TRAFFIC IMPACT STUDY

For

Proposed Mixed-Use Development

Property Located at:

270 & 299 Irvington Avenue (CR 665)
Block 2102 – Lots 14-20 & Block 2107 – Lot 1
Village of South Orange, Essex County, NJ

Prepared by:

DYNAMIC TRAFFIC

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April 15, 2021

3608-99-001TE

CGH

INTRODUCTION

It is proposed to construct a mixed-use development consisting of a total of 61 residential dwelling units and 17,523 SF of retail space (The Project) on parcels of land located along Irvington Avenue between West Fairview Avenue and Tichenor Avenue in the Village of South Orange, Essex County, New Jersey, see Figure 1, in Appendix A. The site is designated as Block 2102 – Lots 14-20 (270 Irvington Avenue) and Block 2107 – Lot 1 (299 Irvington Avenue) on the Village Tax Maps. 270 Irvington Avenue is currently partially developed with various residential/commercial structures and parking areas while 299 Irvington Avenue is currently developed with a 1-story commercial building.

At 270 Irvington Avenue, it is proposed to raze the existing structures and construct three (3) buildings totaling 49 residential dwelling units and 14,681 SF of retail space. At 299 Irvington Avenue, it is proposed to construct 3 additional stories above the existing building and will contain 12 residential dwelling units and 2,842 SF of ground floor retail space. Access to 270 Irvington Avenue is currently provided via multiple driveways/curb cuts along Irvington Avenue. It is proposed to close the existing access points and construct one (1) new full movement driveway along Irvington Avenue opposite Fairview Avenue. Access to 299 Irvington Avenue is currently provided via one (1) full movement driveway along Irvington Avenue opposite West Fairview Avenue which will remain. Parking will be provided via one hundred twenty-one (121) on-site parking spaces at 270 Irvington Avenue and six (6) on-site parking spaces at 299 Irvington Avenue for a total on-site parking supply of one hundred twenty-seven (127) parking spaces.

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 morning and weekday evening peak periods at the intersections of Irvington Avenue with Fairview Avenue and Irvington Avenue with West Fairview Avenue/the existing site driveway.

- Projections of traffic to be generated by The Project 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 and the site driveways.

- The proposed site driveways 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 parking layout and supply was assessed based on accepted design standards 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:

Irvington Avenue (CR 665) is an Urban Minor Arterial roadway under the jurisdiction of Essex County. In the vicinity of the site the posted speed limit is 25 MPH and the roadway provides one travel lane in each direction. It should be noted that Irvington Avenue is designated as an east/west roadway; however, it was assumed to have a north/south orientation for the purposes of this report. On-street parking is permitted along both sides of the roadway with curb and sidewalk provided along both sides of the roadway. Irvington Avenue provides a slightly curved horizontal alignment and an uphill vertical alignment from north to south. The land uses along Irvington Avenue in the vicinity of The Project are a mix of commercial and residential.

Fairview Avenue is a local roadway under the jurisdiction of the Village of South Orange. In the vicinity of the site the posted speed limit is 25 MPH and the roadway provides one travel lane in each direction with a general east/west orientation. On-street parking is permitted along both sides of the roadway with curb and sidewalk provided along both sides of the roadway. Fairview Avenue provides a straight horizontal alignment and a relatively flat vertical alignment. The land uses along Fairview Avenue in the vicinity of The Project are primarily residential. The roadway traverses for approximately 0.30 miles between Irvington Avenue to the south and South Orange Avenue to the north.

West Fairview Avenue is a local roadway under the jurisdiction of the Village of South Orange. In the vicinity of the site the speed limit is not posted and the roadway provides one travel lane in each direction with a general east/west orientation. On-street parking is permitted along both sides of the roadway with curb and sidewalk provided along both sides of the roadway. West Fairview Avenue provides a straight horizontal alignment and a relatively flat vertical alignment. The land uses along West Fairview Avenue in the vicinity of The Project are primarily residential. The roadway traverses for approximately 650 feet between Irvington Avenue to the north and Village Road to the south.

Existing Pedestrian Facilities

Pedestrian facilities are provided in the form of sidewalk along both sides of Irvington Avenue, both sides of Fairview Avenue and both sides of West Fairview Avenue. The sidewalks along each of these roadways extend throughout the immediate area surrounding the site and are interconnected with other streets well beyond the blocks in which the site is located. Additionally, crosswalks are provided across Irvington Avenue at its intersection with West Fairview, across Fairview Avenue at its intersection with Irvington Avenue and across West Fairview Avenue at its intersection with Irvington Avenue. Therefore, the area surrounding the site provides a very accessible network of pedestrian facilities for future tenants/customers of the proposed development.

Existing Traffic Volumes

Manual turning movement (MTM) counts were conducted on Wednesday, October 21, 2020 between 7:00 – 9:00 AM and between 4:30 – 6:30 PM at the intersections of Irvington Avenue with Fairview Avenue and Irvington Avenue with West Fairview Avenue/ the existing site driveway as well as on Wednesday, October 28 2020 between 7:30 – 8:30 AM and between 5:30 – 6:30 PM at the intersection of Valley Street and 3rd Street.

It should be noted that traffic impacts associated with the COVID-19 pandemic were in effect as of the time of the traffic counts. As a result, current traffic volumes on the surrounding roadways are atypically low at this time and would not be representative of "existing" traffic conditions. Therefore, historical traffic volume data has been reviewed and compared with current traffic conditions.

MTM counts were previously conducted by this firm in June 2017 during the AM and PM peak hours at the intersection of Valley Street and 3rd Street. In order to better represent 2020 traffic volumes, the 2017 MTM peak hour volumes were grown utilizing an annual growth rate contained within the NJDOT Annual Background Growth Rate Table, which indicates a growth rate of 2% per year, for a period of three (3) years. The MTM traffic volumes representative of "existing" conditions were then compared to the October 2020 MTM peak hour volumes. Adjustment factors of 1.73 and 1.13 were then calculated and applied to the weekday morning and weekday evening counts, respectively, to develop traffic volumes that best represent "existing" conditions at the study intersections.

Review of the collected traffic data reveals that the weekday morning peak street hour (PSH) of the network occurs between 8:00 – 9:00 AM and the weekday evening network PSH occurs between 5:00 – 6:00 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 based on the *Highway Capacity Manual 2010*, 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.

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.

All capacity analyses were performed utilizing the Highway Capacity Software (HCS 7). 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
Irvington Avenue and Fairview Avenue	WB	LR	B (14)	B (13)
	SB	LT	A (8)	A (8)
Irvington Avenue and West Fairview Avenue/Site Driveway	EB	LTR	B (14)	B (14)
	WB	LTR	B (15)	C (15)
	NB	LTR	A (8)	A (8)
	SB	LTR	A (8)	A (8)

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

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

Irvington Avenue and Fairview Avenue

Fairview Avenue intersects Irvington Avenue to form a an unsignalized T-intersection with Fairview Avenue under stop control. The northbound and southbound approaches of Irvington Avenue provide a shared through/right turn lane and a shared left turn/through lane, respectively. The westbound approach of Fairview Avenue provides a shared turn lane for left and right turns.

A review of the existing analysis reveals that the individual intersection movements operate at Level of Service "B" or better during the analyzed peak periods. See Table II for the individual movement Levels of Service and delays.

Irvington Avenue and West Fairview Avenue/Site Driveway

West Fairview Avenue/the site driveway intersect Irvington Avenue to form an unsignalized four-leg intersection with West Fairview Avenue and the site driveway under stop control. The northbound and southbound approaches of Irvington Avenue each provides a shared left turn/through/right turn lane. The eastbound approach of West Fairview Avenue provides a shared left turn/through/right turn lane. The westbound approach of the site driveway provides a shared left turn/through/right turn lane.

A review of the existing analysis reveals that the individual intersection movements operate at Level of Service "C" 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 Future No Build and Build conditions. The No Build conditions provide a baseline for assessing the impact of site development traffic on the roadway system. The process of developing the No Build and Build traffic volumes and the subsequent analyses is outlined below.

Regardless of whether the subject site is developed or not, traffic volumes on the surrounding roadways are expected to increase as a result of developments throughout the region. A growth rate for roadways within the study area was obtained from the NJDOT Annual Background Growth Rate Table, which indicates a growth rate of 2% per year.

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

Future No Build traffic volumes were developed by applying the background growth rate of 2% for two (2) years to the study area roadways existing traffic volumes. Figure 3, in Appendix A, shows the Future No Build traffic volumes.

Traffic Generation

Projections of future traffic volumes were developed utilizing data as published in the Institute of Transportation Engineers (ITE) publication *Trip Generation, 10th Edition* for Land Use Code (LUC) 221 – Multifamily Housing (Mid-Rise) and LUC 820 – Shopping Center. Table III summarizes the projected trips generated by the proposed development utilizing the ITE data.

Table III
Trip Generation

Land Use		AM PSH			PM PSH		
		In	Out	Total	In	Out	Total
270 Irvington Avenue	49 Residential Units	4	13	17	13	9	22
	14,681 SF of Retail	9	5	14	27	29	56
	Total	**13**	**18**	**31**	**40**	**38**	**78**
299 Irvington Avenue	12 Residential Units	1	3	4	4	2	6
	2,842 SF of Retail	2	1	3	5	6	11
	Total	**3**	**4**	**7**	**9**	**8**	**17**
Combined Total	**61 Residential Units**	**5**	**16**	**21**	**17**	**11**	**28**
	17,523 SF of Retail	**11**	**6**	**17**	**32**	**35**	**67**
	Total	**16**	**22**	**38**	**49**	**46**	**95**

It should be noted that within a half mile of the site there is access to NJ Transit bus lines 92 and 107 and within ¾ of a mile from the site there is access to the NJ Transit South Orange Rail Station. This proximity to mass transit will likely be an attractive feature to future residential tenants. However, no adjustments are made to the ITE trip rate data to account for the likely utilization of mass transit for daily commutation purposes for the future tenants of the proposed building.

Once the magnitude of traffic to be generated by the site is known, it is necessary to assign that traffic to the adjacent street system. The distribution of new traffic to the surrounding roadways is based on the location of primary arterial roadways, major signalized intersections and existing traffic patterns. Located in Appendix A, Figures 4 and 5 illustrate the percent distribution and site generated traffic volumes, respectively, for 270 Irvington Avenue and Figures 6 and 7 illustrate the percent distribution and site generated traffic volumes, respectively, for 299 Irvington Avenue. Figure 8 illustrates the total site generated volumes assigned to the study area network. The site generated volumes were then added to the Future No Build traffic volumes to generate the Future Build traffic volumes, which are shown in Figure 9.

Future Capacity Analysis

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

Table IV
Future Levels of Service

Intersection	Direction/ Movement		AM PSH		PM PSH	
			No Build	Build	No Build	Build
Irvington Avenue and Fairview Avenue/Site Driveway	EB	LTR	-	C (17)	-	C (19)
	WB	LR	B (14)	-	B (13)	-
		LTR	-	C (16)	-	C (16)
	NB	LTR	-	A (8)	-	A (9)
	SB	LT	A (8)	-	A (8)	-
		LTR	-	A (8)	-	A (8)
Irvington Avenue and West Fairview Avenue/Site Driveway	EB	LTR	B (15)	C (16)	B (14)	C (16)
	WB	LTR	B (15)	C (15)	C (16)	C (16)
	NB	LTR	A (8)	A (8)	A (8)	A (9)
	SB	LTR	A (8)	A (8)	A (8)	A (8)

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

Irvington Avenue and Fairview Avenue/Site Driveway

The site driveway is proposed to intersect Irvington Avenue opposite Fairview Avenue to form an unsignalized four-leg intersection with Fairview Avenue and the site driveway under stop control. The northbound and westbound approaches of Irvington Avenue are each proposed to provide a shared left turn/through/right turn lane. The westbound approach of Fairview Avenue is proposed to provide a shared left turn/through/right turn lane. The eastbound approach of the site driveway is proposed to provide a shared left turn/through/right turn lane.

As designed and with the addition of the site traffic, the individual intersection movements are anticipated to operate at Level of Service "C" or better during the analyzed peak periods. See Table IV for the individual movement Levels of Service and delays.

Irvington Avenue and West Fairview Avenue

With the addition of the site traffic, the individual intersection movements are anticipated to operate at Level of Service "C" during the analyzed peak periods. See Table IV for the individual movement Levels of Service and delays.

Based on the results outlined above, it is apparent that the surrounding roadway network as currently designed has the ability to handle the additional traffic volumes associated with the proposed development. As such, no mitigation measures are proposed in conjunction with The Project.

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 270 Irvington Avenue will be provided via one (1) full movement driveway along Irvington Avenue opposite Fairview Avenue and access to 299 Irvington Avenue will continue to be provided via one (1) full movement driveway along Irvington Avenue opposite West Fairview Avenue. This driveway layout offers sufficient geometry to allow safe and efficient access of the site.

The newly constructed parking areas will be serviced by parking aisles with widths that will allow for two-way circulation and 90-degree parking. These dimensions are consistent with accepted engineering design standards and will adequately accommodate the anticipated site traffic.

Parking

The 270 Irvington Avenue Redevelopment Plan sets forth a parking requirement of 1.5 parking spaces per unit for residential uses, 1 parking space per 1,000 SF for commercial uses. With 61 residential units and 17,523 SF of retail space proposed, this equates to a parking requirement of 109 spaces plus 5 for the flex space for a total parking requirement of 109 spaces. Additionally, the Redevelopment Plan sets forth a requirement that a total of 5 parking spaces shall be provided for flex spaces. Therefore, the total parking requirement equates to 114 spaces. The site as proposed provides 127 parking spaces, and as such the Redevelopment Plan requirements are exceeded.

It is proposed to provide parking stalls with dimensions of 9'x18' which meets the Redevelopment Plan requirement of 9'x18'. These dimensions are also consistent with accepted engineering design standards and as such will adequately accommodate the anticipated site traffic.

Loading

At 270 Irvington Avenue, the Redevelopment Plan sets forth a minimum loading requirement of 1 loading space per 18,000 SF of commercial space and 1 additional loading space for each 18,000 SF thereafter. With 14, 681 SF of retail space proposed, this equates to a loading requirement of 1 loading space. At 299 Irvington Avenue, the Redevelopment Plan sets forth a minimum loading requirement 1 loading space. The site as proposed provides 1 loading space at 270 Irvington Avenue and 1 loading space at 299 Irvington Avenue along Irvington Avenue and as such the Redevelopment Plan requirements are met.

FINDINGS & CONCLUSIONS

Findings

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

- The proposed 61 residential units and 17,523 SF of retail are projected to generate 16 entering trips and 22 exiting trips during the morning peak hour and 49 entering trips and 46 exiting trips during the evening peak hour. This is a conservative assessment of trip generation without taking credit for mass transit availability.

- Access to 270 Irvington Avenue will be provided via one (1) full movement driveway along Irvington Avenue opposite Fairview Avenue and access to 299 Irvington Avenue will continue to be provided via one (1) full movement driveway along Irvington Avenue opposite West Fairview Avenue.

- As designed and with the addition of the site generated traffic, the individual intersection movements of Irvington Avenue and Fairview Avenue/the site driveway are anticipated to operate at Level of Service "C" or better during the studied peak hours.

- With the addition of the site generated traffic, the individual intersection movements of Irvington Avenue and West Fairview Avenue/the site driveway are anticipated to operate at Level of Service "C" or better during the studied peak hours.

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

- The proposed parking supply and design is sufficient to support the projected demand and exceeds the Redevelopment Plan requirements.

Conclusions

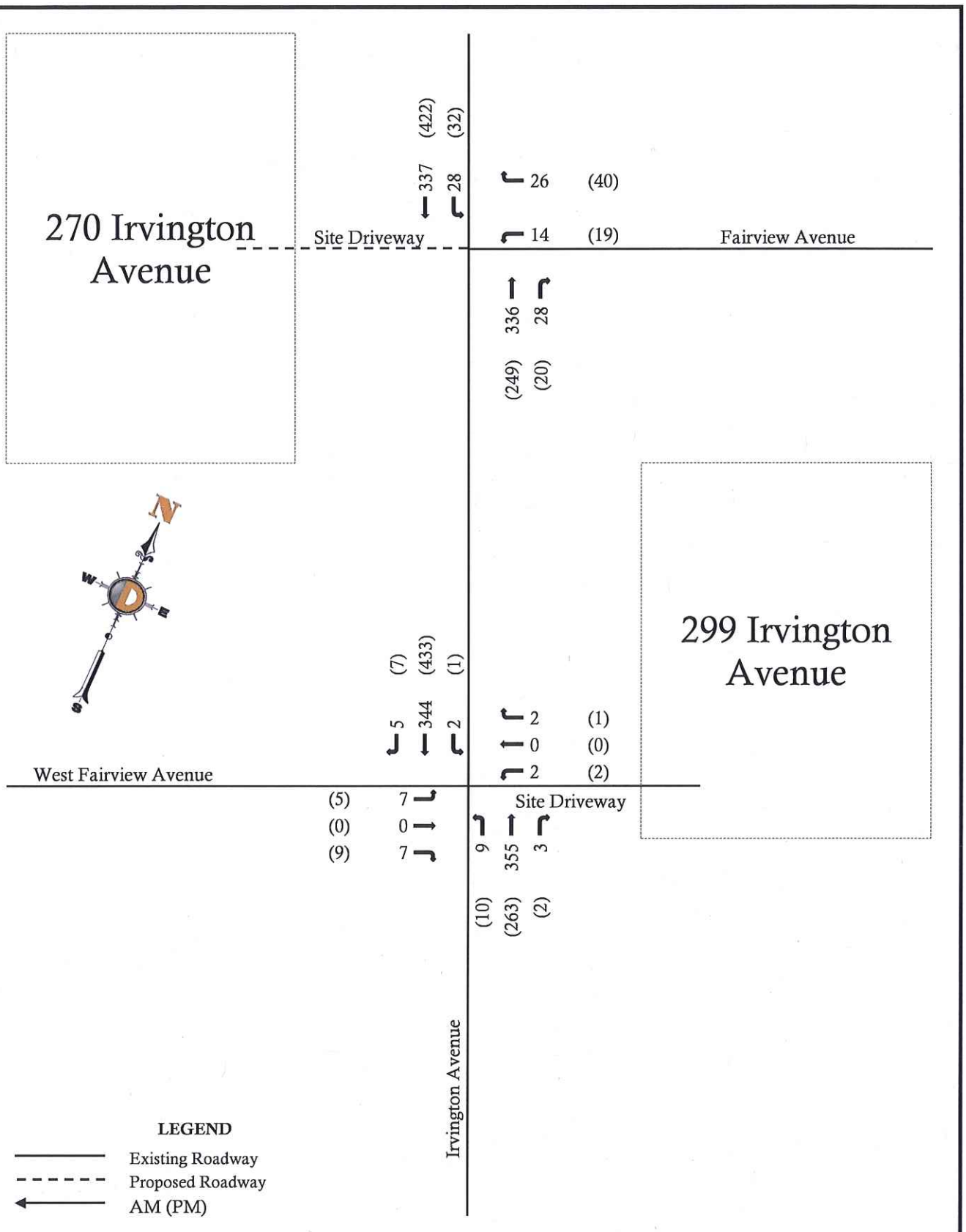
Based upon our Traffic Impact Study as detailed in the body of this report, it is the professional opinion of Dynamic Traffic, LLC that the adjacent street system of the Village of South Orange and Essex County will not experience any significant degradation in operating conditions with the construction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

Appendix A
Traffic Volume Figures

Proposed Mixed-Use Development
Traffic Impact Study
3608-99-001TE
4/15/2021

Figure 1

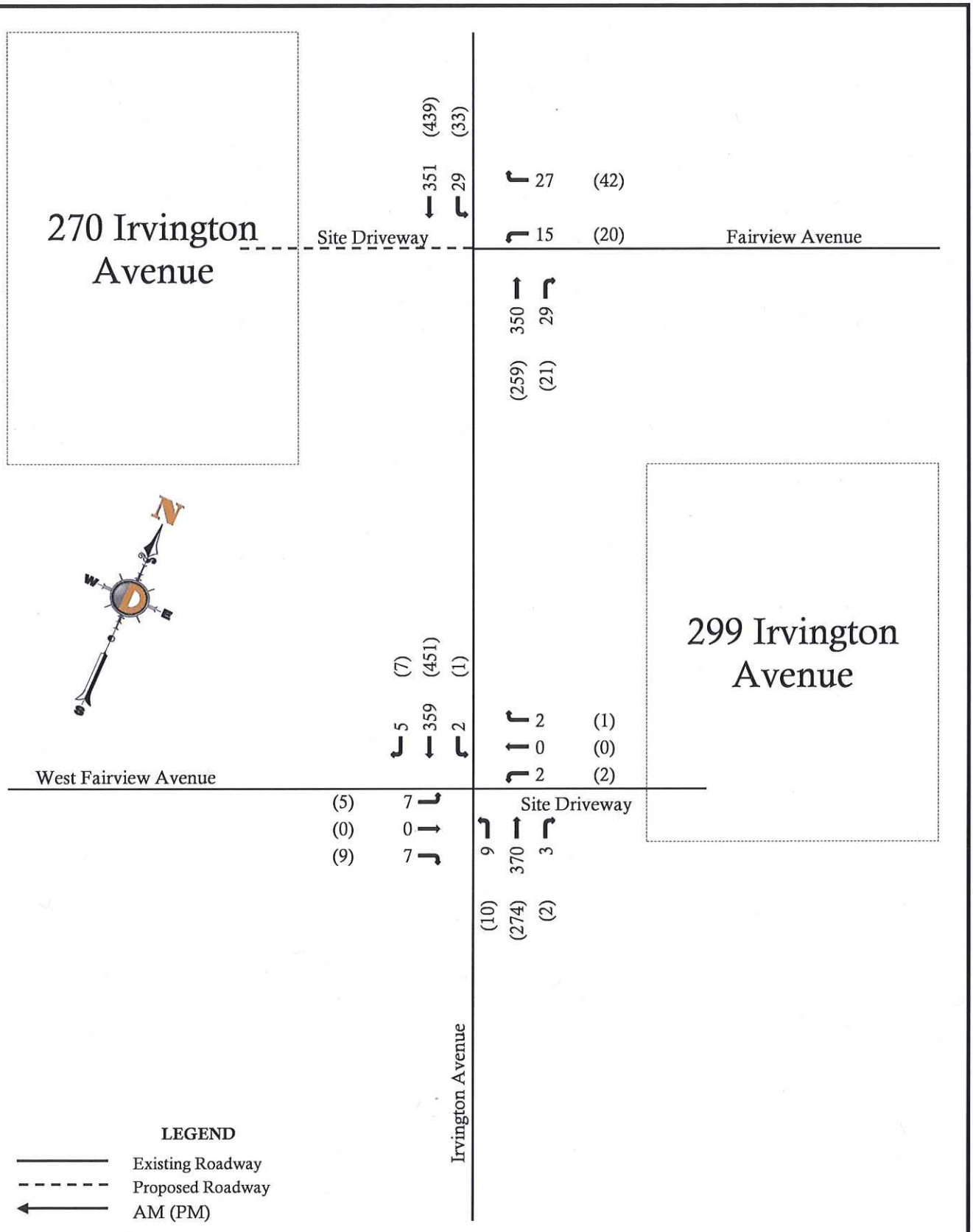
Site Location Map



Proposed Mixed-Use Development
Traffic Impact Study
3608-99-001TE
4/15/2021

Figure 2

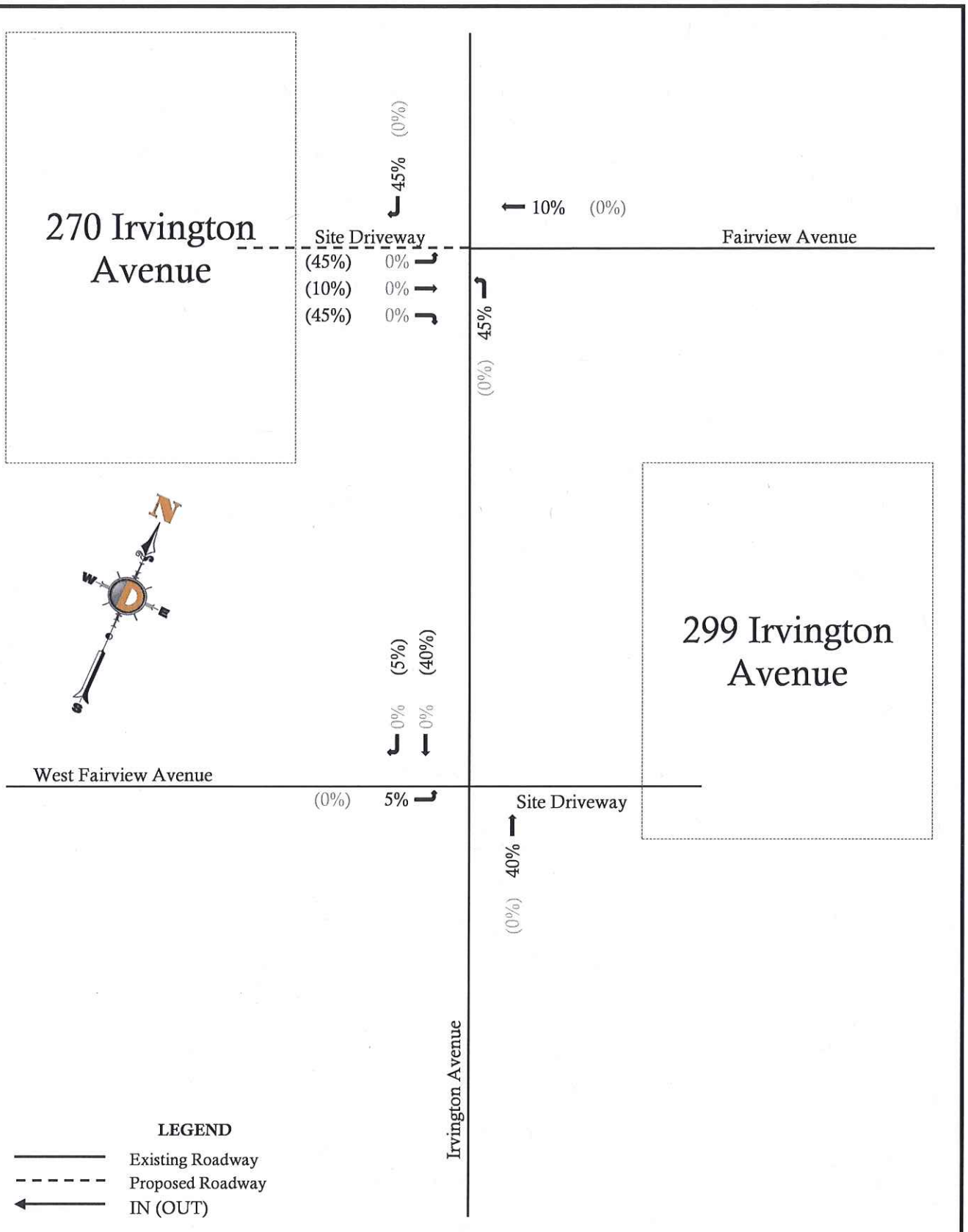
Existing Traffic Volumes



Proposed Mixed-Use Development
Traffic Impact Study
3608-99-001TE
4/15/2021

Figure 3

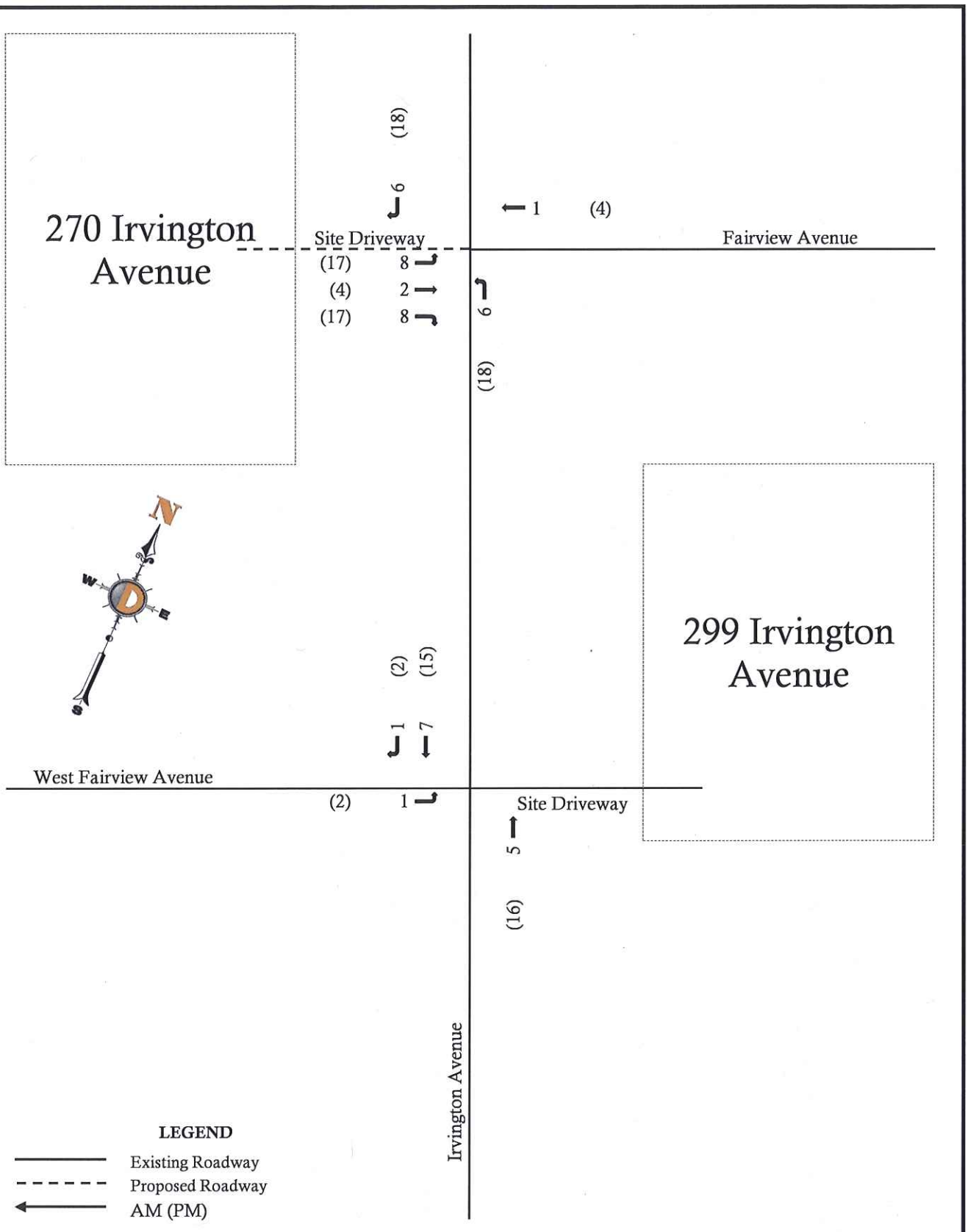
No Build Traffic Volumes



Proposed Mixed-Use Development
Traffic Impact Study
3608-99-001TE
4/15/2021

Figure 4

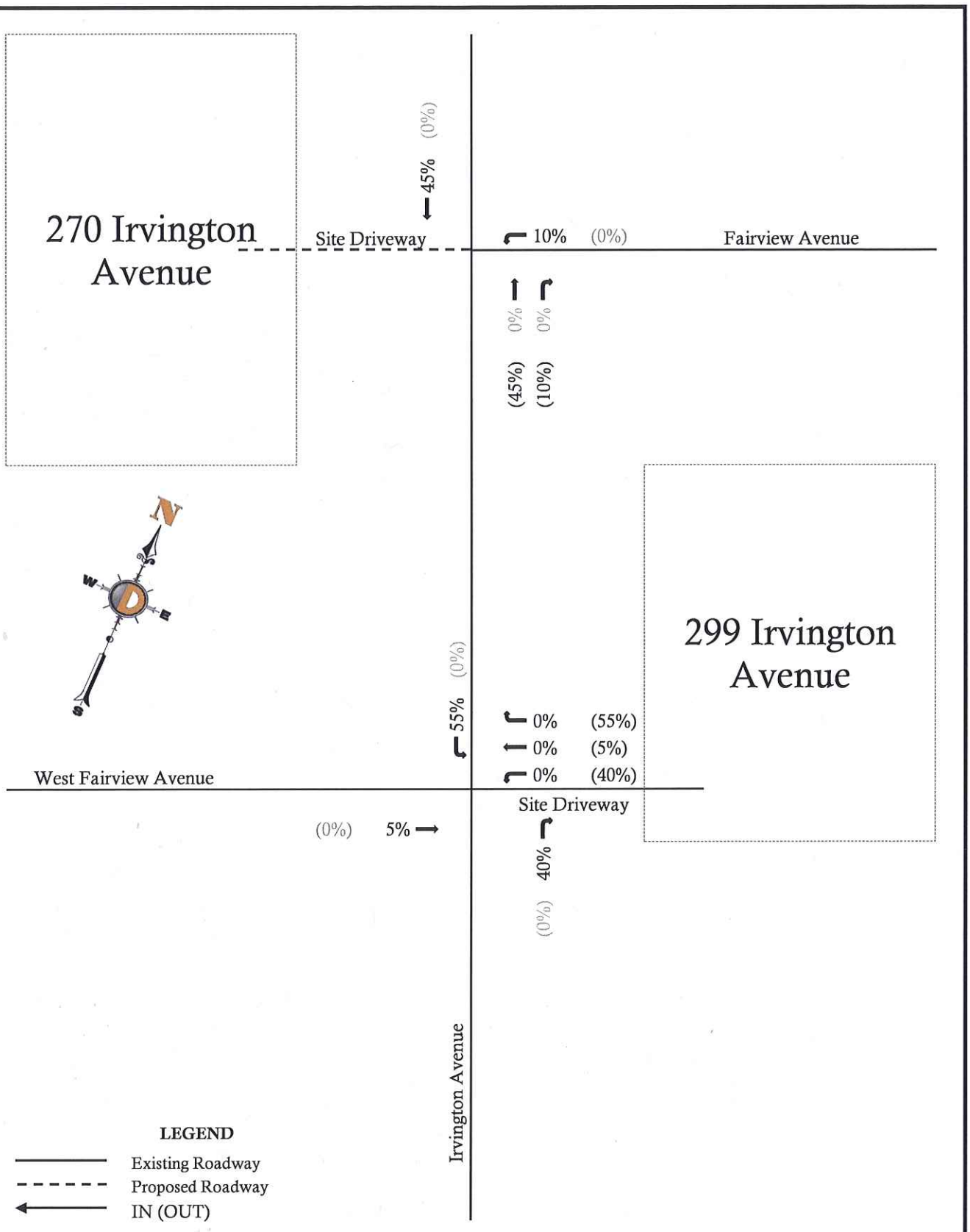
Percent Distribution - 270 Irvington Avenue



Proposed Mixed-Use Development
Traffic Impact Study
3608-99-001TE
4/15/2021

Figure 5

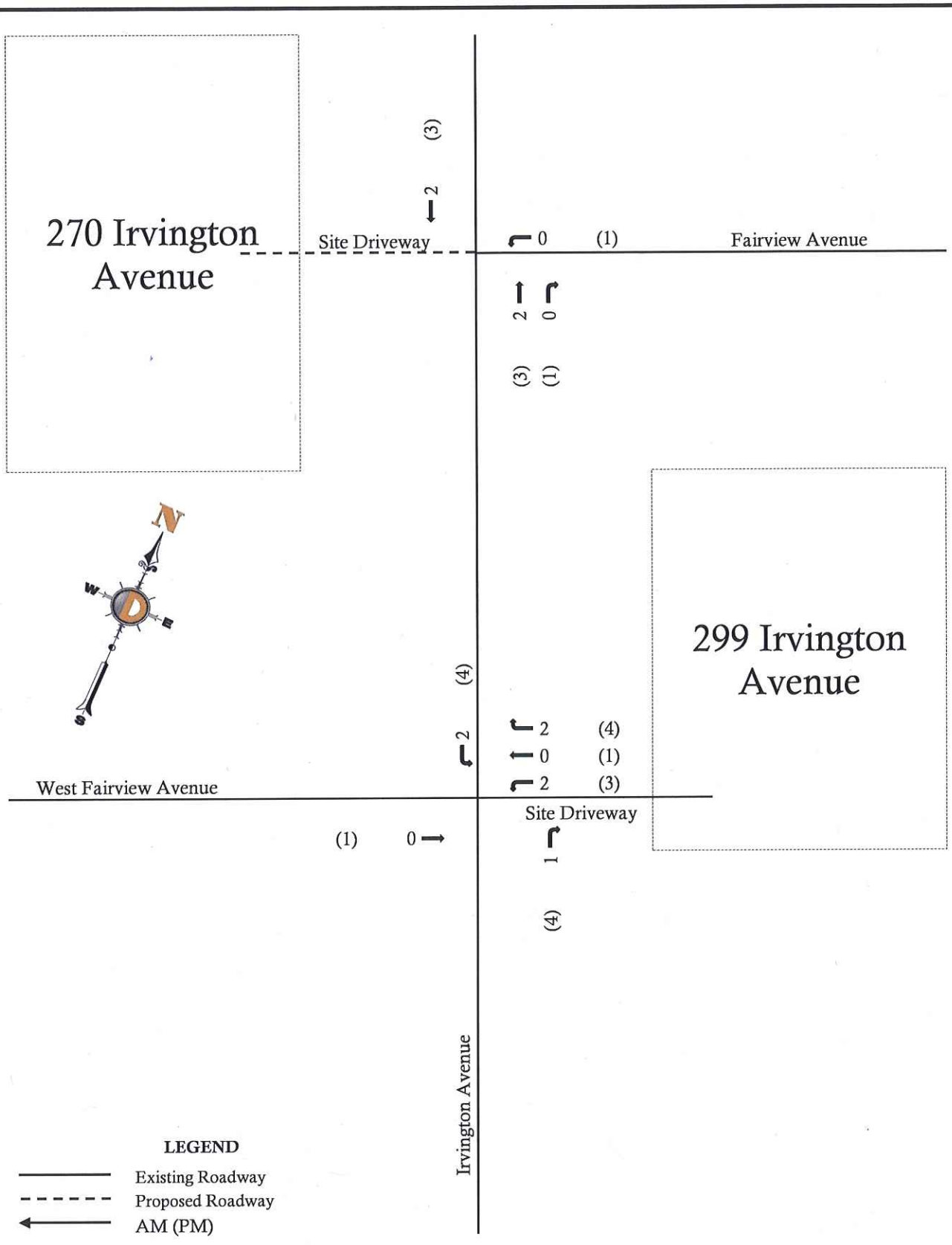
Site Generated Trips - 270 Irvington Avenue



Proposed Mixed-Use Development
Traffic Impact Study
3608-99-001TE
4/15/2021

Figure 6

Percent Distribution - 299 Irvington Avenue



Proposed Mixed-Use Development
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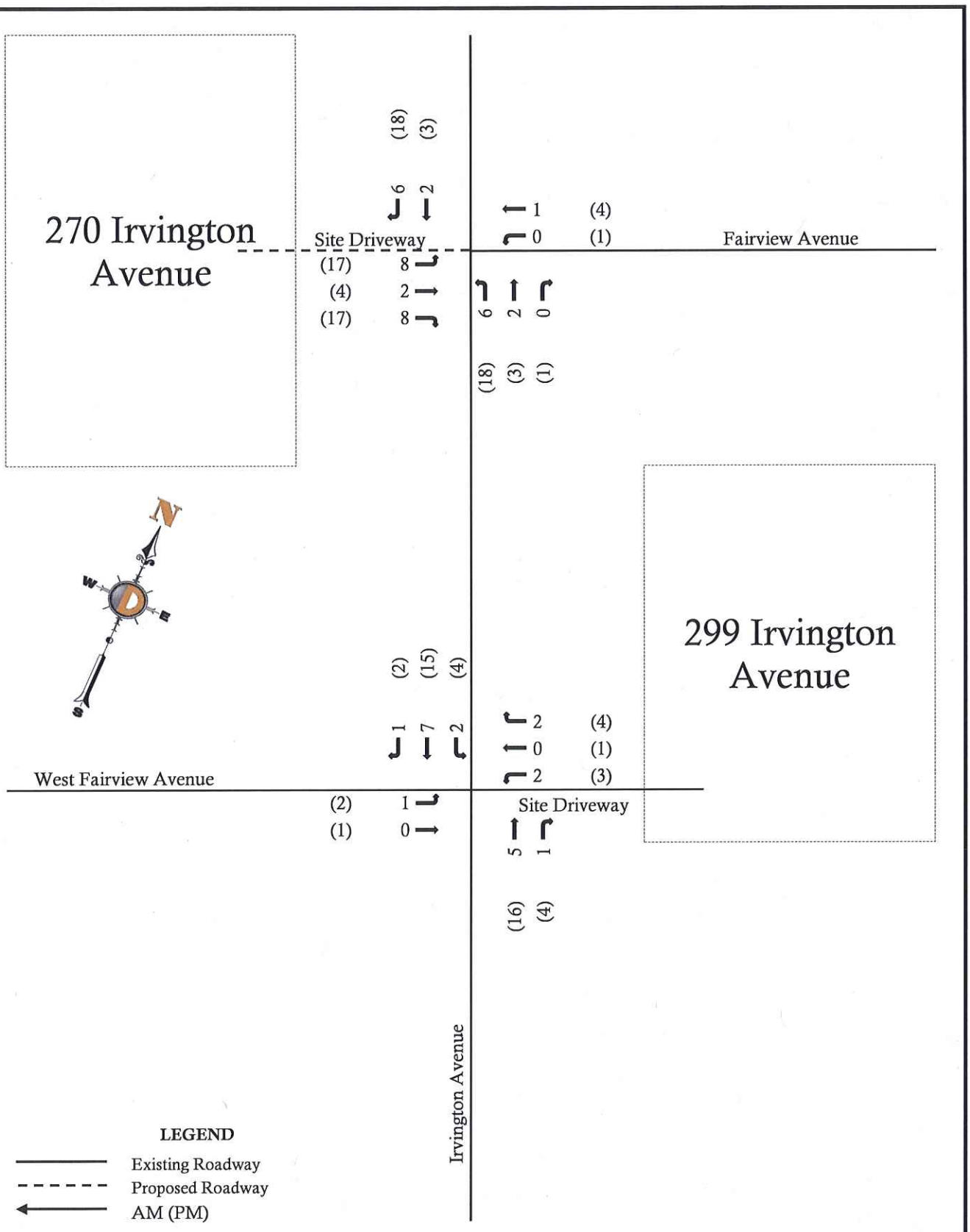
3608-99-001TE
4/15/2021

Figure 7

Site Generated Trips - 299 Irvington Avenue



Proposed Mixed-Use Development
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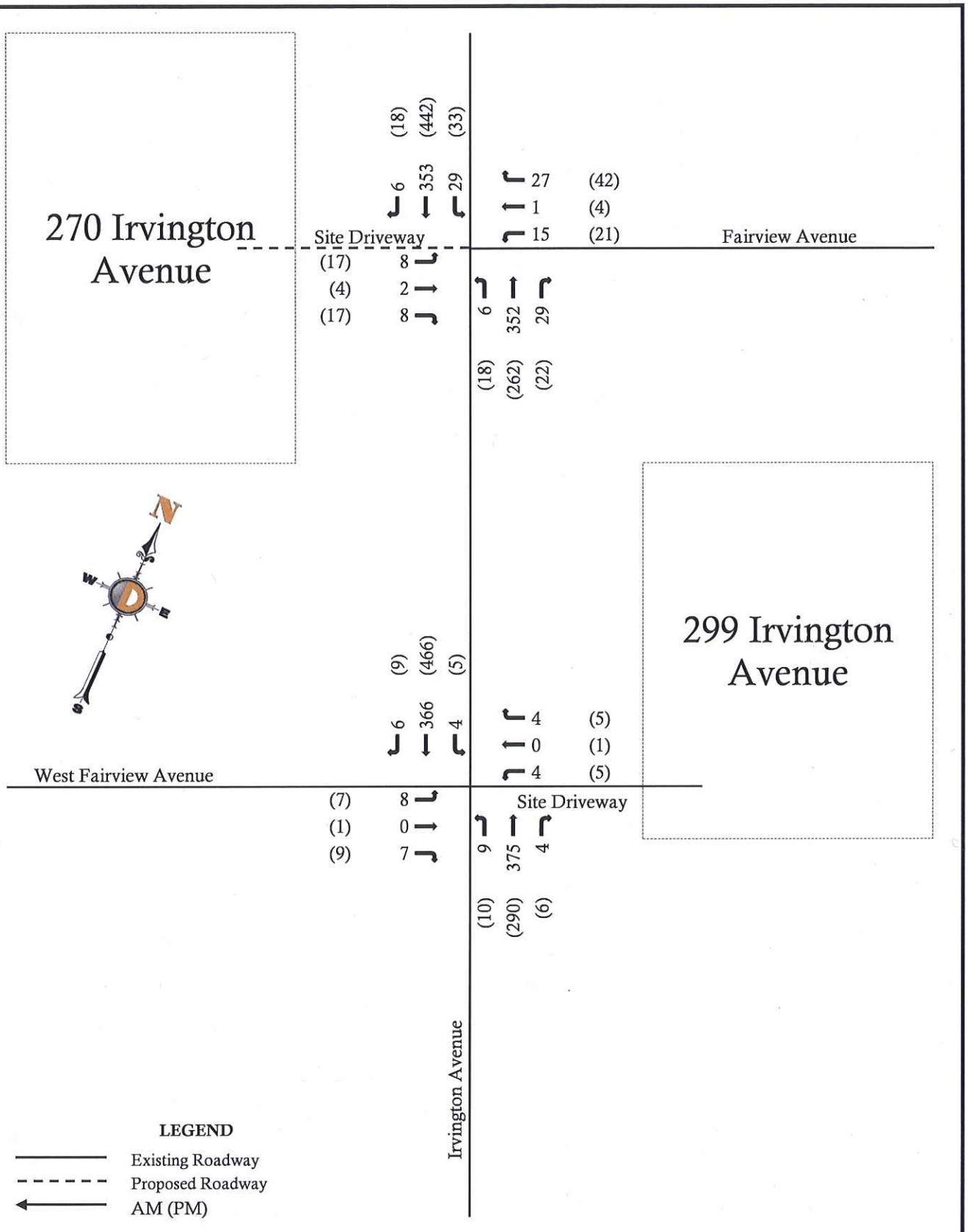
4/15/2021

Figure 8

Total Site Generated Trips



Proposed Mixed-Use Development
Traffic Impact Study
3608-99-001TE
4/15/2021

Figure 9

Build Traffic Volumes

Appendix B
Traffic Counts

Dynamic Traffic, LLC

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

E/W: Fairview Ave
N/S: Irvington Ave
Town/County: South Orange/Essex
Job #: 3608-99-001TE

File Name : Irvington Ave & Fairview Ave - AMPM
Site Code : 00000000
Start Date : 10/21/2020
Page No : 1

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

	Fairview Avenue Westbound					Irvington Avenue Northbound					Irvington Avenue Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	3	0	1	0	4	0	29	2	0	31	2	27	0	0	29	64
07:15 AM	2	0	1	0	3	0	36	1	0	37	4	33	0	0	37	77
07:30 AM	2	0	5	2	9	0	42	3	0	45	4	39	0	0	43	97
07:45 AM	7	0	8	3	18	0	57	3	0	60	2	49	0	0	51	129
Total	14	0	15	5	34	0	164	9	0	173	12	148	0	0	160	367
08:00 AM	3	0	1	3	7	0	43	2	0	45	2	40	0	0	42	94
08:15 AM	3	0	3	2	8	0	39	5	0	44	2	53	0	0	55	107
08:30 AM	1	0	5	1	7	0	57	6	0	63	5	55	0	0	60	130
08:45 AM	1	0	6	2	9	0	55	3	0	58	7	47	0	0	54	121
Total	8	0	15	8	31	0	194	16	0	210	16	195	0	0	211	452
*** BREAK ***																
04:30 PM	0	0	2	0	2	0	46	5	0	51	2	102	0	0	104	157
04:45 PM	6	0	6	1	13	0	42	4	0	46	3	88	0	0	91	150
Total	6	0	8	1	15	0	88	9	0	97	5	190	0	0	195	307
05:00 PM	5	0	10	1	16	0	76	0	0	76	6	100	0	0	106	198
05:15 PM	3	0	11	3	17	0	52	5	0	57	7	102	0	0	109	183
05:30 PM	2	0	4	1	7	0	41	8	0	49	4	91	0	0	95	151
05:45 PM	7	0	10	5	22	0	51	5	0	56	11	80	0	0	91	169
Total	17	0	35	10	62	0	220	18	0	238	28	373	0	0	401	701
06:00 PM	2	0	2	2	6	0	42	5	0	47	3	81	0	0	84	137
06:15 PM	5	0	3	0	8	0	45	4	0	49	4	88	0	0	92	149
Grand Total	52	0	78	26	156	0	753	61	0	814	68	1075	0	0	1143	2113
Apprch %	33.3	0	50	16.7		0	92.5	7.5	0		5.9	94.1	0	0		
Total %	2.5	0	3.7	1.2	7.4	0	35.6	2.9	0	38.5	3.2	50.9	0	0	54.1	
Cars	52	0	76	24	152	0	728	59	0	787	67	1041	0	0	1108	2047
% Cars	100	0	97.4	92.3	97.4	0	96.7	96.7	0	96.7	98.5	96.8	0	0	96.9	96.9
Trucks (SU)	0	0	2	2	4	0	25	2	0	27	1	34	0	0	35	66
% Trucks (SU)	0	0	2.6	7.7	2.6	0	3.3	3.3	0	3.3	1.5	3.2	0	0	3.1	3.1
Trucks (TT)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Trucks (TT)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Dynamic Traffic, LLC

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

E/W: W Fairview Ave/Dway
N/S: Irvington Ave
Town/County: South Orange/Essex
Job #: 3608-99-001TE

File Name : Irvington Ave & West Fairview Ave - AMPM
Site Code : 00000000
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	West Fairview Avenue Eastbound					Driveway Westbound					Irvington Avenue Northbound					Irvington Avenue Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	0	0	2	3	5	0	0	0	0	0	4	0	0	1	5	0	0	0	0	0	10
07:15 AM	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	4
07:30 AM	1	0	0	2	3	0	0	1	0	1	1	0	0	1	2	0	0	0	0	0	6
07:45 AM	1	0	0	0	1	0	0	0	0	0	2	0	0	0	2	0	0	1	0	1	4
Total	2	0	2	7	11	0	0	1	0	1	7	0	0	2	9	0	0	3	0	3	24
08:00 AM	1	0	0	6	7	0	0	0	0	0	0	0	1	4	5	1	0	1	0	2	14
08:15 AM	0	0	2	0	2	0	0	0	0	0	1	0	1	0	2	0	0	1	0	1	5
08:30 AM	1	0	1	2	4	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	6
08:45 AM	2	0	1	6	9	1	0	1	0	2	2	0	0	2	4	0	0	1	0	1	16
Total	4	0	4	14	22	1	0	1	0	2	5	0	2	6	13	1	0	3	0	4	41
*** BREAK ***																					
04:30 PM	2	0	1	10	13	1	0	1	0	2	1	0	0	4	5	0	0	0	0	0	20
04:45 PM	0	0	2	6	8	0	0	2	0	2	2	0	0	1	3	0	0	2	0	2	15
Total	2	0	3	16	21	1	0	3	0	4	3	0	0	5	8	0	0	2	0	2	35
05:00 PM	0	0	2	5	7	1	0	1	0	2	0	0	0	1	1	0	0	3	0	3	13
05:15 PM	2	0	3	6	11	0	0	0	0	0	3	0	1	2	6	1	0	0	0	1	18
05:30 PM	0	0	1	6	7	0	0	0	0	0	3	0	0	7	10	0	0	3	0	3	20
05:45 PM	2	0	2	8	12	1	0	0	0	1	3	0	1	3	7	0	0	0	0	0	20
Total	4	0	8	25	37	2	0	1	0	3	9	0	2	13	24	1	0	6	0	7	71
06:00 PM	1	0	4	6	11	0	0	1	0	1	1	0	0	6	7	1	0	0	0	1	20
06:15 PM	2	0	4	7	13	0	0	0	0	0	3	0	0	4	7	0	0	2	0	2	22
Grand Total	15	0	25	75	115	4	0	7	0	11	28	0	4	36	68	3	0	16	0	19	213
Apprch %	13	0	21.7	65.2		36.4	0	63.6	0		41.2	0	5.9	52.9		15.8	0	84.2	0		
Total %	7	0	11.7	35.2	54	1.9	0	3.3	0	5.2	13.1	0	1.9	16.9	31.9	1.4	0	7.5	0	8.9	
Cars	15	0	25	75	115	4	0	7	0	11	28	0	4	36	68	3	0	16	0	19	213
% Cars	100	0	100	100	100	100	0	100	0	100	100	0	100	100	100	100	0	100	0	100	100
Trucks (SU)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Trucks (SU)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Trucks (TT)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Trucks (TT)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Dynamic Traffic, LLC

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

E/W: 3rd St
N/S: Valley St
Town/County: South Orange/Essex
Job #: 3608-99-001TE

File Name : Valley St & 3rd St - AMPM
Site Code : 00000000
Start Date : 10/28/2020
Page No : 1

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

	3rd Street Eastbound					3rd Street Westbound					Valley Street Northbound					Valley Street Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:30 AM	8	9	17	1	35	5	25	1	1	32	8	43	1	1	53	2	67	3	1	73	193
07:45 AM	7	32	17	3	59	4	37	3	0	44	12	36	2	6	56	3	73	4	3	83	242
Total	15	41	34	4	94	9	62	4	1	76	20	79	3	7	109	5	140	7	4	156	435
08:00 AM	2	20	20	1	43	3	51	3	2	59	16	53	2	0	71	2	78	4	3	87	260
08:15 AM	3	19	18	2	42	1	31	3	0	35	8	67	5	0	80	2	69	2	3	76	233
*** BREAK ***																					
Total	5	39	38	3	85	4	82	6	2	94	24	120	7	0	151	4	147	6	6	163	493
*** BREAK ***																					
05:30 PM	8	38	30	10	86	10	39	6	3	58	30	106	4	1	141	7	86	6	4	103	388
05:45 PM	7	31	28	10	76	9	31	7	3	50	23	120	3	3	149	7	82	5	5	99	374
Total	15	69	58	20	162	19	70	13	6	108	53	226	7	4	290	14	168	11	9	202	762
06:00 PM	3	29	24	7	63	6	16	3	6	31	17	120	6	6	149	5	64	6	1	76	319
06:15 PM	7	29	21	12	69	4	38	1	1	44	25	88	2	6	121	4	87	3	1	95	329
Grand Total	45	207	175	46	473	42	268	27	16	353	139	633	25	23	820	32	606	33	21	692	2338
Apprch %	9.5	43.8	37	9.7		11.9	75.9	7.6	4.5		17	77.2	3	2.8		4.6	87.6	4.8	3		
Total %	1.9	8.9	7.5	2	20.2	1.8	11.5	1.2	0.7	15.1	5.9	27.1	1.1	1	35.1	1.4	25.9	1.4	0.9	29.6	
Cars	28	204	172	46	450	42	265	27	16	350	129	611	25	23	788	32	586	30	21	669	2257
% Cars	62.2	98.6	98.3	100	95.1	100	98.9	100	100	99.2	92.8	96.5	100	100	96.1	100	96.7	90.9	100	96.7	96.5
Trucks (SU)	17	3	3	0	23	0	3	0	0	3	10	20	0	0	30	0	20	3	0	23	79
% Trucks (SU)	37.8	1.4	1.7	0	4.9	0	1.1	0	0	0.8	7.2	3.2	0	0	3.7	0	3.3	9.1	0	3.3	3.4
Trucks (TT)	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	2
% Trucks (TT)	0	0	0	0	0	0	0	0	0	0	0	0.3	0	0	0.2	0	0	0	0	0	0.1

Dynamic Traffic, LLC

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

E/W: 4th Street
N/S: Valley Street
Town/County: South Orange/Essex
Job #: 1084-16-015T

File Name : Valley Street & 3rd Street AM & PM
Site Code : 00000000
Start Date : 6/7/2017
Page No : 1

Groups Printed- Cars - Trucks

	3rd Street Eastbound					3rd Street Westbound					Valley Street Northbound					Valley Street Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	7	10	7	1	25	6	17	3	6	32	10	49	2	0	61	2	32	4	7	45	163
07:15 AM	2	10	22	5	39	7	23	9	5	44	16	57	0	2	75	3	87	6	7	103	261
07:30 AM	13	16	31	4	64	6	41	6	6	59	17	77	2	2	98	7	106	7	6	126	347
07:45 AM	9	34	26	7	76	5	57	12	6	80	19	73	4	6	102	3	93	4	36	136	394
Total	31	70	86	17	204	24	138	30	23	215	62	256	8	10	336	15	318	21	56	410	1165
08:00 AM	11	40	18	2	71	4	70	16	16	106	7	86	1	8	102	6	98	5	38	147	426
08:15 AM	13	36	20	6	75	4	47	8	5	64	12	70	6	3	91	5	103	7	5	120	350
08:30 AM	7	22	30	2	61	7	58	6	2	73	14	60	4	2	80	7	79	3	6	95	309
08:45 AM	10	26	24	4	64	6	69	8	4	87	14	77	6	1	98	9	82	6	7	104	353
Total	41	124	92	14	271	21	244	38	27	330	47	293	17	14	371	27	362	21	56	466	1438
*** BREAK ***																					
04:30 PM	7	41	17	2	67	8	30	10	3	51	13	100	5	1	119	9	91	6	6	112	349
04:45 PM	6	35	16	2	59	7	24	10	1	42	15	86	4	2	107	8	88	7	6	109	317
Total	13	76	33	4	126	15	54	20	4	93	28	186	9	3	226	17	179	13	12	221	666
05:00 PM	10	33	21	1	65	7	42	14	3	66	12	102	4	5	123	14	85	7	3	109	363
05:15 PM	6	25	18	4	53	8	39	14	2	63	10	97	3	4	114	8	76	3	2	89	319
05:30 PM	8	33	27	2	70	9	38	9	4	60	11	100	7	2	120	8	80	6	5	99	349
05:45 PM	9	25	30	2	66	7	43	9	8	67	16	104	4	4	128	8	85	10	6	109	370
Total	33	116	96	9	254	31	162	46	17	256	49	403	18	15	485	38	326	26	16	406	1401
06:00 PM	12	48	37	9	106	2	27	14	4	47	19	107	10	10	146	10	110	8	2	130	429
06:15 PM	12	39	27	5	83	5	31	12	4	52	15	96	5	1	117	7	93	4	3	107	359
Grand Total	142	473	371	58	1044	98	656	160	79	993	220	1341	67	53	1681	114	1388	93	145	1740	5458
Apprch %	13.6	45.3	35.5	5.6		9.9	66.1	16.1	8		13.1	79.8	4	3.2		6.6	79.8	5.3	8.3		
Total %	2.6	8.7	6.8	1.1	19.1	1.8	12	2.9	1.4	18.2	4	24.6	1.2	1	30.8	2.1	25.4	1.7	2.7	31.9	
Cars	121	473	370	58	1022	97	654	158	79	988	216	1330	65	53	1664	112	1368	93	145	1718	5392
% Cars	85.2	100	99.7	100	97.9	99	99.7	98.8	100	99.5	98.2	99.2	97	100	99	98.2	98.6	100	100	98.7	98.8
Trucks	21	0	1	0	22	1	2	2	0	5	4	11	2	0	17	2	20	0	0	22	66
% Trucks	14.8	0	0.3	0	2.1	1	0.3	1.2	0	0.5	1.8	0.8	3	0	1	1.8	1.4	0	0	1.3	1.2

Appendix C
Capacity Analysis

HCS7 Two-Way Stop-Control Report

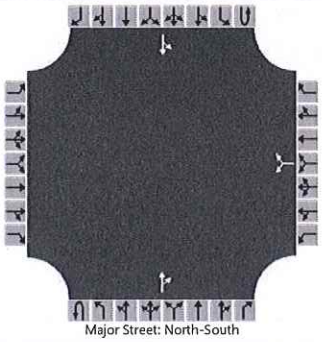
General Information

Analyst	CGH
Agency/Co.	Dynamic Traffic
Date Performed	4/8/2021
Analysis Year	EX
Time Analyzed	AM PSH
Intersection Orientation	North-South
Project Description	3608-99-001TE

Site Information

Intersection	Irvington & Fairview
Jurisdiction	County
East/West Street	Fairview Avenue
North/South Street	Irvington Avenue
Peak Hour Factor	0.87
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	1	0	0	0	1	0
Configuration							LR					TR		LT		
Volume (veh/h)						14		26			336	28		28	337	
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)							46							32		
Capacity, c (veh/h)							470							1135		
v/c Ratio							0.10							0.03		
95% Queue Length, Q_{95} (veh)							0.3							0.1		
Control Delay (s/veh)							13.5							8.3		
Level of Service (LOS)							B							A		
Approach Delay (s/veh)						13.5								0.9		
Approach LOS						B										

HCS7 Two-Way Stop-Control Report

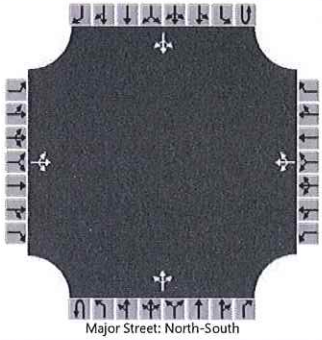
General Information

Analyst	CGH
Agency/Co.	Dynamic Traffic
Date Performed	4/8/2021
Analysis Year	EX
Time Analyzed	AM PSH
Intersection Orientation	North-South
Project Description	3608-99-001TE

Site Information

Intersection	Irvington & W Fairview/SD
Jurisdiction	County
East/West Street	W Fairview Avenue/Site
North/South Street	Irvington Avenue
Peak Hour Factor	0.87
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		7	0	7		2	0	2		9	355	3		2	344	5
Percent Heavy Vehicles (%)		0	2	0		2	2	2		0				2		
Proportion Time Blocked																
Percent Grade (%)		0				0										
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.10	6.52	6.20		7.12	6.52	6.22		4.10				4.12		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.50	4.02	3.30		3.52	4.02	3.32		2.20				2.22		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			16				5			10				2		
Capacity, c (veh/h)			398				382			1168				1131		
v/c Ratio			0.04				0.01			0.01				0.00		
95% Queue Length, Q_{95} (veh)			0.1				0.0			0.0				0.0		
Control Delay (s/veh)			14.4				14.5			8.1				8.2		
Level of Service (LOS)			B				B			A				A		
Approach Delay (s/veh)		14.4				14.5				0.3				0.1		
Approach LOS		B				B										

HCS7 Two-Way Stop-Control Report

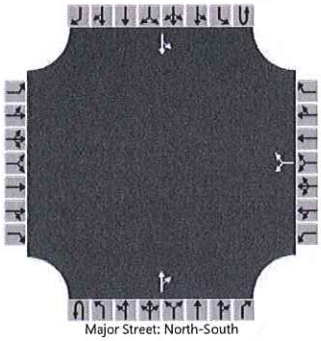
General Information

Analyst	CGH
Agency/Co.	Dynamic Traffic
Date Performed	4/8/2021
Analysis Year	EX
Time Analyzed	PM PSH
Intersection Orientation	North-South
Project Description	3608-99-001TE

Site Information

Intersection	Irvington & Fairview
Jurisdiction	County
East/West Street	Fairview Avenue
North/South Street	Irvington Avenue
Peak Hour Factor	0.89
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	1	0	0	0	1	0
Configuration							LR					TR		LT		
Volume (veh/h)						19		40			249	20		32	422	
Percent Heavy Vehicles (%)						0		6						4		
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		6.26						4.14		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.50		3.35						2.24		

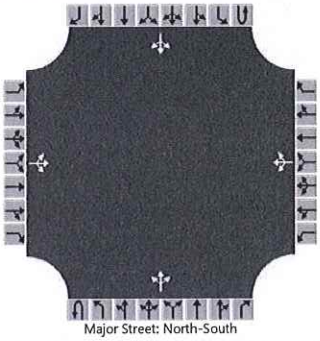
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)							66							36		
Capacity, c (veh/h)							513							1225		
v/c Ratio							0.13							0.03		
95% Queue Length, Q_{95} (veh)							0.4							0.1		
Control Delay (s/veh)							13.1							8.0		
Level of Service (LOS)							B							A		
Approach Delay (s/veh)					13.1								0.9			
Approach LOS					B											

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	CGH	Intersection	Irvington & W Fairview/SD
Agency/Co.	Dynamic Traffic	Jurisdiction	County
Date Performed	4/8/2021	East/West Street	W Fairview Avenue/Site
Analysis Year	EX	North/South Street	Irvington Avenue
Time Analyzed	PM PSH	Peak Hour Factor	0.88
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	3608-99-001TE		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		5	0	9		2	0	1		10	263	2		1	433	7
Percent Heavy Vehicles (%)		0	2	0		2	2	2		0				2		
Proportion Time Blocked																
Percent Grade (%)		0				0										
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.10	6.52	6.20		7.12	6.52	6.22		4.10				4.12		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.50	4.02	3.30		3.52	4.02	3.32		2.20				2.22		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			16				3			11				1		
Capacity, c (veh/h)			428				349			1075				1242		
v/c Ratio			0.04				0.01			0.01				0.00		
95% Queue Length, Q_{95} (veh)			0.1				0.0			0.0				0.0		
Control Delay (s/veh)			13.7				15.4			8.4				7.9		
Level of Service (LOS)			B				C			A				A		
Approach Delay (s/veh)		13.7				15.4				0.4				0.0		
Approach LOS		B				C										

HCS7 Two-Way Stop-Control Report

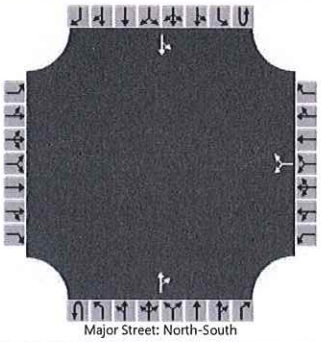
General Information

Analyst	CGH
Agency/Co.	Dynamic Traffic
Date Performed	4/8/2021
Analysis Year	NB
Time Analyzed	AM PSH
Intersection Orientation	North-South
Project Description	3608-99-001TE

Site Information

Intersection	Irvington & Fairview
Jurisdiction	County
East/West Street	Fairview Avenue
North/South Street	Irvington Avenue
Peak Hour Factor	0.87
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	1	0	0	0	1	0
Configuration							LR					TR		LT		
Volume (veh/h)						15		27			350	29		29	351	
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		

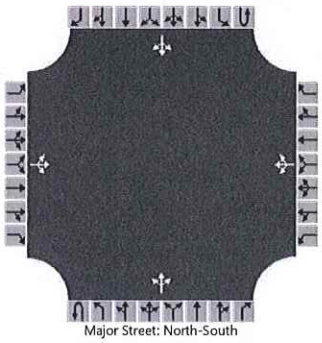
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)							48							33		
Capacity, c (veh/h)							450							1119		
v/c Ratio							0.11							0.03		
95% Queue Length, Q_{95} (veh)							0.4							0.1		
Control Delay (s/veh)							14.0							8.3		
Level of Service (LOS)							B							A		
Approach Delay (s/veh)					14.0								0.9			
Approach LOS					B											

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	CGH	Intersection	Irvington & W Fairview/SD
Agency/Co.	Dynamic Traffic	Jurisdiction	County
Date Performed	4/8/2021	East/West Street	W Fairview Avenue/Site
Analysis Year	NB	North/South Street	Irvington Avenue
Time Analyzed	AM PSH	Peak Hour Factor	0.87
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	3608-99-001TE		

Lanes


Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		7	0	7		2	0	2		9	370	3		2	359	5
Percent Heavy Vehicles (%)		0	2	0		2	2	2		0				2		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.10	6.52	6.20		7.12	6.52	6.22		4.10				4.12		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.50	4.02	3.30		3.52	4.02	3.32		2.20				2.22		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			16				5			10				2		
Capacity, c (veh/h)			380				365			1152				1114		
v/c Ratio			0.04				0.01			0.01				0.00		
95% Queue Length, Q_{95} (veh)			0.1				0.0			0.0				0.0		
Control Delay (s/veh)			14.9				15.0			8.2				8.2		
Level of Service (LOS)			B				B			A				A		
Approach Delay (s/veh)	14.9				15.0				0.3				0.1			
Approach LOS	B				B											

HCS7 Two-Way Stop-Control Report

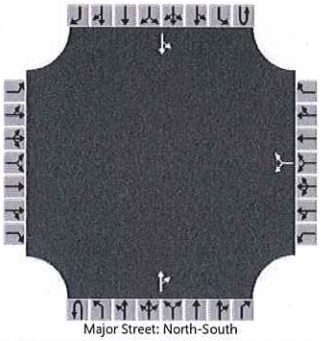
General Information

Analyst	CGH
Agency/Co.	Dynamic Traffic
Date Performed	4/8/2021
Analysis Year	NB
Time Analyzed	PM PSH
Intersection Orientation	North-South
Project Description	3608-99-001TE

Site Information

Intersection	Irvington & Fairview
Jurisdiction	County
East/West Street	Fairview Avenue
North/South Street	Irvington Avenue
Peak Hour Factor	0.89
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	1	0	0	0	1	0
Configuration							LR					TR		LT		
Volume (veh/h)						20		42			259	21		33	439	
Percent Heavy Vehicles (%)						0		6						4		
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		6.26						4.14		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.50		3.35						2.24		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)							70							37		
Capacity, c (veh/h)							496							1212		
v/c Ratio							0.14							0.03		
95% Queue Length, Q_{95} (veh)							0.5							0.1		
Control Delay (s/veh)							13.4							8.1		
Level of Service (LOS)							B							A		
Approach Delay (s/veh)					13.4								0.9			
Approach LOS					B											

HCS7 Two-Way Stop-Control Report

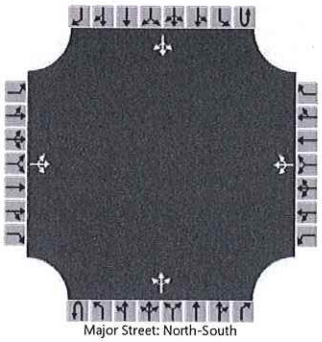
General Information

Analyst	CGH
Agency/Co.	Dynamic Traffic
Date Performed	4/8/2021
Analysis Year	NB
Time Analyzed	PM PSH
Intersection Orientation	North-South
Project Description	3608-99-001TE

Site Information

Intersection	Irvington & W Fairview/SD
Jurisdiction	County
East/West Street	W Fairview Avenue/Site
North/South Street	Irvington Avenue
Peak Hour Factor	0.88
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		5	0	9		2	0	1		10	274	2		1	451	7
Percent Heavy Vehicles (%)		0	2	0		2	2	2		0				2		
Proportion Time Blocked																
Percent Grade (%)		0				0										
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.10	6.52	6.20		7.12	6.52	6.22		4.10				4.12		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.50	4.02	3.30		3.52	4.02	3.32		2.20				2.22		

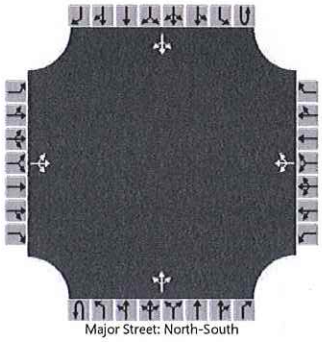
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			16				3			11				1		
Capacity, c (veh/h)			411				333			1056				1229		
v/c Ratio			0.04				0.01			0.01				0.00		
95% Queue Length, Q_{95} (veh)			0.1				0.0			0.0				0.0		
Control Delay (s/veh)			14.1				15.9			8.4				7.9		
Level of Service (LOS)			B				C			A				A		
Approach Delay (s/veh)	14.1				15.9				0.4				0.0			
Approach LOS	B				C											

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	CGH	Intersection	Irvington & Fairview/Site
Agency/Co.	Dynamic Traffic	Jurisdiction	County
Date Performed	4/8/2021	East/West Street	Fairview Avenue/Site
Analysis Year	FB	North/South Street	Irvington Avenue
Time Analyzed	AM PSH	Peak Hour Factor	0.87
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	3608-99-001TE		

Lanes


Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		8	2	8		15	1	27		6	352	29		29	353	6
Percent Heavy Vehicles (%)		2	2	2		0	2	0		2				0		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.12	6.52	6.22		7.10	6.52	6.20		4.12				4.10		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.52	4.02	3.32		3.50	4.02	3.30		2.22				2.20		

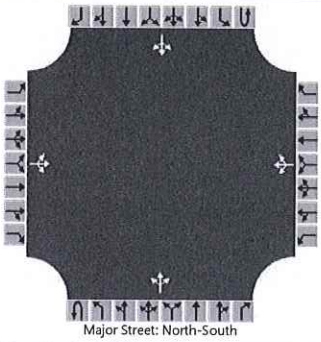
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			21				49			7				33		
Capacity, c (veh/h)			324				388			1146				1116		
v/c Ratio			0.06				0.13			0.01				0.03		
95% Queue Length, Q_{95} (veh)			0.2				0.4			0.0				0.1		
Control Delay (s/veh)			16.9				15.6			8.2				8.3		
Level of Service (LOS)			C				C			A				A		
Approach Delay (s/veh)	16.9				15.6				0.2				0.9			
Approach LOS	C				C											

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	CGH	Intersection	Irvington & W Fairview/SD
Agency/Co.	Dynamic Traffic	Jurisdiction	County
Date Performed	4/8/2021	East/West Street	W Fairview Avenue/Site
Analysis Year	FB	North/South Street	Irvington Avenue
Time Analyzed	AM PSH	Peak Hour Factor	0.87
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	3608-99-001TE		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		8	0	7		4	0	4		9	375	4		4	366	6
Percent Heavy Vehicles (%)		0	2	0		2	2	2		0				2		
Proportion Time Blocked																
Percent Grade (%)		0				0										
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.10	6.52	6.20		7.12	6.52	6.22		4.10				4.12		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.50	4.02	3.30		3.52	4.02	3.32		2.20				2.22		

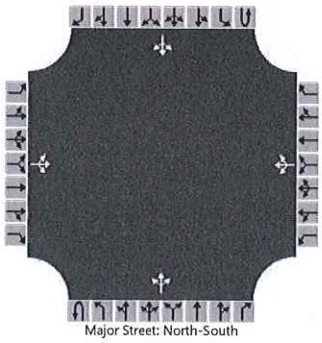
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			17				9			10				5		
Capacity, c (veh/h)			359				356			1143				1108		
v/c Ratio			0.05				0.03			0.01				0.00		
95% Queue Length, Q_{95} (veh)			0.2				0.1			0.0				0.0		
Control Delay (s/veh)			15.5				15.4			8.2				8.3		
Level of Service (LOS)			C				C			A				A		
Approach Delay (s/veh)	15.5				15.4				0.3				0.1			
Approach LOS	C				C											

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	CGH	Intersection	Irvington & Fairview/Site
Agency/Co.	Dynamic Traffic	Jurisdiction	County
Date Performed	4/8/2021	East/West Street	Fairview Avenue/Site
Analysis Year	FB	North/South Street	Irvington Avenue
Time Analyzed	PM PSH	Peak Hour Factor	0.89
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	3608-99-001TE		

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		17	4	17		21	4	42		18	262	22		33	442	18
Percent Heavy Vehicles (%)		2	2	2		0	2	0		2				4		
Proportion Time Blocked																
Percent Grade (%)		0				0										
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.12	6.52	6.22		7.10	6.52	6.20		4.12				4.14		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.52	4.02	3.32		3.50	4.02	3.30		2.22				2.24		

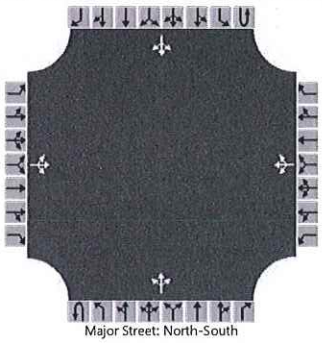
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			43				75			20				37		
Capacity, c (veh/h)			297				392			1049				1212		
v/c Ratio			0.14				0.19			0.02				0.03		
95% Queue Length, Q_{95} (veh)			0.5				0.7			0.1				0.1		
Control Delay (s/veh)			19.2				16.3			8.5				8.1		
Level of Service (LOS)			C				C			A				A		
Approach Delay (s/veh)	19.2				16.3				0.7				0.9			
Approach LOS	C				C											

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	CGH	Intersection	Irvington & W Fairview/SD
Agency/Co.	Dynamic Traffic	Jurisdiction	County
Date Performed	4/8/2021	East/West Street	W Fairview Avenue/Site
Analysis Year	FB	North/South Street	Irvington Avenue
Time Analyzed	PM PSH	Peak Hour Factor	0.88
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	3608-99-001TE		

Lanes


Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		7	1	9		5	1	5		10	290	6		5	466	9
Percent Heavy Vehicles (%)		0	2	0		2	2	2		0				2		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.10	6.52	6.20		7.12	6.52	6.22		4.10				4.12		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.50	4.02	3.30		3.52	4.02	3.32		2.20				2.22		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			19				13			11				6		
Capacity, c (veh/h)			355				348			1039				1205		
v/c Ratio			0.05				0.04			0.01				0.00		
95% Queue Length, Q_{95} (veh)			0.2				0.1			0.0				0.0		
Control Delay (s/veh)			15.7				15.7			8.5				8.0		
Level of Service (LOS)			C				C			A				A		
Approach Delay (s/veh)	15.7				15.7				0.4				0.1			
Approach LOS	C				C											