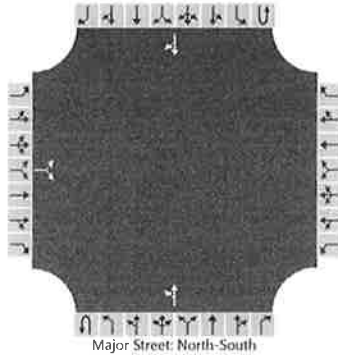
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			37							29						
Capacity, c (veh/h)			666							1404						
v/c Ratio			0.05							0.02						
95% Queue Length, Q ₉₅ (veh)			0.2							0.1						
Control Delay (s/veh)			10.7							7.6						
Level of Service (LOS)			B							A						
Approach Delay (s/veh)	10.7								1.3							
Approach LOS	B															

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	HZ	Intersection	Arlington and Site Drwy
Agency/Co.	Dynamic Traffic	Jurisdiction	Plainfield Township
Date Performed	1/16/2020	East/West Street	Site Drwy
Analysis Year	2022	North/South Street	Arlington AVE.
Time Analyzed	BD PM	Peak Hour Factor	0.76
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	3327-99-001T		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound				
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	
Movement																	
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6	
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0	
Configuration			LR							LT						TR	
Volume (veh/h)		8		11						24	82					47	
Percent Heavy Vehicles (%)		8		2						2							
Proportion Time Blocked																	
Percent Grade (%)		0															
Right Turn Channelized																	
Median Type Storage	Undivided																

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.48		6.22						4.12						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.57		3.32						2.22						

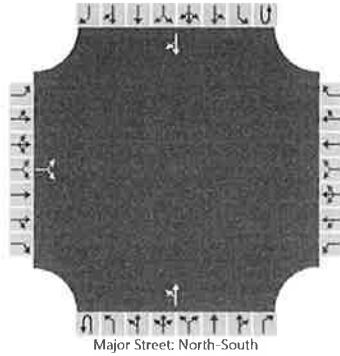
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			25							32						
Capacity, c (veh/h)			854							1518						
v/c Ratio			0.03							0.02						
95% Queue Length, Q ₉₅ (veh)			0.1							0.1						
Control Delay (s/veh)			9.3							7.4						
Level of Service (LOS)			A							A						
Approach Delay (s/veh)	9.3								1.8							
Approach LOS	A															

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	HZ	Intersection	Arlington and Site Drwy
Agency/Co.	Dynamic Traffic	Jurisdiction	Plainfield Township
Date Performed	1/16/2020	East/West Street	Site Drwy
Analysis Year	2022	North/South Street	Arlington AVE.
Time Analyzed	BD SAT	Peak Hour Factor	0.85
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	3327-99-001T		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound				
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	
Movement																	
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6	
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0	
Configuration			LR							LT						TR	
Volume (veh/h)		12		17						18	79					47	17
Percent Heavy Vehicles (%)		8		2						2							
Proportion Time Blocked																	
Percent Grade (%)		0															
Right Turn Channelized																	
Median Type Storage		Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1							
Critical Headway (sec)		6.48		6.22						4.12							
Base Follow-Up Headway (sec)		3.5		3.3						2.2							
Follow-Up Headway (sec)		3.57		3.32						2.22							

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			34							21							
Capacity, c (veh/h)			886							1524							
v/c Ratio			0.04							0.01							
95% Queue Length, Q ₉₅ (veh)			0.1							0.0							
Control Delay (s/veh)			9.2							7.4							
Level of Service (LOS)			A							A							
Approach Delay (s/veh)		9.2								1.5							
Approach LOS		A															

Appendix D
Parking Analysis

Location: 206 W. 7th St.

 Date: 1/9/20 + 1/11/20

 Municipality: Plainfield

 Enumerator: Dennis Sr.

 Total # of Spaces: 22

 Job #: 3327-99-001T

	Parking Count
7:00 AM	2
7:15 AM	3
7:30 AM	3
7:45 AM	7
8:00 AM	4
8:15 AM	6
8:30 AM	7
8:45 AM	8
4:30 PM	9
4:45 PM	9
5:00 PM	10
5:15 PM	14
5:30 PM	13
5:45 PM	12
6:00 PM	14
6:15 PM	13

	Parking Count	
11:00 AM	15	
11:15 AM	11	
11:30 AM	12	
11:45 AM	13	
12:00 PM	14	
12:15 PM	14	
12:30 PM	15	
12:45 PM	15	
1:00 AM	14	
1:15 AM	14	
1:30 AM	12	
1:45 AM	13	

Table 3327-99-001T
 Project: Mixed- Use Development

SHARED PARKING DEMAND SUMMARY

PEAK MONTH: JANUARY - PEAK PERIOD: 7 PM, WEEKDAY

Land Use	Project Data Quantity Unit	Weekday				Weekend				Estimated Parking Demand	Estimated Parking Demand				
		Base Rate	Mode Adj	Non- Captive Ratio	Project Rate	Unit	Base Rate	Mode Adj	Non- Captive Ratio			Project Rate	Unit		
														Peak Hr Adj 7 PM	Peak Mo Adj January
Community Shopping Center (<400 ksf) Employee	1,117 sf GLA	2.68	1.00	1.00	2.68	/ksf GLA	1.00	1.00	2.68	/ksf GLA	2	0.56	0.75	0.80	1
Residential, Rental, Shared Spaces Reserved Guest	12 units sp/unit units	0.91	1.00	1.00	0.91	/unit	1.00	1.00	0.91	/unit	11	1.00	0.87	1.00	11
		0	1.00	1.00	0	/unit	1.00	1.00	0	/unit	0	1.00	1.00	1.00	0
		0	1.00	1.00	0	/unit	1.00	1.00	0	/unit	1	1.00	1.00	1.00	1
											Customer Employee Reserved Total	3 12 0 15	Customer Employee Reserved Total	2 12 0 14	

ULI base data have been modified from default values.

Peak Month Daily Parking Demand by Hour

