Macadoodle
Traffic Impact Study
Lee's Summit, Missouri

July 12th, 2022

Prepared by:

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INTRODUCTION

The purpose of this traffic impact study is to assess the potential impact on traffic with the Macadoodle liquor store development in the existing Southport Center. The shopping center is located on the northwest corner of the intersection of Route 291 and SW Market Street/SW 16th Street in Lee's Summit, Missouri. The location of the development in relation to the street network is shown in Figure 1.

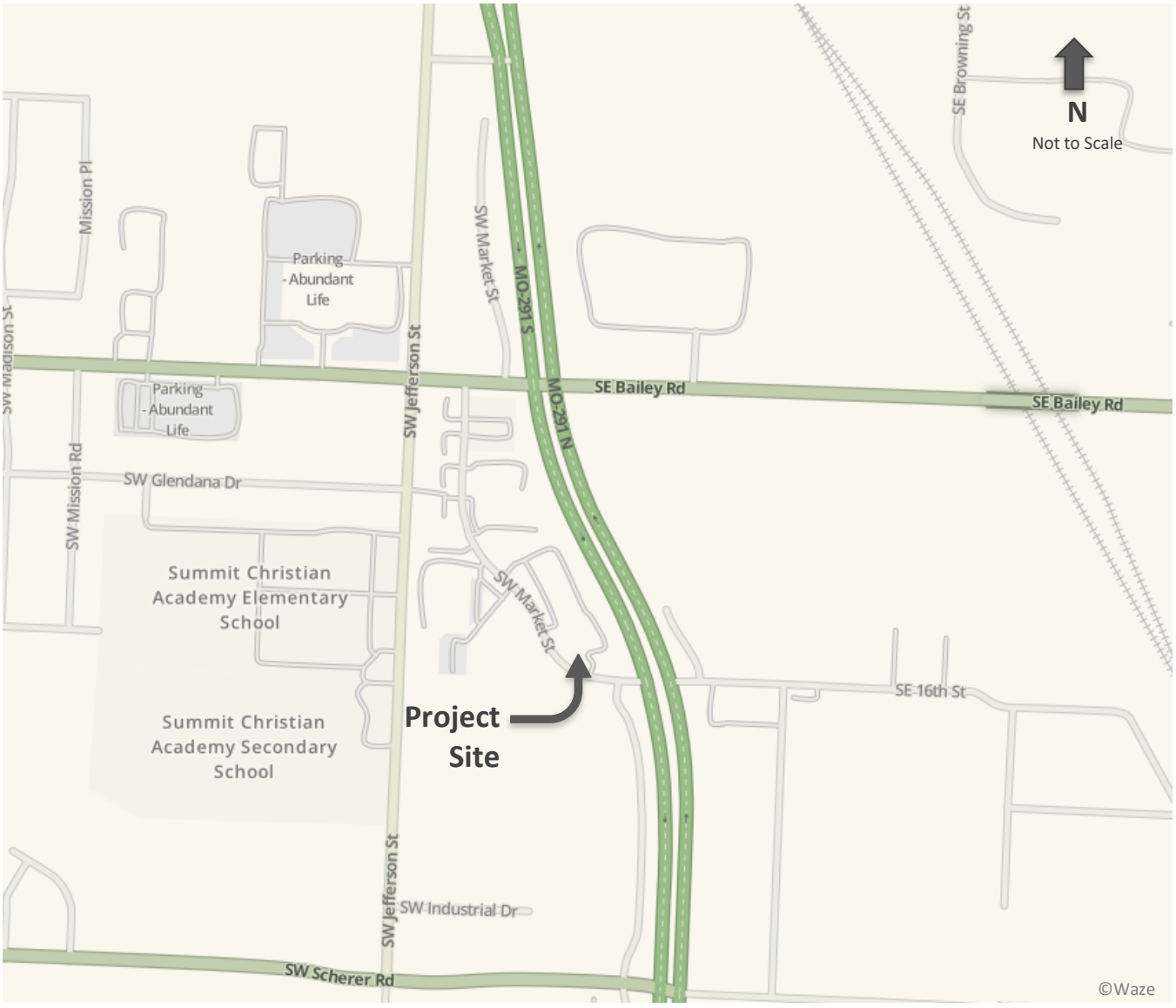


Figure 1–Development Location

EXISTING CONDITIONS

The site is located in Lee's Summit, Missouri, on the northwest corner of the intersection of MO 291 and SW Market Street/SW 16th Street. The Macadoodle liquor store will be going into the existing Summit Park Church location in the Southport Center. The shopping center currently has four vacant sites, two insurance agencies, a taekwondo studio, and a real estate office.

Street Network and Traffic Control

The development is accessed by SW Market Street running north-south at SW Persels Road and tee-ing into southbound MO 291, which is Right-In/Right-Out (RIRO). SW Market Street is a two-lane collector road with a double yellow centerline. There is no posted speed limit.

MO 291 is a north-south four-lane divided highway with a southbound right-turn lane. The posted speed limit is 45 miles per hour (mph). Traffic on SW Market Street is only able to turn right onto MO 291. The intersection of SW Market Street and MO291 is stop controlled with SW Market Street stopping.

SW Persels Road is a two-lane east-west arterial with a left-turn lane and a posted speed limit of 35 mph. The intersection of SW Market Street and SW Persels Road is stop controlled with SW Market Street stopping.

SW Jefferson Street is a two-lane north-south arterial with a two-way left-turn center lane and a posted speed limit of 35 mph. The intersection of SW Jefferson Street and SW Persels Road is signalized.

Traffic Volumes

Intersections included in the analysis for this study are:

- SW Market Street and SW Persels Road
- SW Market Street and SW Market Street/US 291
- SW Market Street and two existing access points
- SW Persels Road and SW Jefferson Street

The turning movement traffic counts were completed on Tuesday, February 8th, 2022, for the peak volume time periods. Morning traffic counts were conducted from 7:00 AM until 9:00 AM and afternoon traffic counts were from 4:00 PM until 6:00 PM. The morning peak period was determined to be from 7:15 AM until 8:15 AM and the afternoon peak period was determined to be from 4:00 PM until 5:00 PM.

Existing traffic volumes are shown on Figure 2. Traffic counts are included in the Appendix.

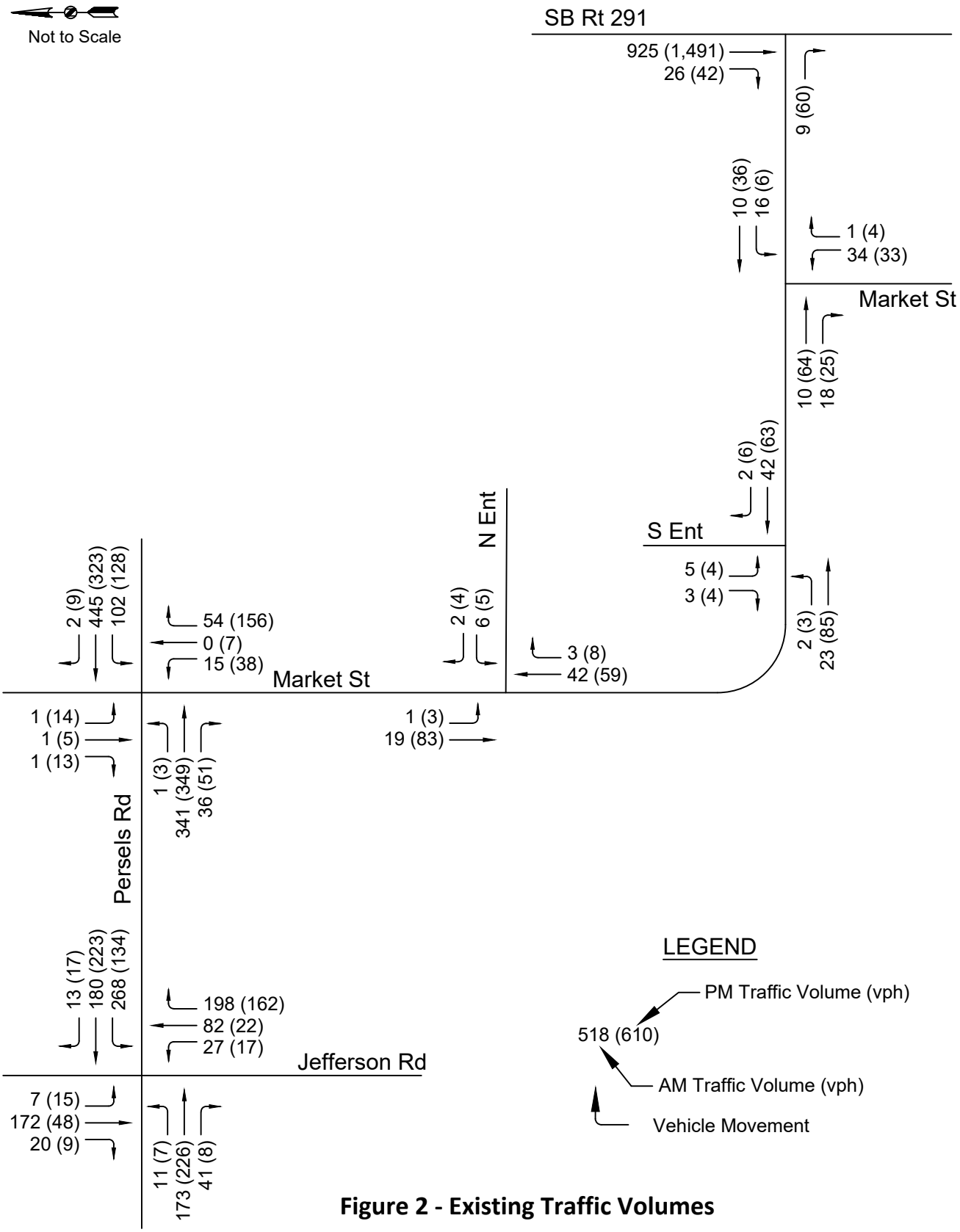


Figure 2 - Existing Traffic Volumes

PROPOSED CONDITIONS

The Macadoodle development is a planned 12,000 square foot liquor store.

Access Plan

The site will be accessed via two access existing points off SW Market Street. There is a third access point into the development, however, based on the location and design that will primarily be for truck traffic.

Sight Distance

Sight distance was measured at the north and south entrances into the site using the methodology recommending by the American Association of State Highway and Transportation Engineers (AASHTO). City code states that a speed limit of 25 mph governs areas with no posted speed limit. For 25 mph, AASHTO requires a minimum intersection sight distance of 280 feet. AASHTO requires a stopping sight distance of 155 feet for a roadway with a speed limit of 25 mph.

Based on field measurements at the north entrance, the available sight distance will be in excess of 280 feet and is adequate. The measured stopping sight distance is in excess of 155 feet and is adequate.

The south entrance has an available sight distance to the intersection with MO 291 to the east. To the west, the stopping sight distance is adequate. However, the intersection sight distance was only 180 feet and is less than the AASHTO required 280 feet.

Crash Analysis

Crash data was not analyzed as part of this study.

Trip Generation

The expected trip generation for the development was estimated using the 11th Edition of the Trip Generation Handbook published by the Institute of Transportation Engineers. The trip generation was based on AM Peak Hour of Generator along with Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 PM criteria for Liquor Store.

Estimates for the expected trips generated by the development are provided in Table 1.

Table 1 – Trip Generation					
ITE Land Use Code	Units	AM		PM	
		Trips In (vph)	Trips Out (vph)	Trips In (vph)	Trips Out (vph)
899 – Liquor Store	12,000 Sq Ft	28	26	80	80

Trip Distribution

The trip distribution pattern was determined for the site based on the existing directional traffic pattern of the peak period and based on a general analysis of the surrounding area. The detailed distribution patterns can be found in the appendix. Based on the existing traffic patterns, the type of development, and the metropolitan population centers, the new trips were assigned onto the roadway network, as shown below for the morning and afternoon periods.

Trip distribution during the morning peak period:

- 20% to/25% from SW Jefferson St
- 65% to/30% from SE Bailey Rd/MO 291
- 10% to/40% from MO 291 RIRO
- 5% to/from SW Market St (to the south)

Trip distribution during the afternoon peak period:

- 25% to/30% from SW Jefferson St
- 60% to/25% from SE Bailey Rd/MO291
- 10% to/40% from MO291 RIRO
- 5% to/from SW Market St (to the south)

Existing Plus Site Traffic Volumes

The expected development site-generated traffic volumes were added to the existing traffic. The volumes are shown on Figures 3 and 4.

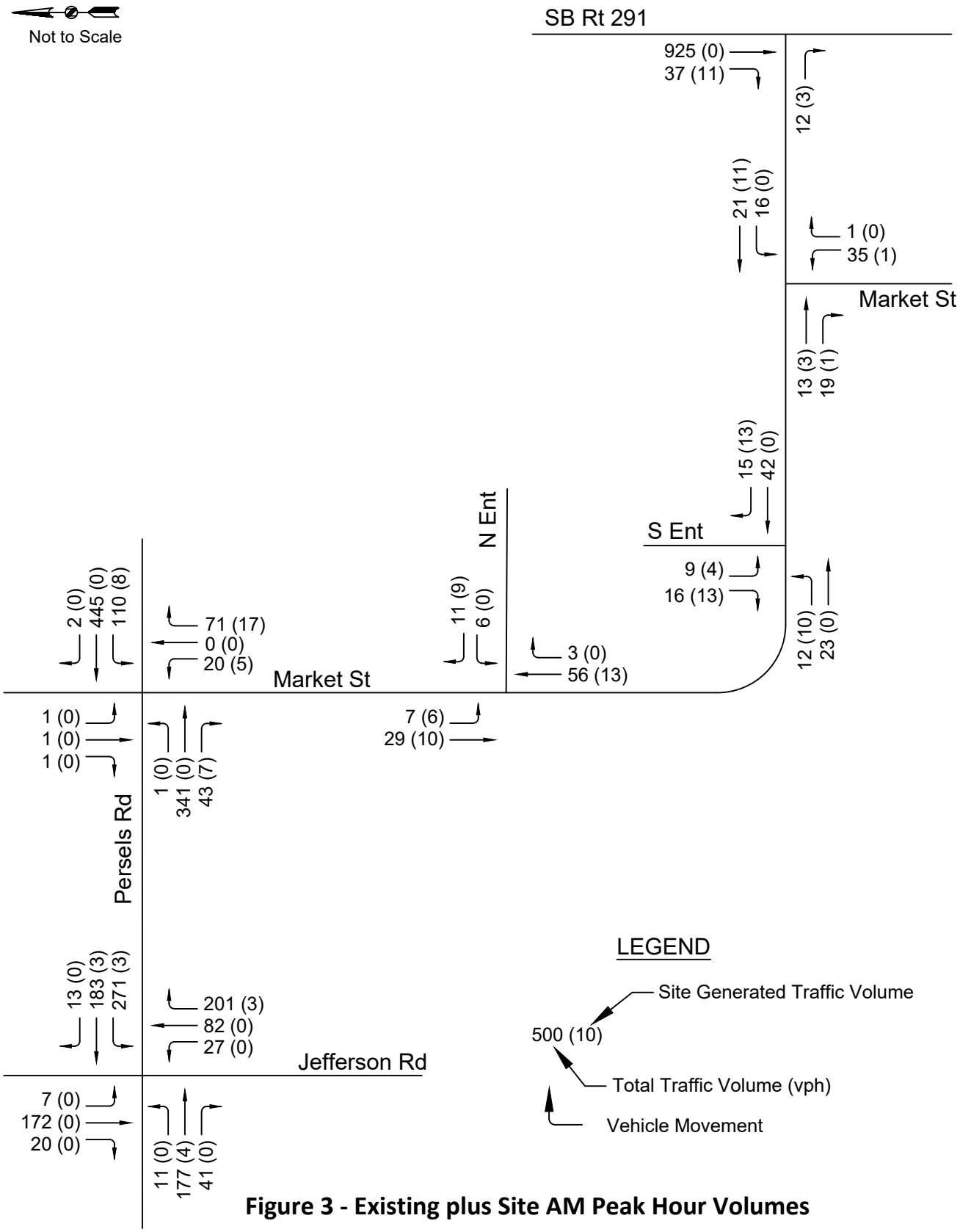


Figure 3 - Existing plus Site AM Peak Hour Volumes

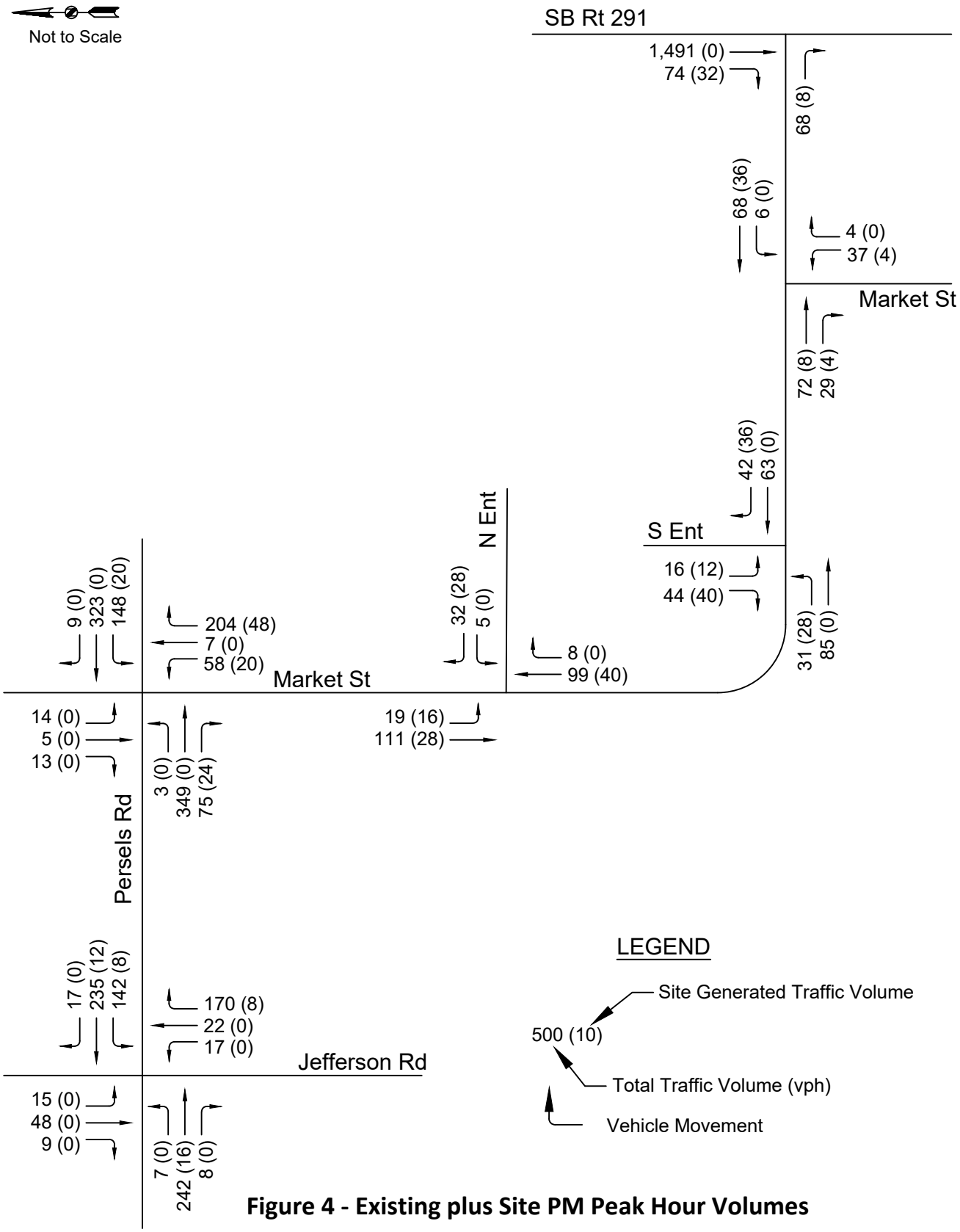


Figure 4 - Existing plus Site PM Peak Hour Volumes

Signal Warrant Study

It may be considered justified to install a traffic signal at a location if one or more of the traffic signal warrants listed in the 2009 MUTCD is met. The traffic signal warrants are:

Warrant 1: Eight-Hour Vehicular Volume
Warrant 2: Four-Hour Vehicular Volume
Warrant 3: Peak Hour
Warrant 4: Pedestrian Volume
Warrant 5: School Crossing
Warrant 6: Coordinated Signal System
Warrant 7: Crash Experience
Warrant 8: Roadway Network
Warrant 9: Intersection Near at Grade Crossing

Warrant 3 was evaluated at SW Market Street and SW Persels Road as part of this study for the existing and existing plus site conditions.

Warrant 3: Peak Hour

The peak hour warrant is satisfied if either of the two following conditions are met:

A: This condition is satisfied if any of the following conditions are met for a period of one hour during an average day:

1. The total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a stop sign equals or exceeds: 4 vehicles-hours for a one-lane approach or five vehicle hours for a two-land approach and
2. The volume on the same minor-street approach (one directions only) equals or exceeds 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes and
3. The total entering volume serviced during the hour equals or exceeds 650 vehicles per hour for intersections with three approaches or 800 vehicles per hour for intersections with four or more approaches.

(Condition A is not being examined in this study)

B: The peak hour warrant is satisfied if the vehicles per hour on both approaches of the major street and the vehicles on the higher volume approach of the minor street for one hour fall above the 2009 MUTCD Warrant 3 curve.

Warrant Analysis

The traffic volumes at SW Market Street and SW Persels Road are not expected to warrant a signal for the existing or existing plus site conditions. The raw data and curves from the 2009 MUTCD are included in the Appendix.

CAPACITY

The capacity analysis for the study intersections was completed using the methodology outlined in the Highway Capacity Manual, 6th Edition. The volume and capacity analysis was completed using Trafficware SYNCHRO software (latest version). The criteria for determining Level of Service (LOS) for signalized and unsignalized study intersections and access points are based on the average vehicle delay and is outlined in Table 2 below. Level of Service is defined as the measure of the quality of traffic flow and is graded from "A" to "F"—with "A" being the best situation and "F" being the worst.

Table 2 – Intersection Level of Service

Level of Service (LOS)	Average Control Delay (sec/veh)	
	Unsignalized	Signalized
A	< 10	< 10
B	< 15	< 20
C	< 25	< 35
D	< 35	< 55
E	< 50	< 80
F	≥ 50	≥ 80

Existing Conditions

SW Persels Road and SW Jefferson Street

All approaches operate at a LOS D or above for the morning and afternoon peak periods and the intersection has sufficient capacity for queuing vehicles. The overall LOS for the intersection is a LOS C during the morning peak period and a LOS B during the afternoon peak period.

SW Market Street and SW Persels Road

All approaches operate at a LOS D or above for the morning and afternoon peak periods and the intersection has sufficient capacity for queuing vehicles.

SW Market Street and SW Market Street/MO 291

The through movements of MO291 at the intersection of SW Market Street is not stop controlled and therefore operates in a free-flow condition. The only allowed turning movements are a right turn onto SW Market Street or a right turn from SW Market Street onto MO291. The southbound right turn operates at a LOS A for both morning and afternoon peak periods. The eastbound right turn operates at a LOS C or better and has sufficient capacity for queuing vehicles.

SW Market Street and North Entrance

All approaches operate at a LOS A and the intersection has sufficient capacity for queuing vehicles.

SW Market Street and South Entrance

All approaches operate at a LOS A and the intersection has sufficient capacity for queuing vehicles.

The results of the capacity analysis for the existing morning and afternoon peak hour conditions along with lane configuration and queue lengths are shown on Figures 5 and 6.

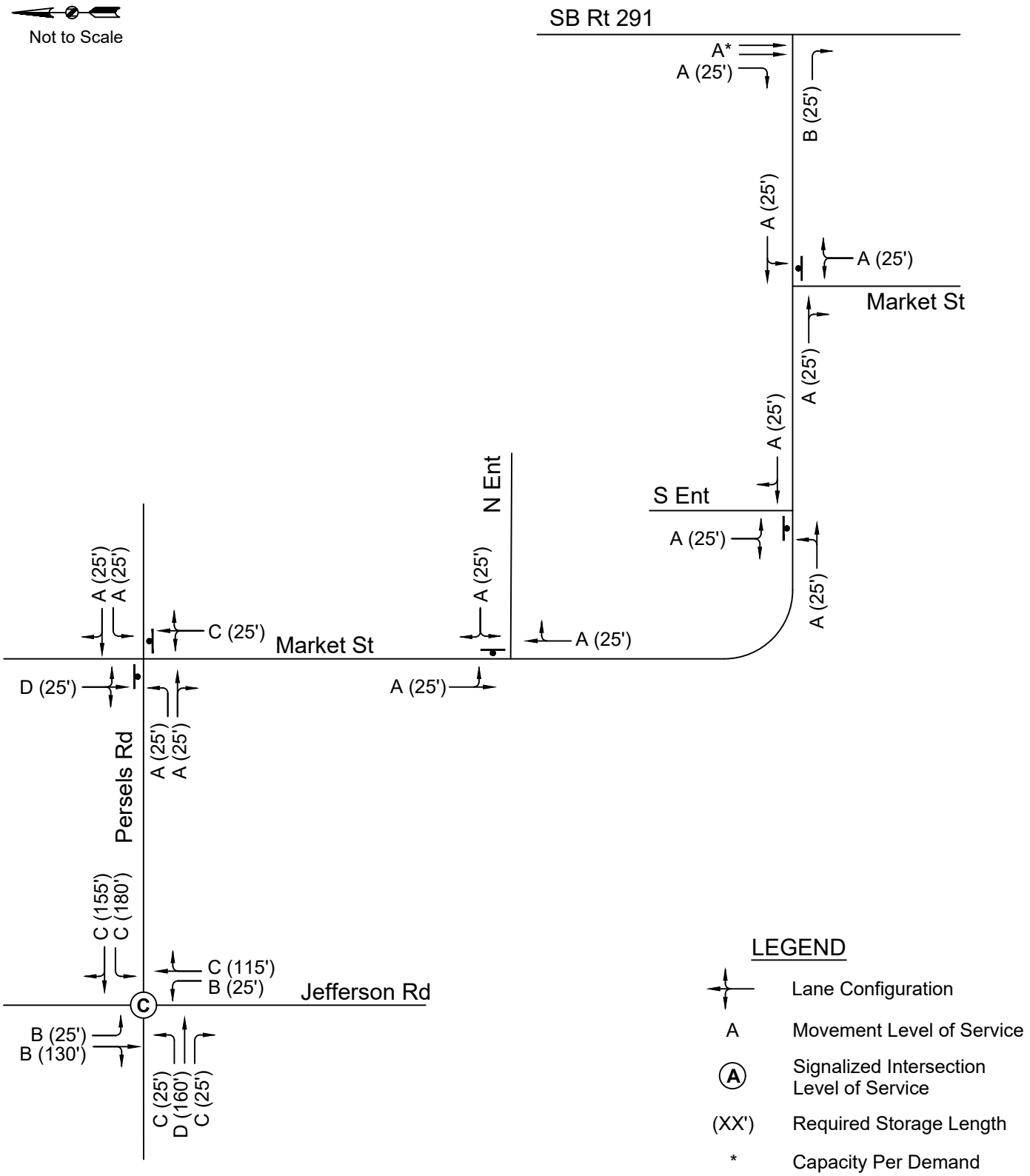


Figure 5 - Existing AM Level of Service

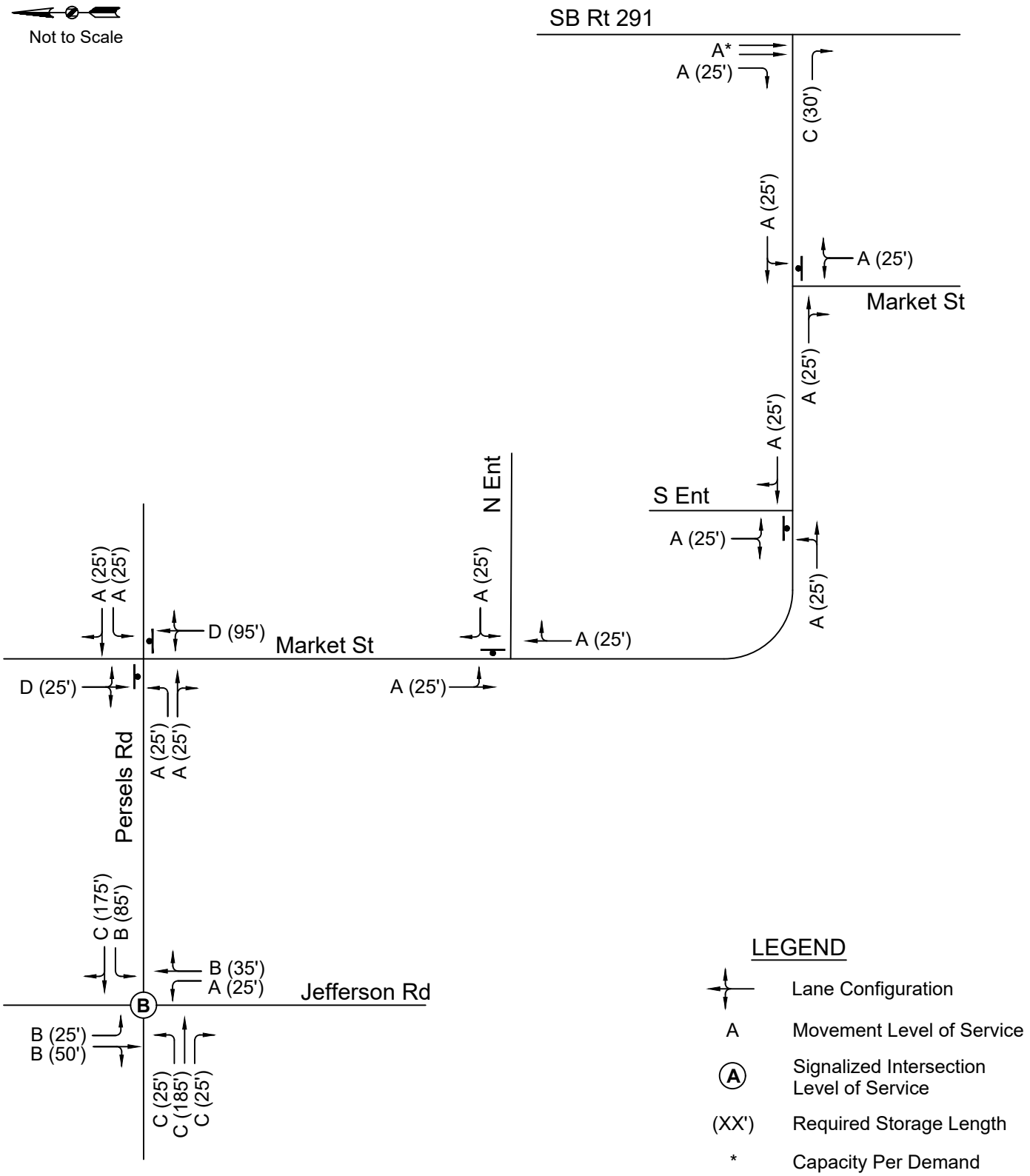


Figure 6 - Existing PM Level of Service

Existing Plus Site Conditions

SW Persels Road and SW Jefferson Street

Analysis for this intersection was completed with signal timings optimized to account for the additional development traffic. There is no significant change in operations of this intersection from the Existing Conditions. All approaches continue to operate at a LOS D or above for the morning and afternoon peak periods and the intersection has sufficient capacity for queuing vehicles.

SW Market Street and SW Persels Road

During the afternoon peak period, the northbound movement drops to a LOS F and southbound movement drops to a LOS E. The storage length is adequate for this movement and the expected delay during the afternoon peak is 59.3 seconds for the northbound movement and 40.3 seconds for the southbound movement. The LOS for the average control delay drops from a LOS D to LOS E at 35 seconds and from LOS E to LOS F at 50 seconds. The northbound queue length is expected to be 215 feet. The intersection does not warrant a signal at this time.

There is sufficient roadway width to re-stripe the northbound lanes for a left turn lane and a shared through/right lane. This lane configuration would decrease the northbound queue lengths to 60 feet. The northbound left lane would still operate at a LOS F however, the northbound shared through/right lane would operate at a LOS C. The northbound delay with the modified lane configuration would drop to 51 seconds which is only one second outside the LOS E criteria.

SW Market Street and SW Market Street/MO 291

The through movements of MO291 at the intersection of SW Market Street are not stop controlled and therefore operates in a free-flow condition. The only allowed turning movements are a right turn onto SW Market Street or a right turn from SW Market Street onto Route 291. The southbound right turn operates at a LOS A for both morning and afternoon peak periods. The eastbound right turn operates at a LOS C or better and has sufficient capacity for queuing vehicles.

SW Market Street and North Entrance

All approaches continue to operate at a LOS A with the additional site traffic and the intersection has sufficient capacity for queuing vehicles.

SW Market Street and South Entrance

All approaches continue to operate at a LOS A with the additional site traffic and the intersection has sufficient capacity for queuing vehicles.

The results of the analysis are shown for the morning and afternoon peak hour conditions along with lane configuration and queue lengths in Figures 7 and 8.

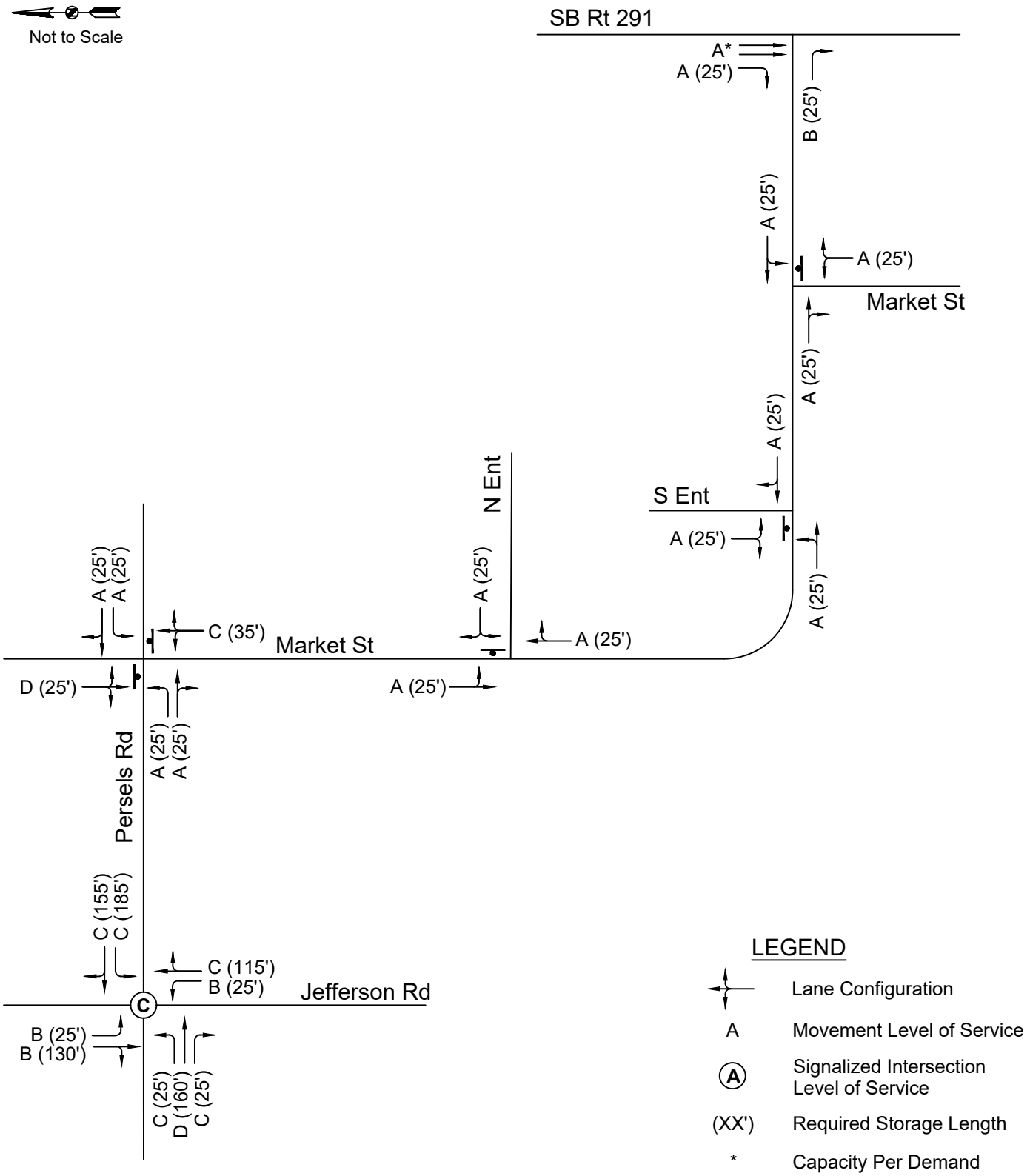


Figure 7 - Existing plus Site AM Level of Service

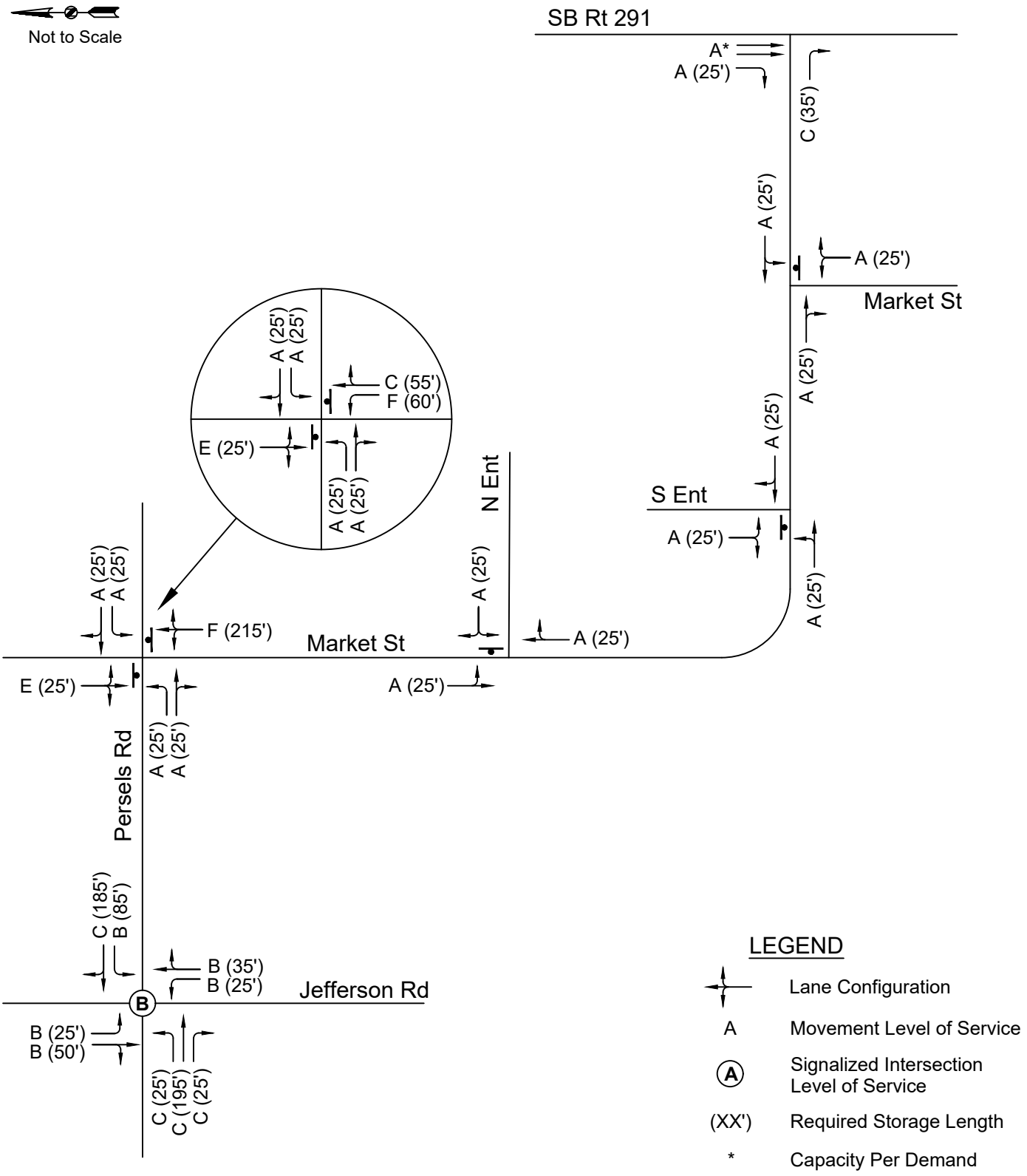


Figure 8 - Existing plus Site PM Level of Service

RECOMMENDATIONS

This study documents the findings of the traffic analysis of the expected traffic for the Macadoodle development in Lee's Summit, Missouri. The study includes an analysis of the existing conditions, existing plus site conditions, and future conditions.

Based on the results of the SYNCHRO analysis, observations from the field, and engineering judgment, the following recommendations are made:

- Monitor the signalized SW Persels Road and SW Jefferson Road intersection as additional development occurs and adjust signal timings as necessary.
- Re-stripe the northbound lanes of SW Market Street and SW Persels Road to provide a left-turn lane and a shared through/right-turn lane.

APPENDIX

Rt 291 & Market
AM

	Eastbound				Westbound				Northbound				Southbound				
Time	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Int. Total
7:00	0	0	5	5	0	0	0	0	0	0	0	0	0	179	1	180	185
7:15	0	0	4	4	0	0	0	0	0	0	0	0	0	258	3	261	265
7:30	0	0	0	0	0	0	0	0	0	0	0	0	0	235	4	239	239
7:45	0	0	2	2	0	0	0	0	0	0	0	0	0	246	5	251	253
8:00	0	0	3	3	0	0	0	0	0	0	0	0	0	186	14	200	203
8:15	0	0	6	6	0	0	0	0	0	0	0	0	0	224	1	225	231
8:30	0	0	3	3	0	0	0	0	0	0	0	0	0	234	4	238	241
8:45	0	0	7	7	0	0	0	0	0	0	0	0	0	207	10	217	224
Total	**0**	**0**	**30**	**30**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1769**	**42**	**1811**	**1841**

	PHF																				
Time	EB Left	EB Thru	EB Right	EB Total	PHF	WB Left	WB Thru	WB Right	WB Total	PHF	NB Left	NB Thru	NB Right	NB Total	PHF	SB Left	SB Thru	SB Right	SB Total	PHF	Int. Total
7:15	0	0	4	4	**0.56**	0	0	0	0	**#DIV/0!**	0	0	0	0	**#DIV/0!**	0	258	3	261	**0.91**	265
7:30	0	0	0	0		0	0	0	0		0	0	0	0		0	235	4	239		239
7:45	0	0	2	2		0	0	0	0		0	0	0	0		0	246	5	251		253
8:00	0	0	3	3		0	0	0	0		0	0	0	0		0	186	14	200		203
Total	0	0	9	9		0	0	0	0		0	0	0	0		0	925	26	951		960

Persels & Jefferson
AM

	Eastbound				Westbound				Northbound				Southbound				
Time	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Int. Total
7:00	2	52	2	56	27	42	3	72	2	2	19	23	0	9	1	10	161
7:15	2	39	9	50	64	36	2	102	2	5	27	34	1	25	5	31	217
7:30	4	27	10	41	84	34	2	120	6	21	78	105	2	67	4	73	339
7:45	0	44	7	51	51	49	4	104	3	2	24	29	1	30	2	33	217
8:00	5	58	15	78	69	54	5	128	16	54	69	139	3	50	9	62	407
8:15	1	63	3	67	32	41	3	76	5	22	45	72	4	8	6	18	233
8:30	1	27	0	28	23	27	1	51	0	3	15	18	2	3	1	6	103
8:45	1	39	4	44	23	29	3	55	2	3	16	21	1	4	4	9	129
Total	**16**	**349**	**50**	**415**	**373**	**312**	**23**	**708**	**36**	**112**	**293**	**441**	**14**	**196**	**32**	**242**	**1806**

	PHF																				
Time	EB Left	EB Thru	EB Right	EB Total	PHF	WB Left	WB Thru	WB Right	WB Total	PHF	NB Left	NB Thru	NB Right	NB Total	PHF	SB Left	SB Thru	SB Right	SB Total	PHF	Int. Total
7:15	2	39	9	50	**0.71**	64	36	2	102	**0.89**	2	5	27	34	**0.55**	1	25	5	31	**0.68**	217
7:30	4	27	10	41		84	34	2	120		6	21	78	105		2	67	4	73		339
7:45	0	44	7	51		51	49	4	104		3	2	24	29		1	30	2	33		217
8:00	5	58	15	78		69	54	5	128		16	54	69	139		3	50	9	62		407
Total	11	168	41	220		268	173	13	454		27	82	198	307		7	172	20	199		1180

Persels & Market
AM

	Eastbound				Westbound				Northbound				Southbound				
Time	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Int. Total
7:00	0	62	9	71	14	67	1	82	4	0	6	10	0	0	0	0	163
7:15	0	67	6	73	19	101	0	120	2	0	12	14	0	0	0	0	207
7:30	1	101	6	108	24	123	0	147	1	0	13	14	0	0	1	1	270
7:45	0	60	6	66	36	92	1	129	6	0	16	22	1	1	0	2	219
8:00	0	113	18	131	23	129	1	153	6	0	13	19	0	0	0	0	303
8:15	0	99	16	115	15	70	1	86	5	0	19	24	0	0	0	0	225
8:30	0	40	9	49	17	50	2	69	3	0	20	23	1	0	1	2	143
8:45	0	51	8	59	28	50	1	79	5	2	19	26	3	1	1	5	169
Total	**1**	**593**	**78**	**672**	**176**	**682**	**7**	**865**	**32**	**2**	**118**	**152**	**5**	**2**	**3**	**10**	**1699**

	PHF																				
Time	EB Left	EB Thru	EB Right	EB Total	PHF	WB Left	WB Thru	WB Right	WB Total	PHF	NB Left	NB Thru	NB Right	NB Total	PHF	SB Left	SB Thru	SB Right	SB Total	PHF	Int. Total
7:15	0	67	6	73	**0.72**	19	101	0	120	**0.9**	2	0	12	14	**0.78**	0	0	0	0	**0.38**	207
7:30	1	101	6	108		24	123	0	147		1	0	13	14		0	0	1	1		270
7:45	0	60	6	66		36	92	1	129		6	0	16	22		1	1	0	2		219
8:00	0	113	18	131		23	129	1	153		6	0	13	19		0	0	0	0		303
Total	1	341	36	378		102	445	2	549		15	0	54	69		1	1	1	3		999

Rt 291 & Market
PM

	Eastbound				Westbound				Northbound				Southbound				
Time	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Int. Total
16:00	0	0	9	9	0	0	0	0	0	0	0	0	0	306	9	315	324
16:15	0	0	10	10	0	0	0	0	0	0	0	0	0	413	5	418	428
16:30	0	0	18	18	0	0	0	0	0	0	0	0	0	383	22	405	423
16:45	0	0	23	23	0	0	0	0	0	0	0	0	0	389	6	395	418
17:00	0	0	14	14	0	0	0	0	0	0	0	0	0	426	4	430	444
17:15	0	0	9	9	0	0	0	0	1	0	0	1	0	413	4	417	427
17:30	0	0	6	6	0	0	0	0	0	0	0	0	0	395	5	400	406
17:45	0	0	2	2	0	0	0	0	0	0	0	0	0	290	6	296	298
Total	**0**	**0**	**91**	**91**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**3015**	**61**	**3076**	**3168**

	PHF																				
Time	EB Left	EB Thru	EB Right	EB Total	PHF	WB Left	WB Thru	WB Right	WB Total	PHF	NB Left	NB Thru	NB Right	NB Total	PHF	SB Left	SB Thru	SB Right	SB Total	PHF	Int. Total
4:00	0	0	9	9	0.65	0	0	0	0	#DIV/0!	0	0	0	0	#DIV/0!	0	306	9	315	0.92	324
4:15	0	0	10	10		0	0	0	0		0	0	0	0		0	413	5	418		428
4:30	0	0	18	18		0	0	0	0		0	0	0	0		0	383	22	405		423
4:45	0	0	23	23		0	0	0	0		0	0	0	0		0	389	6	395		418
Total	0	0	60	60		0	0	0	0		0	0	0	0		0	1491	42	1533		1593

Persels & Jefferson
PM

	Eastbound				Westbound				Northbound				Southbound				
Time	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Int. Total
16:00	2	57	1	60	31	53	7	91	3	10	57	70	5	15	3	23	244
16:15	2	53	3	58	40	52	3	95	7	2	36	45	3	6	3	12	210
16:30	2	55	1	58	30	49	5	84	3	4	44	51	3	14	2	19	212
16:45	1	60	3	64	33	66	2	101	4	6	25	35	4	13	1	18	218
17:00	1	36	3	40	20	67	5	92	2	10	46	58	4	6	1	11	201
17:15	3	57	3	63	33	48	7	88	1	1	31	33	4	2	7	13	197
17:30	1	39	3	43	14	74	3	91	2	4	28	34	3	1	4	8	176
17:45	1	41	2	44	24	88	5	117	0	2	10	12	3	4	5	12	185
Total	**13**	**398**	**19**	**430**	**225**	**497**	**37**	**759**	**22**	**39**	**277**	**338**	**29**	**61**	**26**	**116**	**1643**

	PHF																				
Time	EB Left	EB Thru	EB Right	EB Total	PHF	WB Left	WB Thru	WB Right	WB Total	PHF	NB Left	NB Thru	NB Right	NB Total	PHF	SB Left	SB Thru	SB Right	SB Total	PHF	Int. Total
4:00	2	57	1	60	0.94	31	53	7	91	0.92	3	10	57	70	0.72	5	15	3	23	0.78	244
4:15	2	53	3	58		40	52	3	95		7	2	36	45		3	6	3	12		210
4:30	2	55	1	58		30	49	5	84		3	4	44	51		3	14	2	19		212
4:45	1	60	3	64		33	66	2	101		4	6	25	35		4	13	1	18		218
Total	7	225	8	240		134	220	17	371		17	22	162	201		15	48	9	72		884

Persels & Market
PM

	Eastbound				Westbound				Northbound				Southbound				
Time	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Int. Total
16:00	2	100	8	110	27	76	1	104	17	2	39	58	6	1	1	8	280
16:15	0	87	11	98	34	85	4	123	7	3	39	49	3	3	6	12	282
16:30	0	92	17	109	35	60	2	97	8	1	41	50	2	1	4	7	263
16:45	1	70	15	86	32	102	2	136	6	1	37	44	3	0	2	5	271
17:00	0	79	9	88	24	78	1	103	11	0	30	41	1	0	0	1	233
17:15	1	78	12	91	21	82	4	107	9	0	21	30	2	1	1	4	232
17:30	0	70	8	78	17	79	0	96	9	0	19	28	2	0	1	3	205
17:45	0	40	6	46	18	108	1	127	8	0	16	24	2	0	2	4	201
Total	**4**	**616**	**86**	**706**	**208**	**670**	**15**	**893**	**75**	**7**	**242**	**324**	**21**	**6**	**17**	**44**	**1967**

	PHF																				
Time	EB Left	EB Thru	EB Right	EB Total	PHF	WB Left	WB Thru	WB Right	WB Total	PHF	NB Left	NB Thru	NB Right	NB Total	PHF	SB Left	SB Thru	SB Right	SB Total	PHF	Int. Total
4:00	2	100	8	110	0.92	27	76	1	104	0.85	17	2	39	58	0.87	6	1	1	8	0.67	280
4:15	0	87	11	98		34	85	4	123		7	3	39	49		3	3	6	12		282
4:30	0	92	17	109		35	60	2	97		8	1	41	50		2	1	4	7		263
4:45	1	70	15	86		32	102	2	136		6	1	37	44		3	0	2	5		271
Total	3	349	51	403		128	323	9	460		38	7	156	201		14	5	13	32		1096

Ashton Farms Site Trip Generation

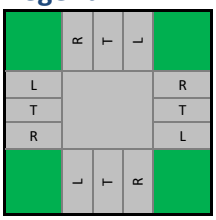
ITE Trip Generation Manual - 11th Edition

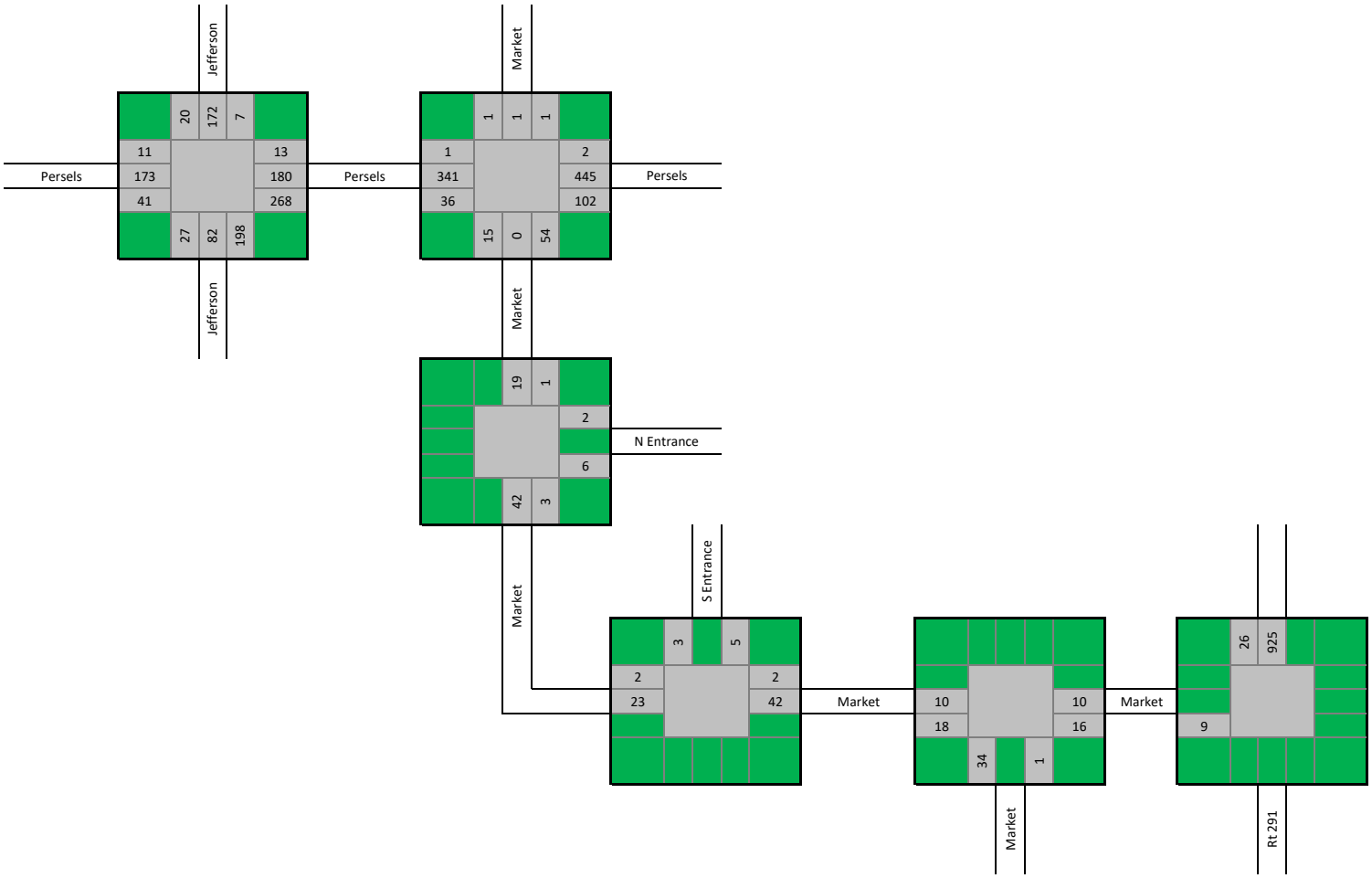
Highlighted text indicates trips used in Synchro and Warrant Analysis

Land Use	ITE Code	Size	Units	Equation	Trips (Eq.)	Av. Rate	Trips (Av. Rate)	In%	Out%	Trips In	Trips Out
Liquor Store **(Weekday)**	899	12	1000 Sq Ft	Ln(T)=0.52Ln(X)+5.75	1144	107.21	1287	50%	50%	572	572
Liquor Store **(AM Peak Hour of Generator)**	899	12	1000 Sq Ft	Ln(T)=0.82Ln(X)+1.95	54	5.08	61	51%	49%	28	26
Liquor Store **(PM)**	899	12	1000 Sq Ft	Ln(T)=0.47Ln(X)+3.91	160	16.62	199	50%	50%	80	80

Existing AM Peak Hour Traffic

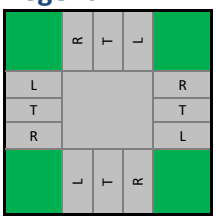
Legend

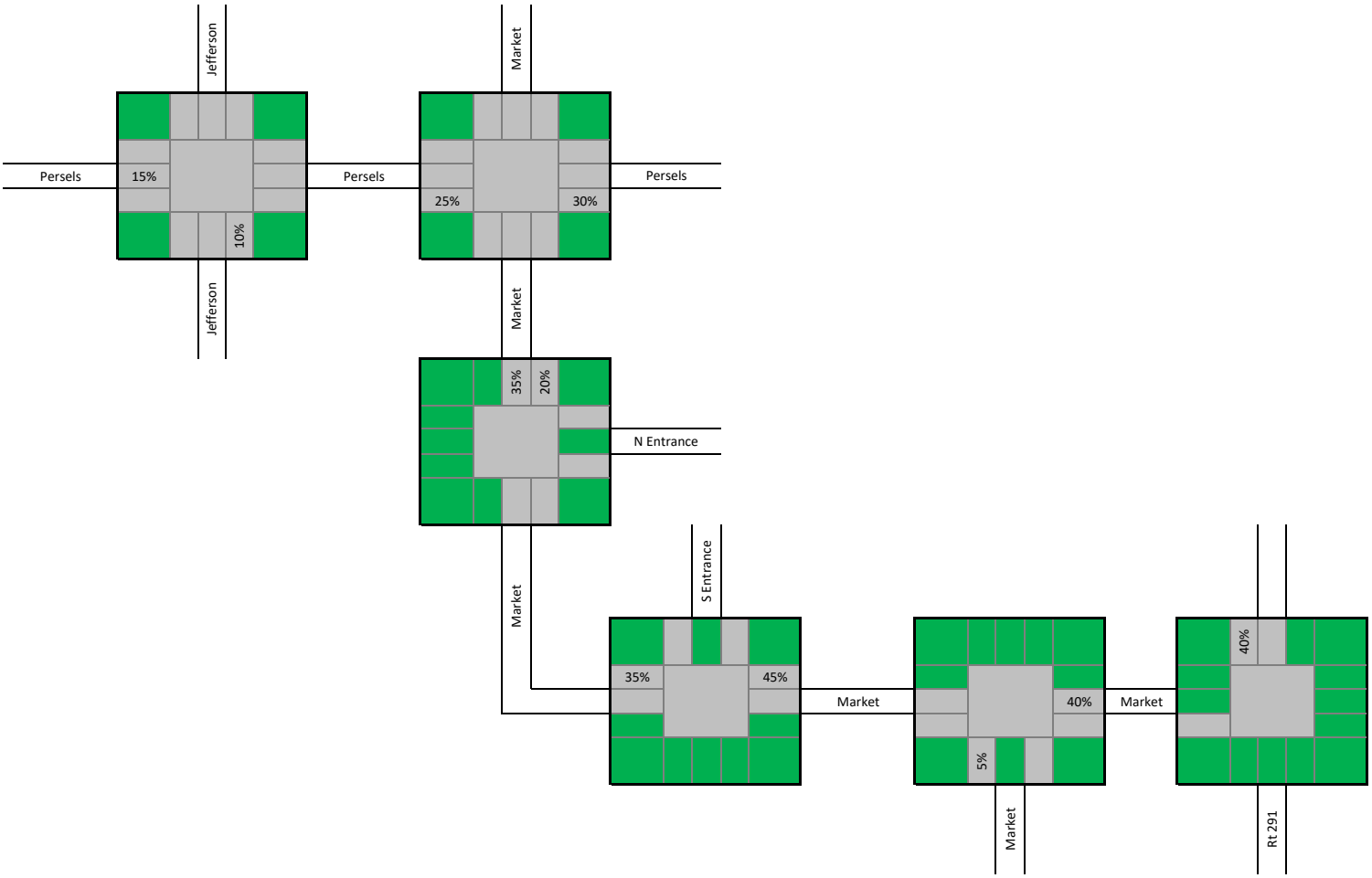




AM Distribution In

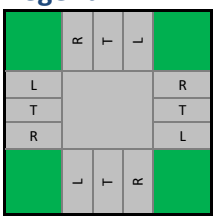
Legend

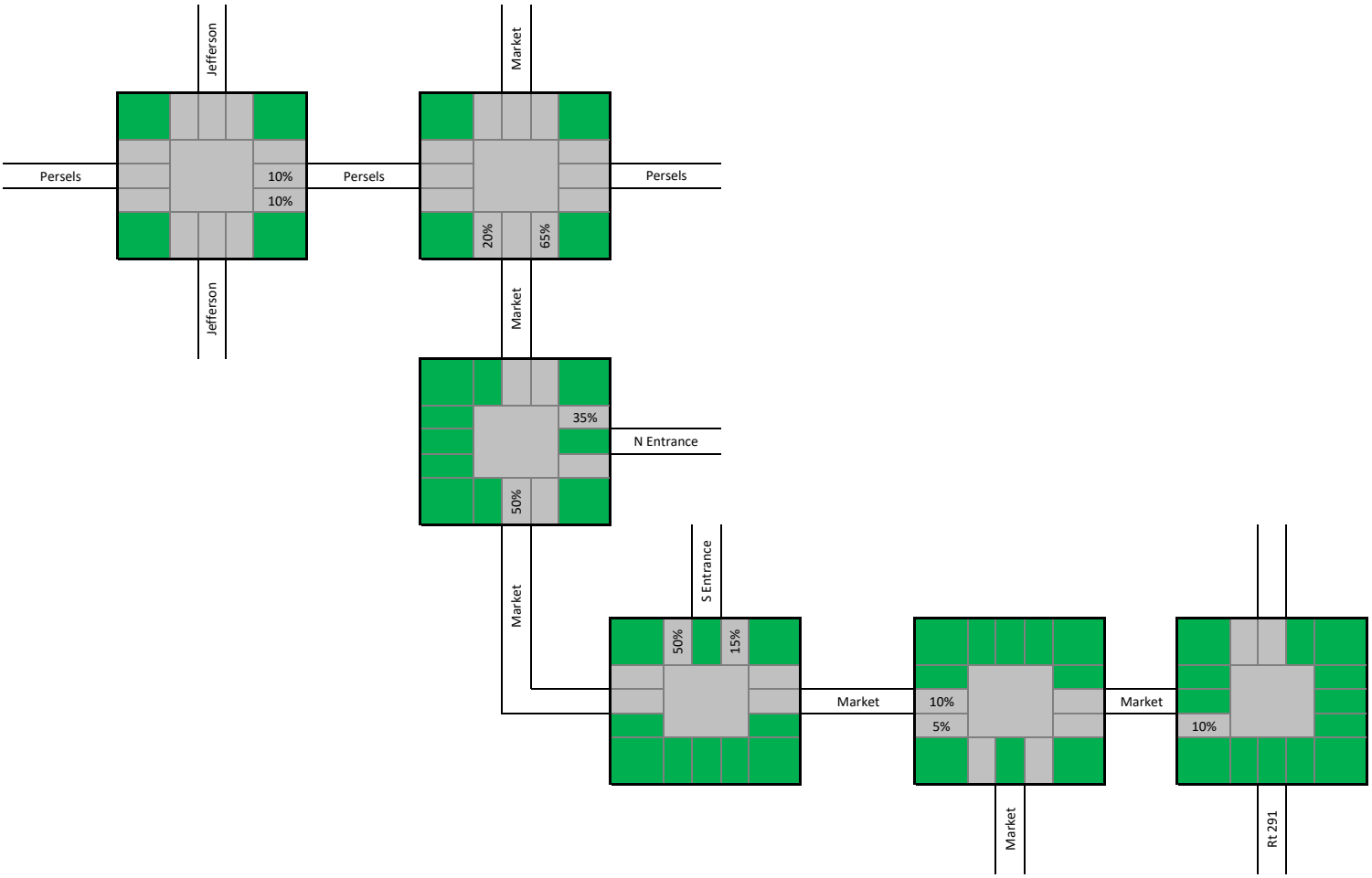




AM Distribution Out

Legend

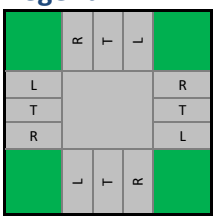


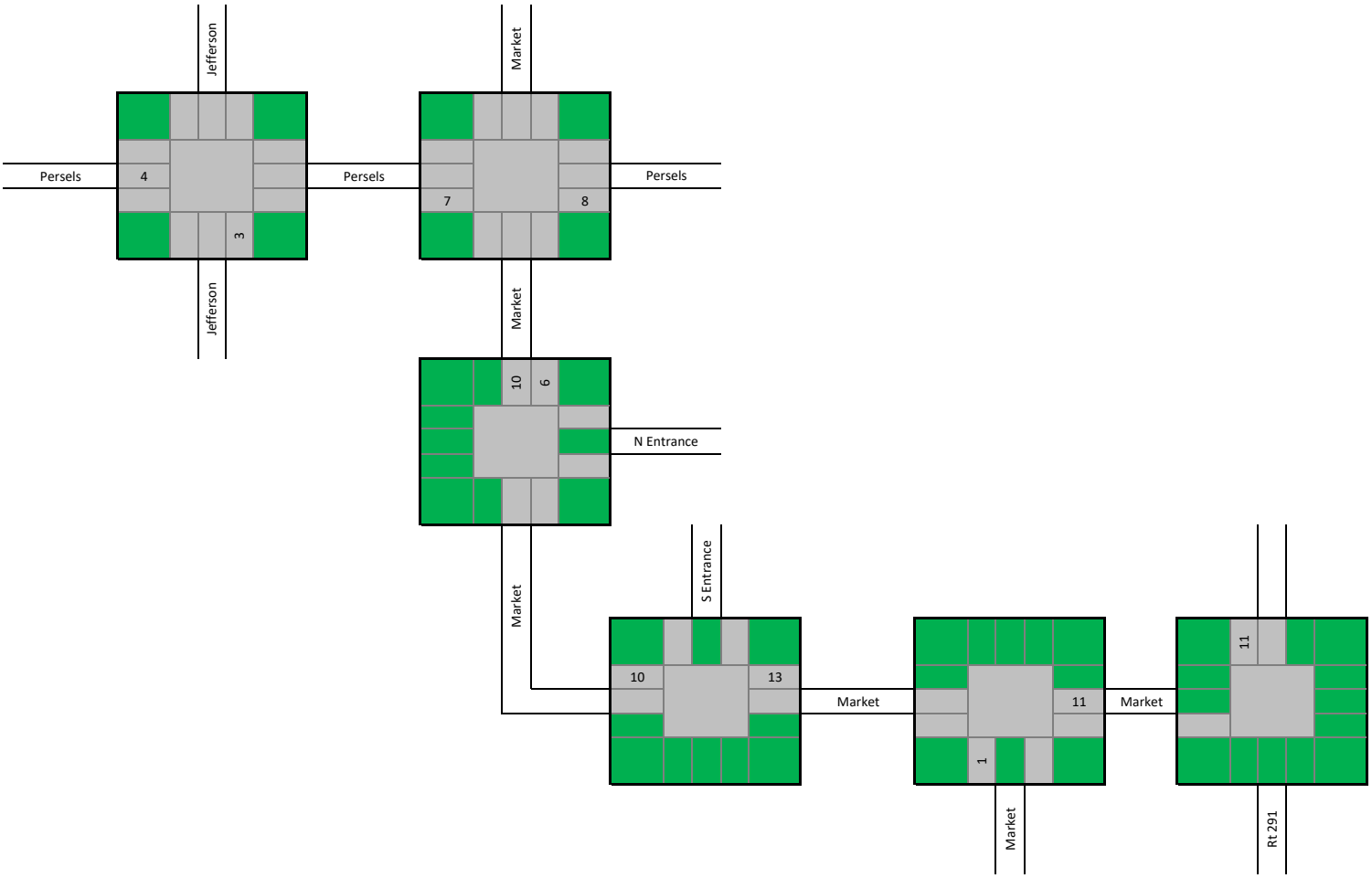


AM Trips In

Trips
28

Legend

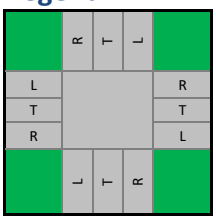


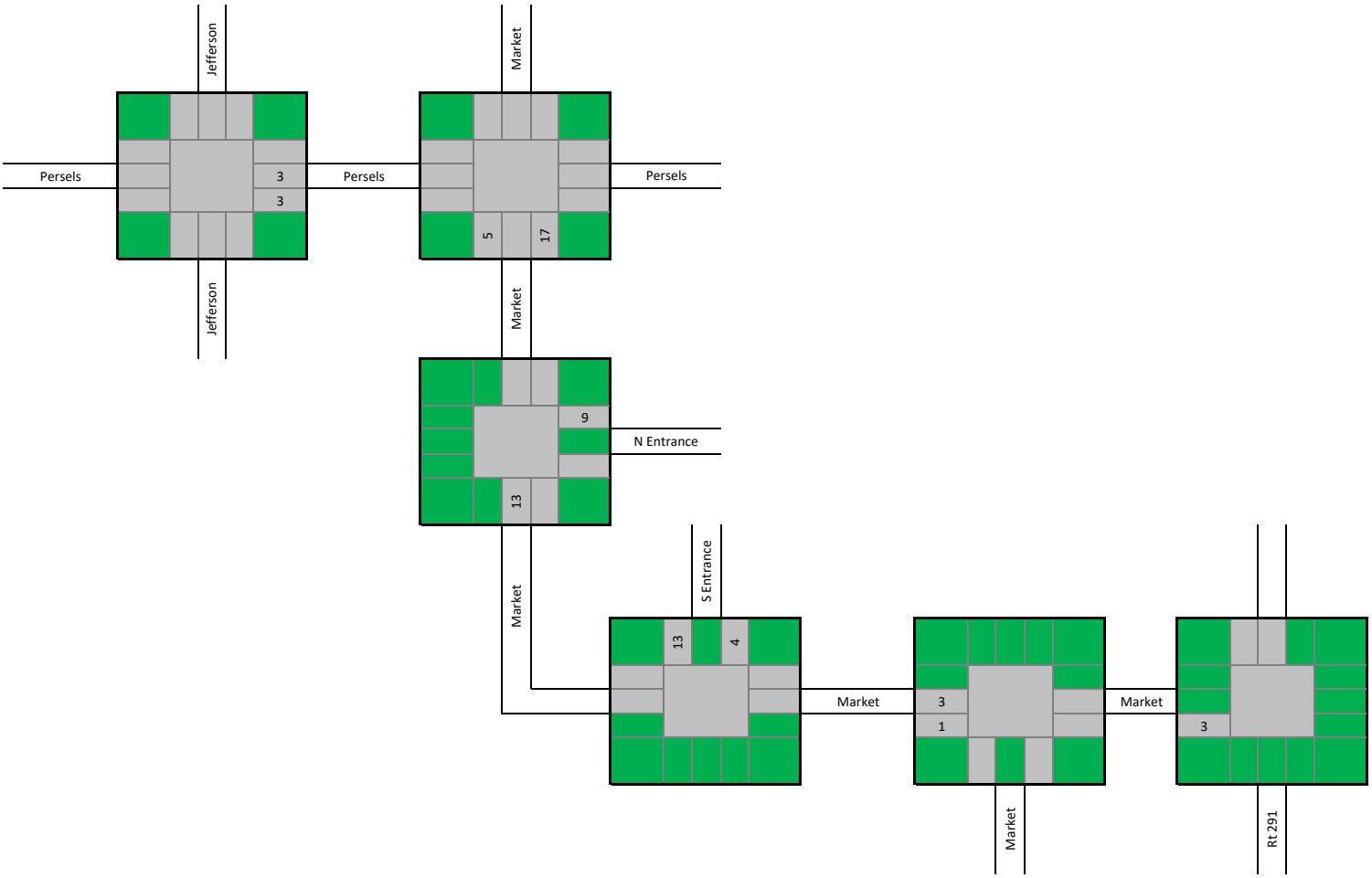


AM Trips Out

Trips
26

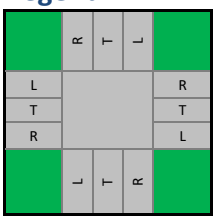
Legend

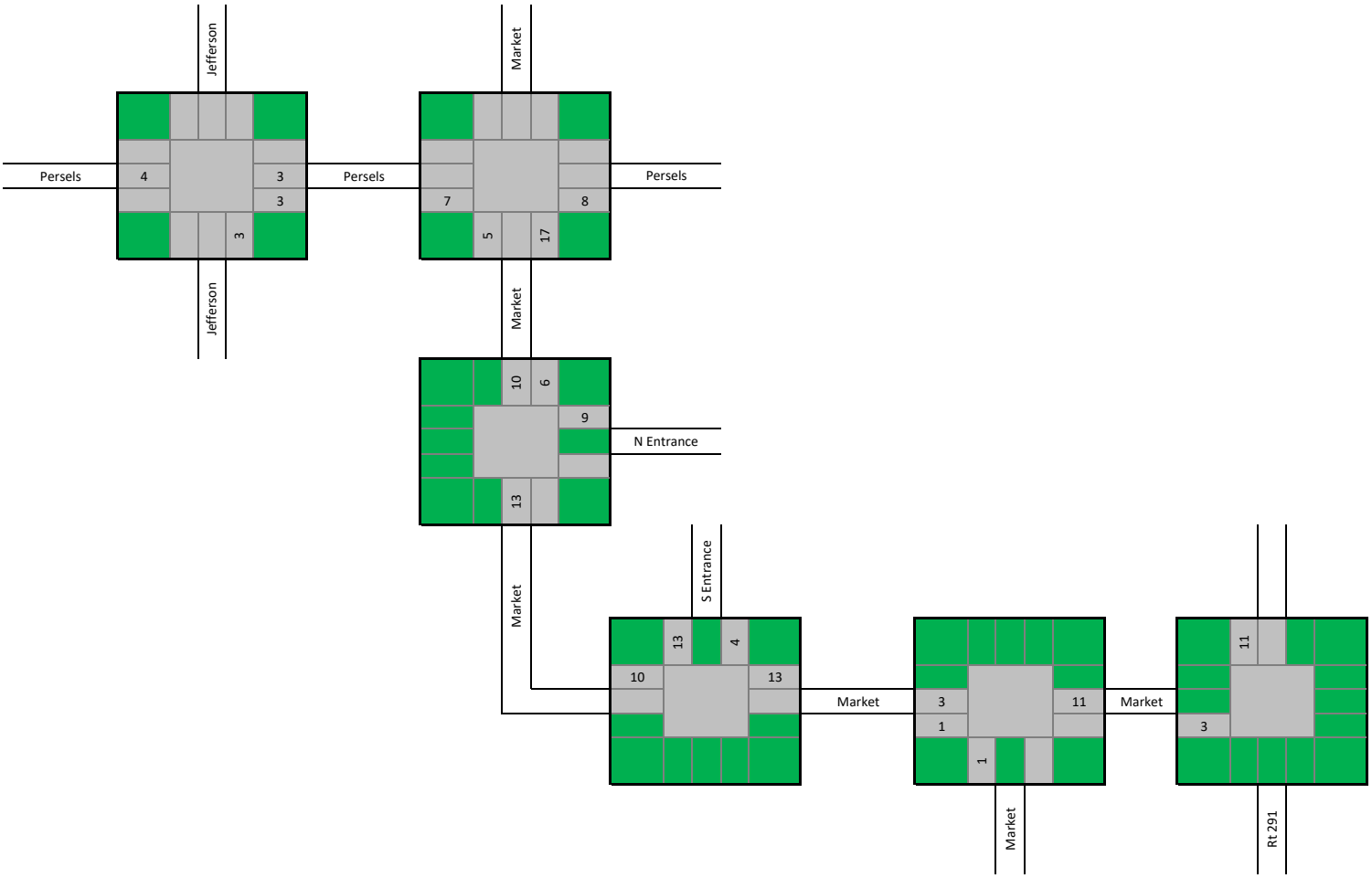




AM Total Trips

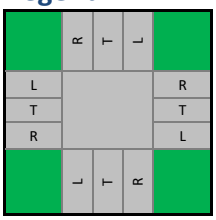
Legend

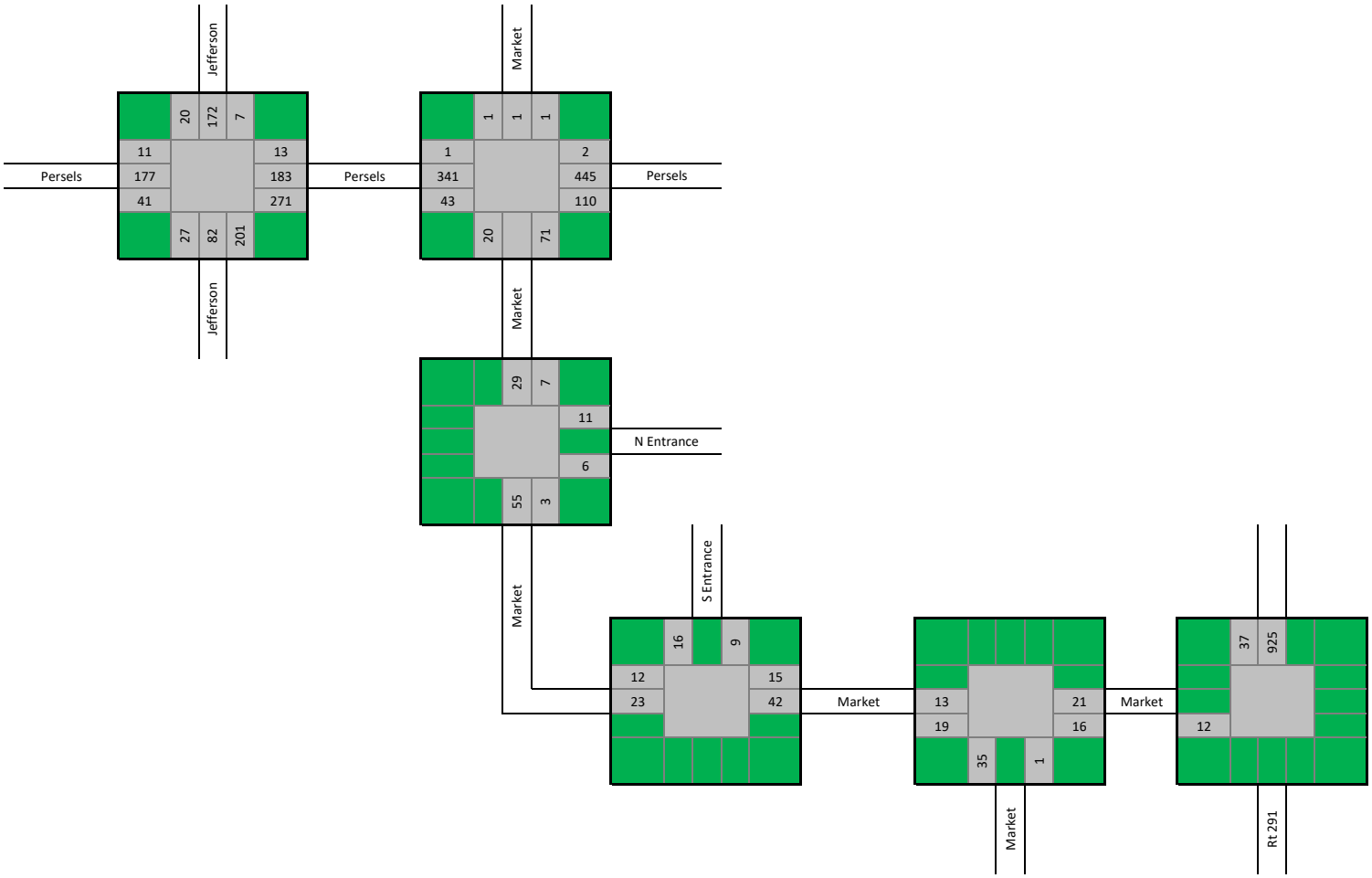




AM Existing plus Site

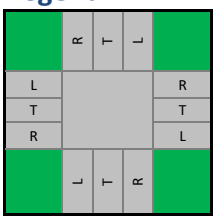
Legend

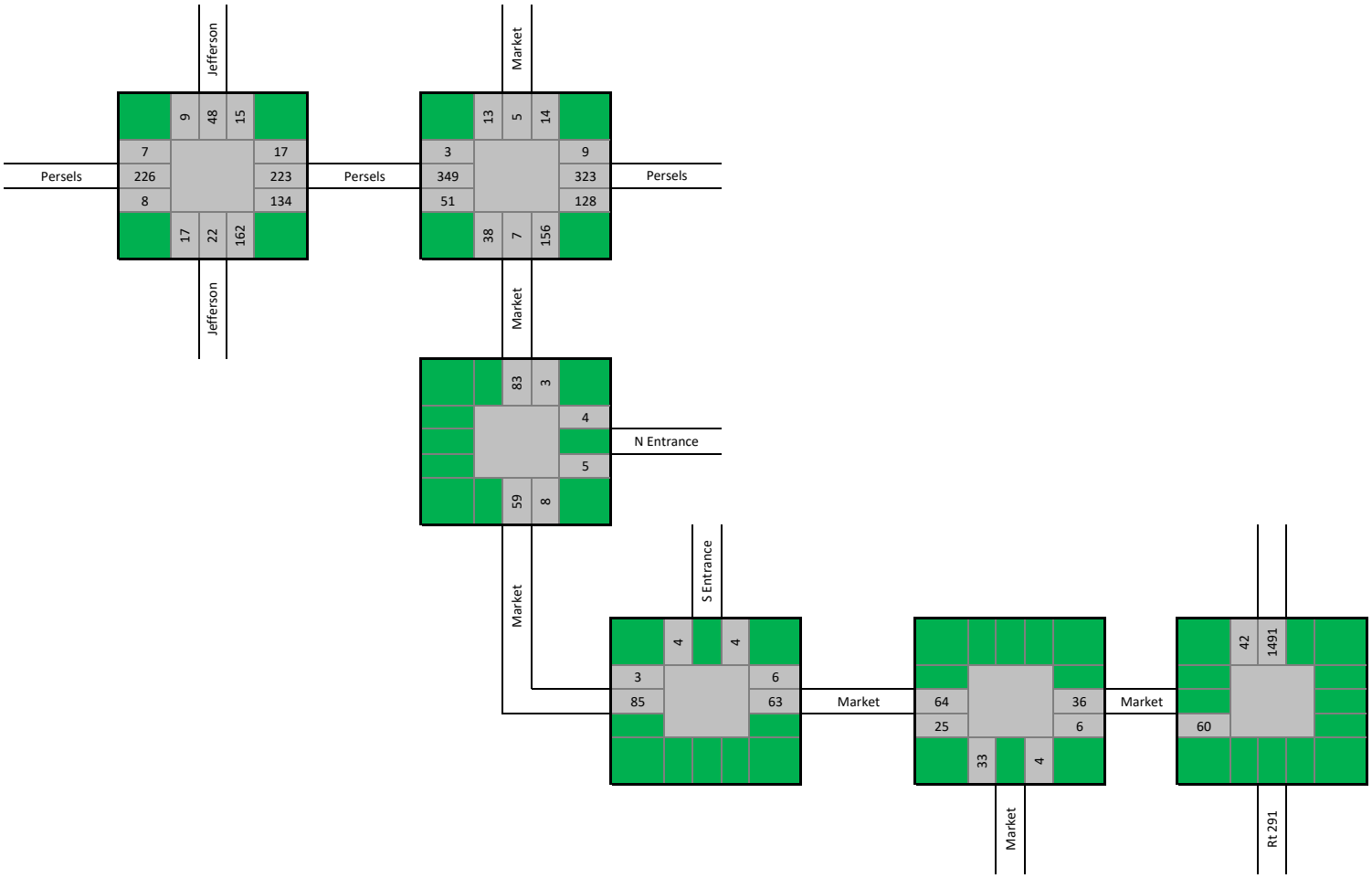




Existing PM Peak Hour Traffic

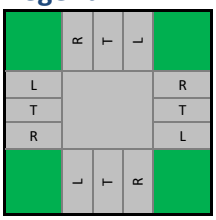
Legend

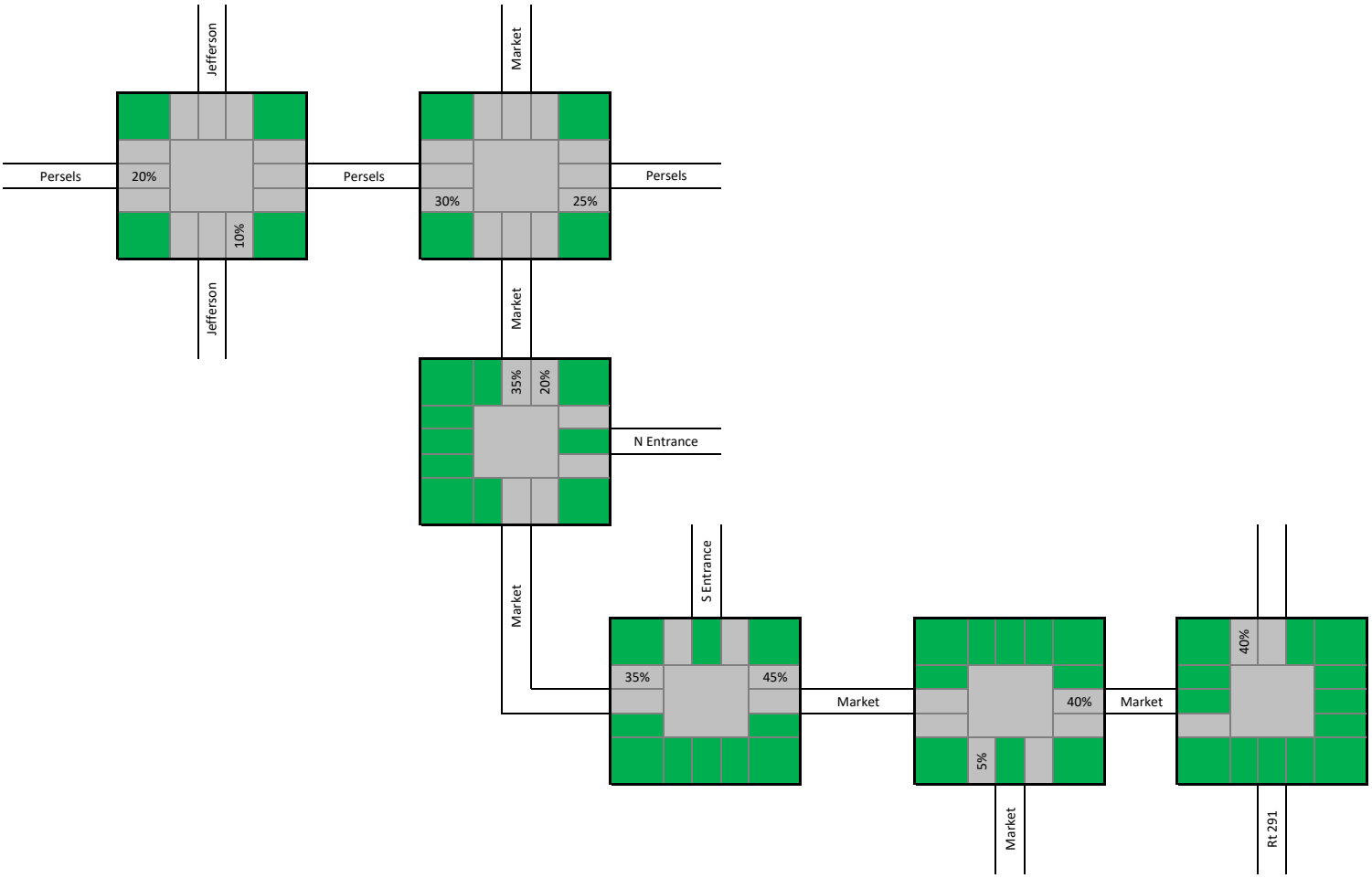




PM Distribution In

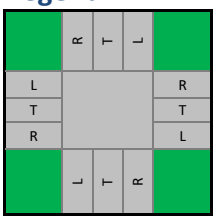
Legend

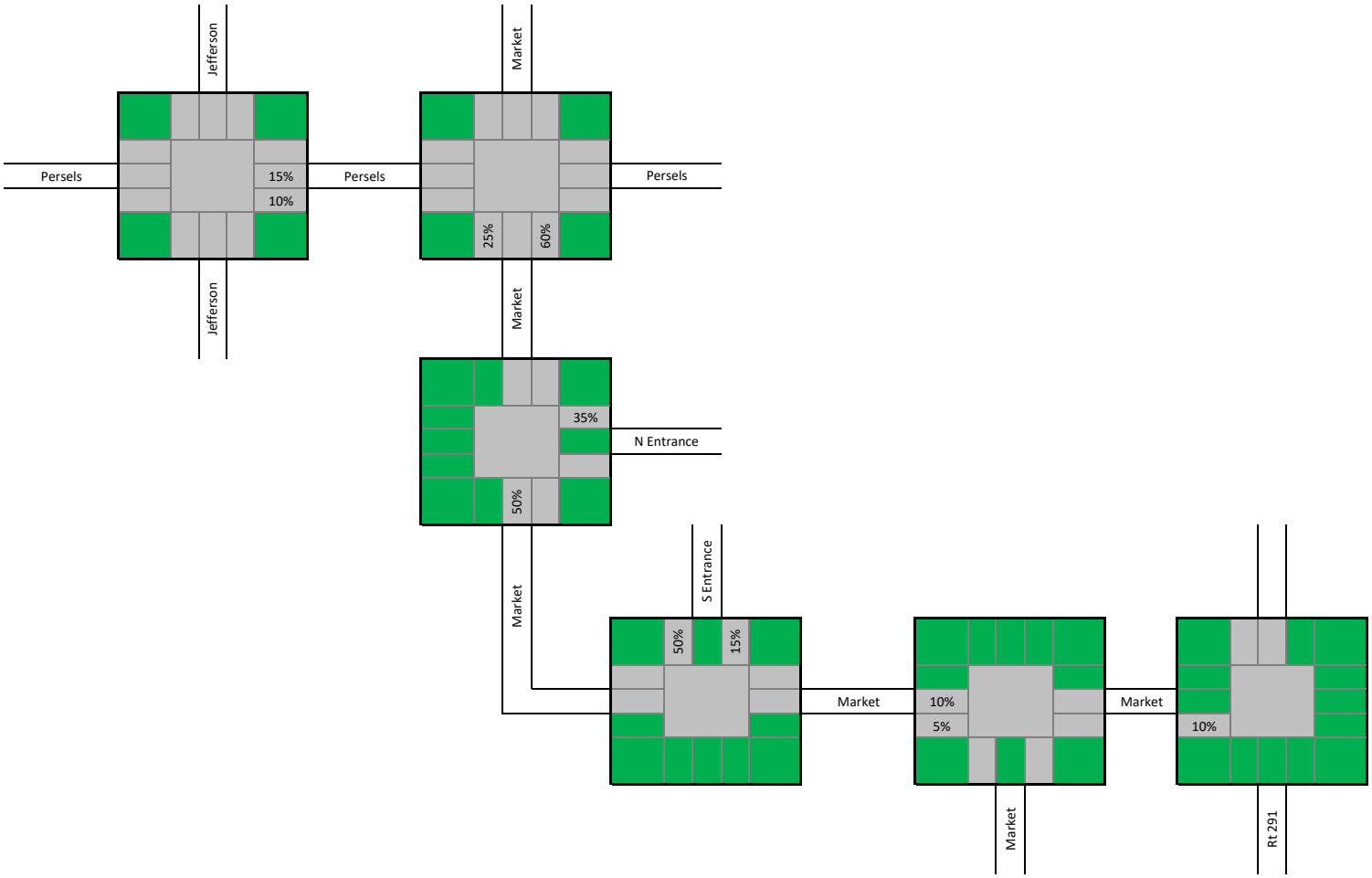




PM Distribution Out

Legend

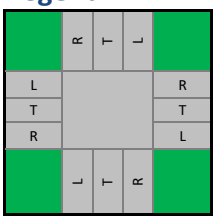


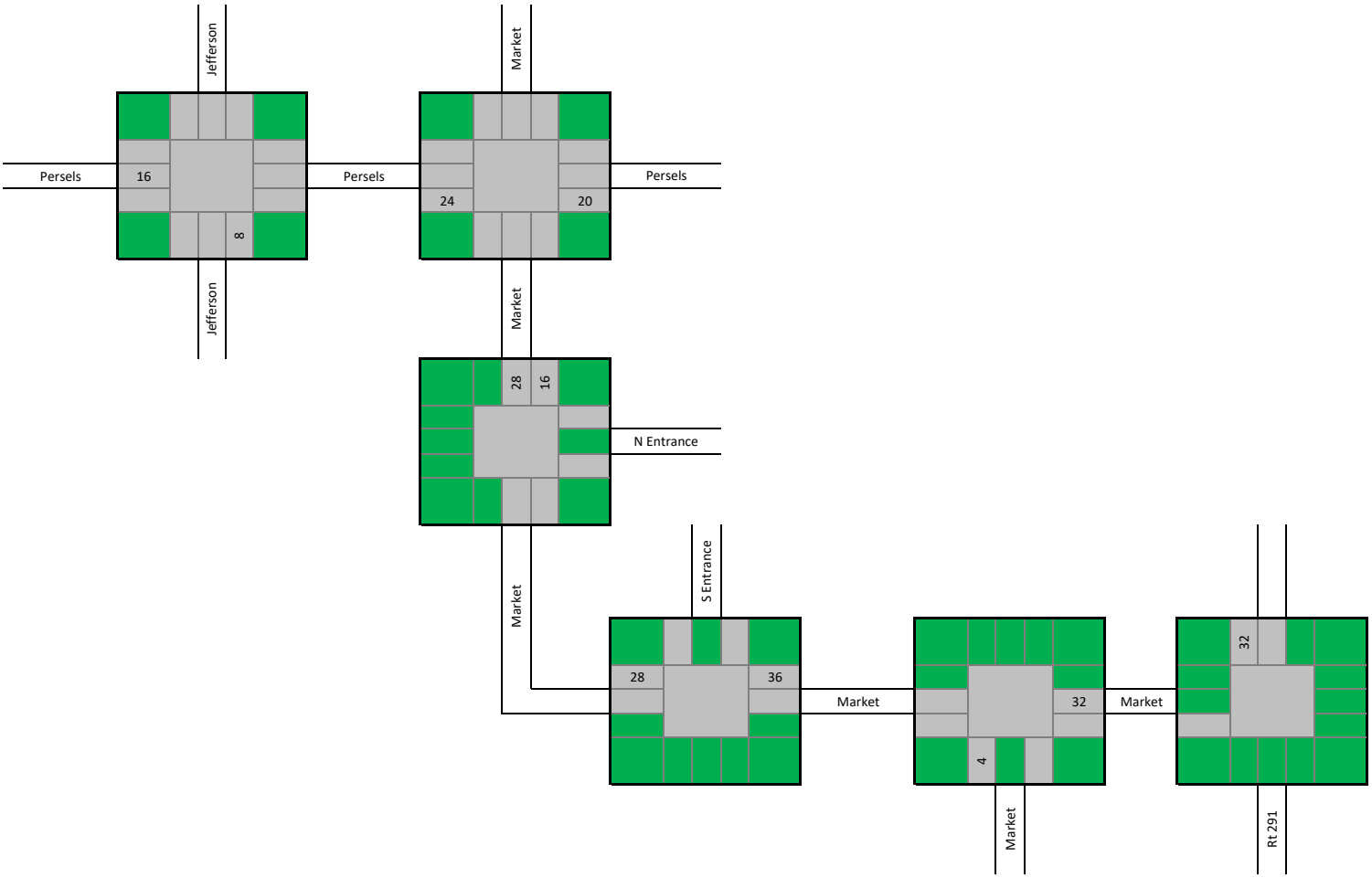


PM Trips In

Trips 80

Legend

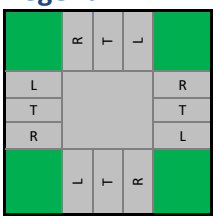


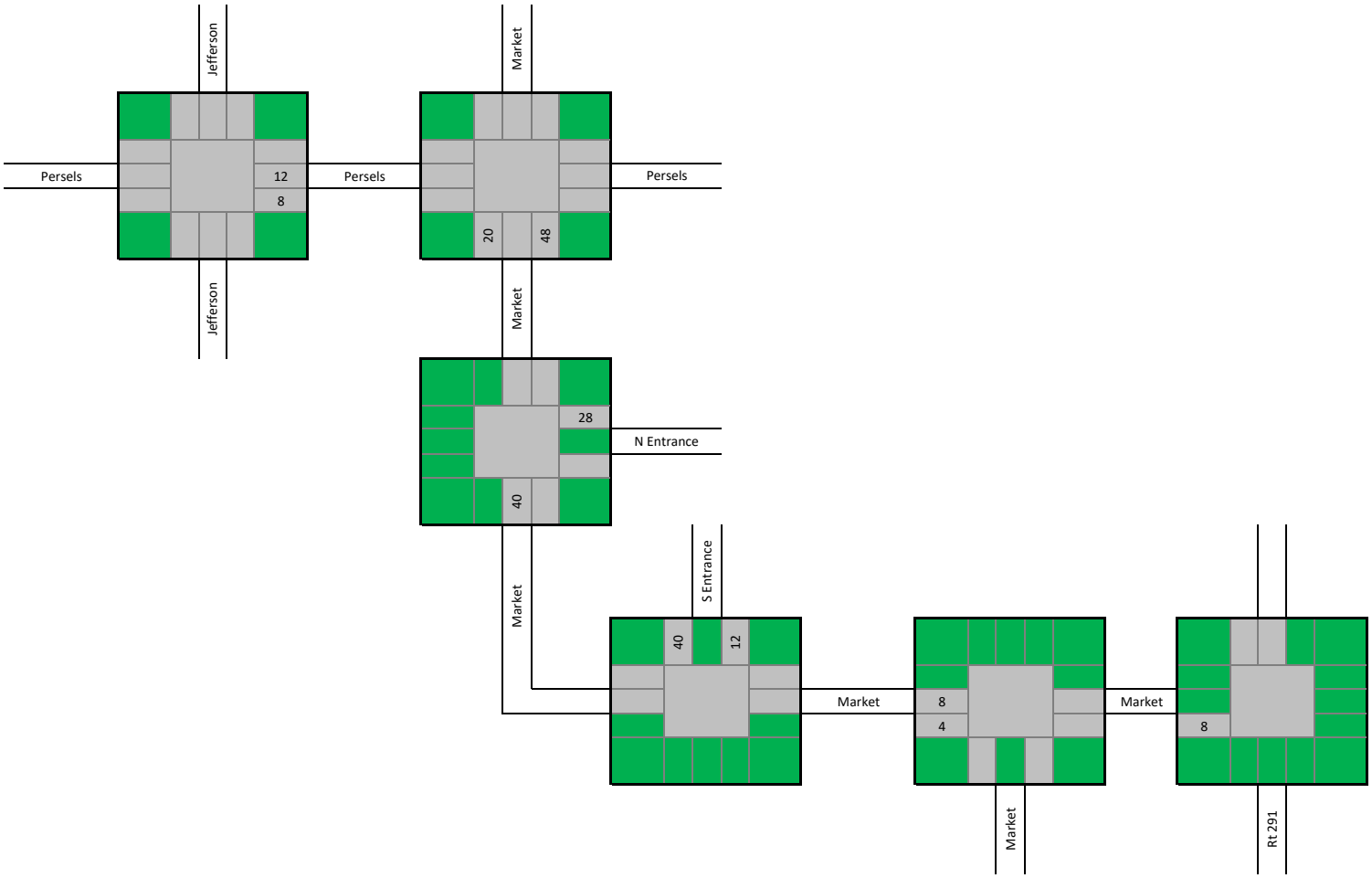


PM Trips Out

Trips
80

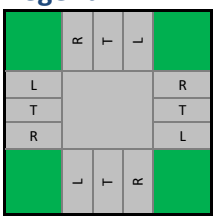
Legend

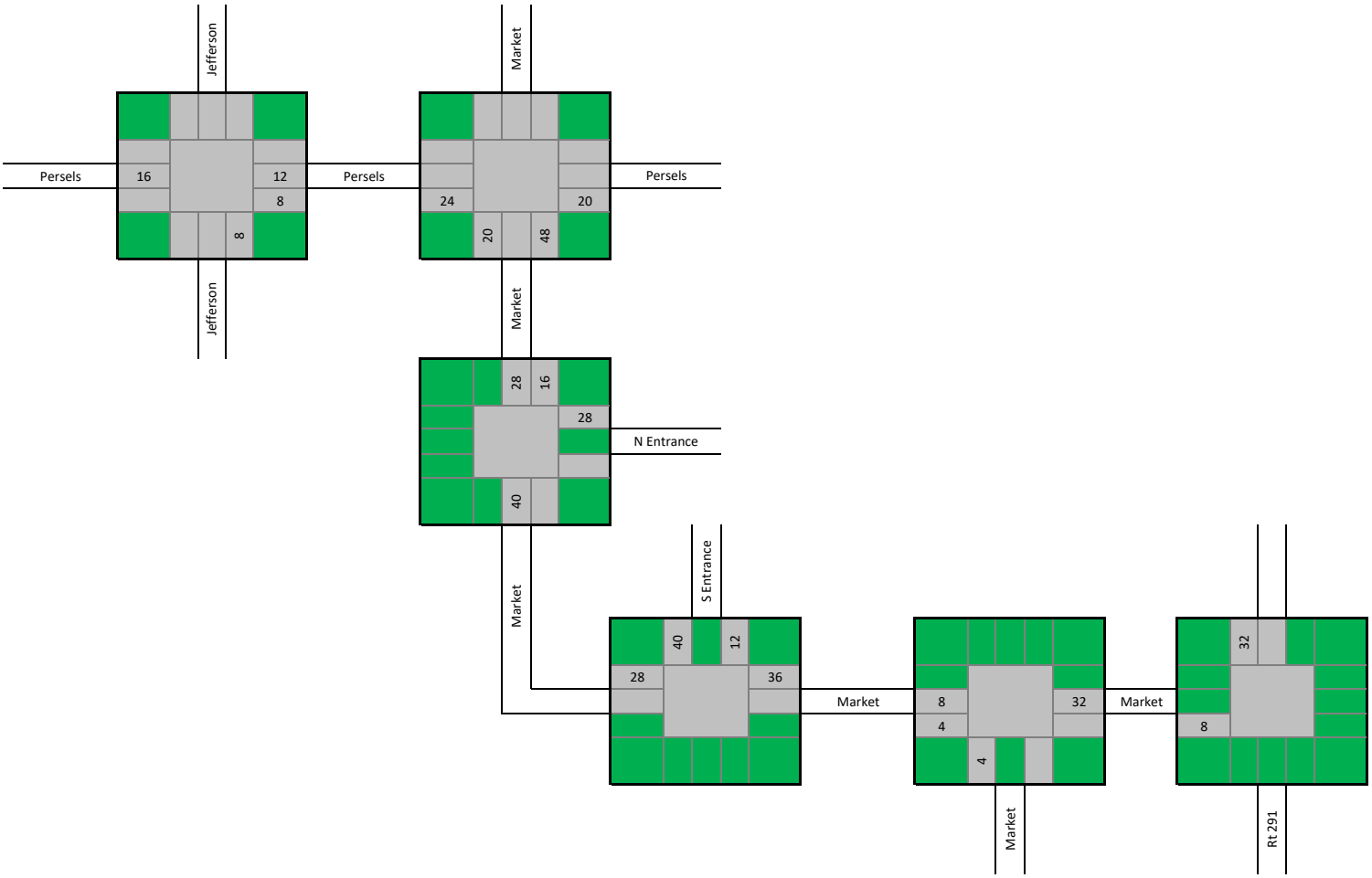




PM Total Trips

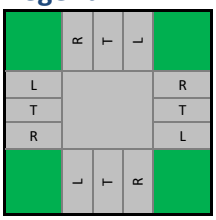
Legend

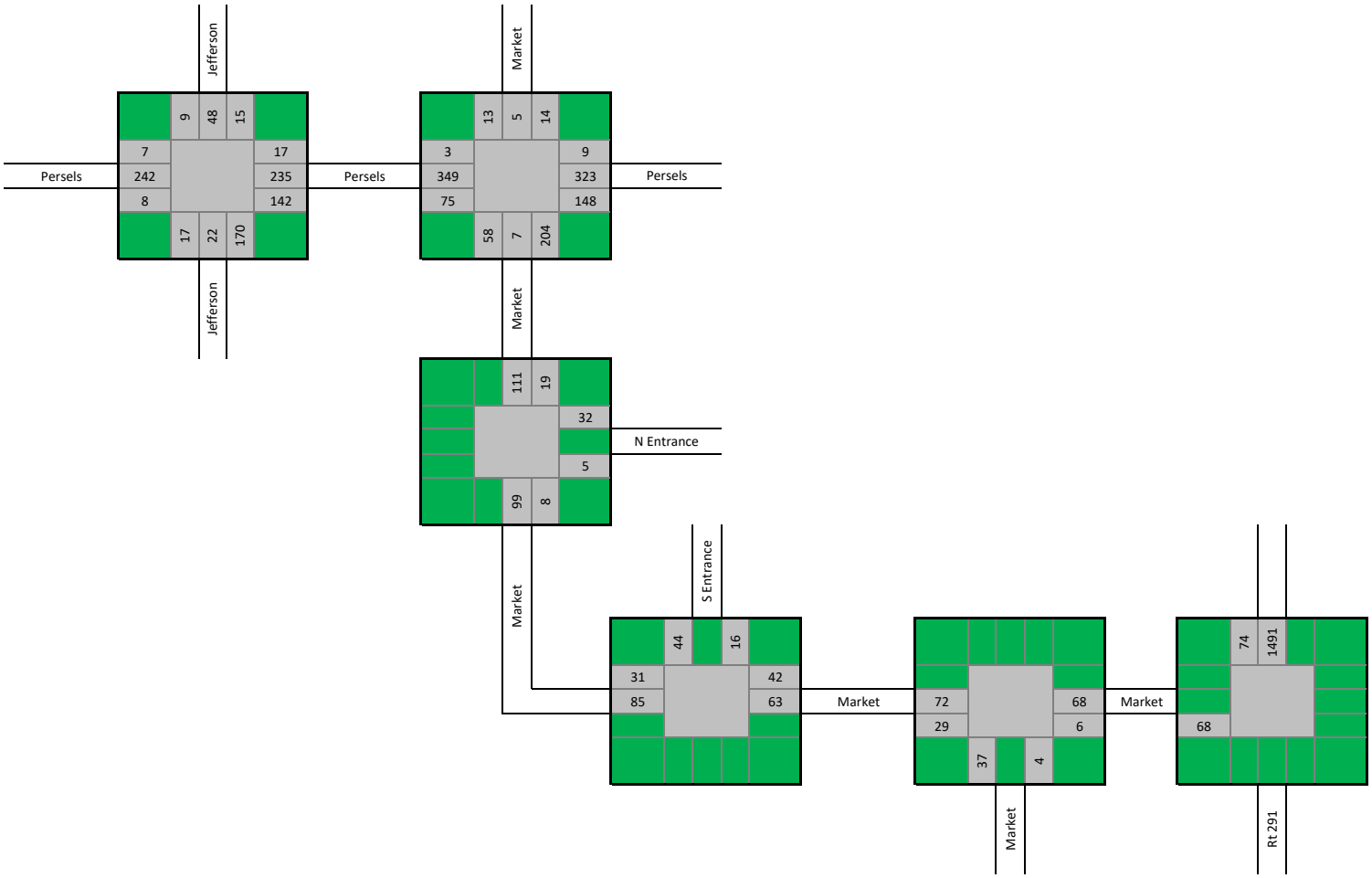




PM Existing plus Site

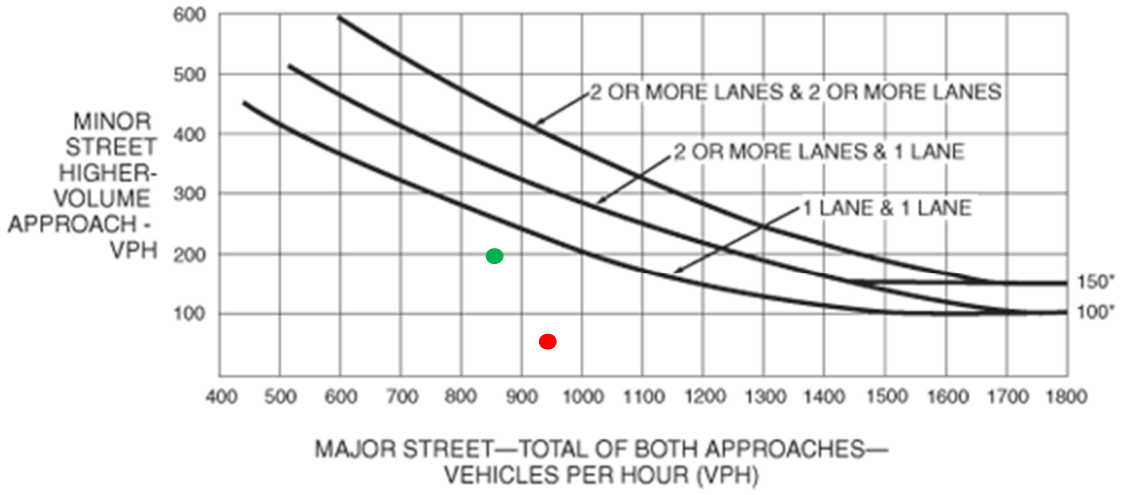
Legend





EXISTING
Market and Persels – AM & PM

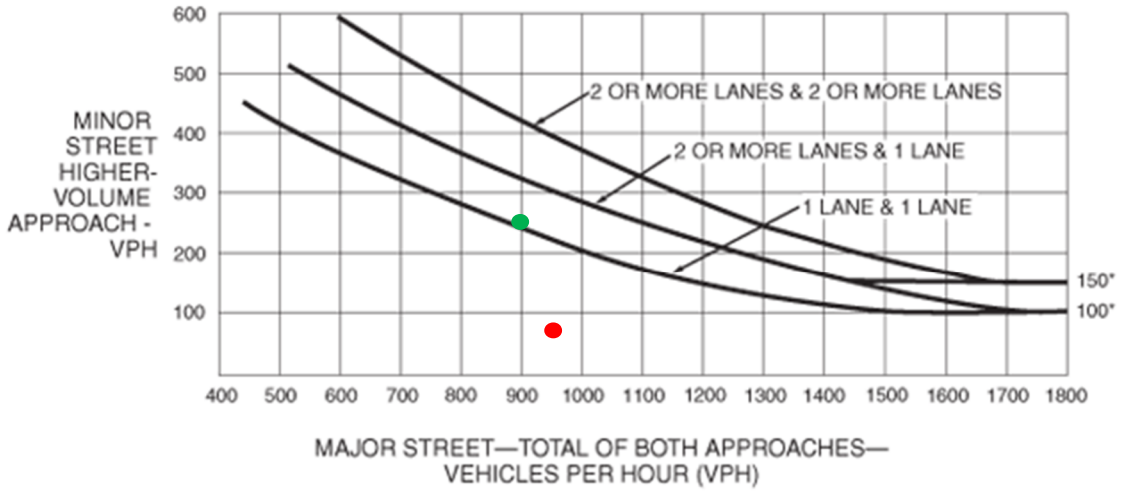
Figure 4C-3. Warrant 3, Peak Hour



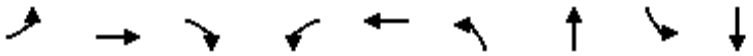
*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

EXISTING PLUS SITE
Market and Persels – AM & PM

Figure 4C-3. Warrant 3, Peak Hour

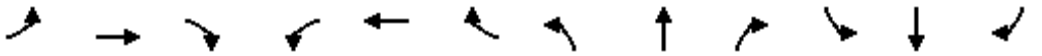


*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	15	244	58	301	217	49	509	10	282
v/c Ratio	0.05	0.71	0.13	0.68	0.30	0.10	0.60	0.03	0.37
Control Delay	16.5	44.4	0.6	26.2	19.7	13.2	16.3	12.9	20.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.5	44.4	0.6	26.2	19.7	13.2	16.3	12.9	20.2
Queue Length 50th (ft)	5	128	0	115	76	14	132	3	111
Queue Length 95th (ft)	13	156	0	179	151	20	113	9	130
Internal Link Dist (ft)		207			246		1925		147
Turn Bay Length (ft)	115		115	175		115		150	
Base Capacity (vph)	326	433	508	472	746	469	844	321	764
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.56	0.11	0.64	0.29	0.10	0.60	0.03	0.37

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	173	41	268	180	13	27	82	198	7	172	20
Future Volume (veh/h)	11	173	41	268	180	13	27	82	198	7	172	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	15	244	58	301	202	15	49	149	360	10	253	29
Peak Hour Factor	0.71	0.71	0.71	0.89	0.89	0.89	0.55	0.55	0.55	0.68	0.68	0.68
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	309	301	255	415	523	39	498	214	517	284	678	78
Arrive On Green	0.02	0.16	0.16	0.16	0.30	0.30	0.04	0.44	0.44	0.01	0.41	0.41
Sat Flow, veh/h	1781	1870	1585	1781	1720	128	1781	486	1173	1781	1648	189
Grp Volume(v), veh/h	15	244	58	301	0	217	49	0	509	10	0	282
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	0	1847	1781	0	1659	1781	0	1836
Q Serve(g_s), s	0.6	10.1	2.5	10.6	0.0	7.4	1.2	0.0	19.8	0.3	0.0	8.5
Cycle Q Clear(g_c), s	0.6	10.1	2.5	10.6	0.0	7.4	1.2	0.0	19.8	0.3	0.0	8.5
Prop In Lane	1.00		1.00	1.00		0.07	1.00		0.71	1.00		0.10
Lane Grp Cap(c), veh/h	309	301	255	415	0	562	498	0	731	284	0	756
V/C Ratio(X)	0.05	0.81	0.23	0.73	0.00	0.39	0.10	0.00	0.70	0.04	0.00	0.37
Avail Cap(c_a), veh/h	391	433	367	473	0	668	538	0	731	375	0	756
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.2	32.4	29.2	21.7	0.0	21.9	12.8	0.0	18.1	15.3	0.0	16.4
Incr Delay (d2), s/veh	0.1	7.4	0.4	4.8	0.0	0.4	0.1	0.0	5.4	0.0	0.0	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	5.0	1.0	4.7	0.0	3.1	0.5	0.0	7.9	0.1	0.0	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.3	39.8	29.7	26.5	0.0	22.4	12.9	0.0	23.5	15.3	0.0	17.8
LnGrp LOS	C	D	C	C	A	C	B	A	C	B	A	B
Approach Vol, veh/h		317			518			558			292	
Approach Delay, s/veh		37.3			24.8			22.6			17.7	
Approach LOS		D			C			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.5	39.7	17.4	17.4	7.8	37.4	5.9	28.8
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.1	32.9	15.5	18.5	5.1	32.9	5.1	28.9
Max Q Clear Time (g_c+I1), s	2.3	21.8	12.6	12.1	3.2	10.5	2.6	9.4
Green Ext Time (p_c), s	0.0	2.6	0.3	0.8	0.0	1.6	0.0	1.1

Intersection Summary	
HCM 6th Ctrl Delay	25.2
HCM 6th LOS	C

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	341	36	102	445	2	15	0	54	1	1	1
Future Vol, veh/h	1	341	36	102	445	2	15	0	54	1	1	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	165	-	-	40	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	72	72	72	90	90	90	78	78	78	38	38	38
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	474	50	113	494	2	19	0	69	3	3	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	496	0	0	524	0	0	1225	1223	499	1257	1247	495
Stage 1	-	-	-	-	-	-	501	501	-	721	721	-
Stage 2	-	-	-	-	-	-	724	722	-	536	526	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1068	-	-	1043	-	-	156	179	572	148	173	575
Stage 1	-	-	-	-	-	-	552	543	-	419	432	-
Stage 2	-	-	-	-	-	-	417	431	-	529	529	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1068	-	-	1043	-	-	141	159	572	119	154	575
Mov Cap-2 Maneuver	-	-	-	-	-	-	141	159	-	119	154	-
Stage 1	-	-	-	-	-	-	551	542	-	419	385	-
Stage 2	-	-	-	-	-	-	368	384	-	465	528	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1.6	19	25.9
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	344	1068	-	-	1043	-	-	180
HCM Lane V/C Ratio	0.257	0.001	-	-	0.109	-	-	0.044
HCM Control Delay (s)	19	8.4	-	-	8.9	-	-	25.9
HCM Lane LOS	C	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	1	0	-	-	0.4	-	-	0.1

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	9	0	0	925	6
Future Vol, veh/h	0	9	0	0	925	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	250
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	56	56	92	92	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	16	0	0	1016	7

Major/Minor	Minor2			Major2	
Conflicting Flow All	-	508		-	0
Stage 1	-	-		-	-
Stage 2	-	-		-	-
Critical Hdwy	-	6.94		-	-
Critical Hdwy Stg 1	-	-		-	-
Critical Hdwy Stg 2	-	-		-	-
Follow-up Hdwy	-	3.32		-	-
Pot Cap-1 Maneuver	0	510		-	-
Stage 1	0	-		-	-
Stage 2	0	-		-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	-	510		-	-
Mov Cap-2 Maneuver	-	-		-	-
Stage 1	-	-		-	-
Stage 2	-	-		-	-

Approach	EB	SB
HCM Control Delay, s	12.3	0
HCM LOS	B	

Minor Lane/Major Mvmt	EBLn1	SBT	SBR
Capacity (veh/h)	510	-	-
HCM Lane V/C Ratio	0.032	-	-
HCM Control Delay (s)	12.3	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-

Intersection	
Int Delay, s/veh	1.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	6	2	42	3	1	19
Future Vol, veh/h	6	2	42	3	1	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	2	46	3	1	21

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	71	48	0	0	49	0
Stage 1	48	-	-	-	-	-
Stage 2	23	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	933	1021	-	-	1558	-
Stage 1	974	-	-	-	-	-
Stage 2	1000	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	932	1021	-	-	1558	-
Mov Cap-2 Maneuver	932	-	-	-	-	-
Stage 1	974	-	-	-	-	-
Stage 2	999	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.8	0	0.4
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	953	1558	-
HCM Lane V/C Ratio	-	-	0.009	0.001	-
HCM Control Delay (s)	-	-	8.8	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	23	42	2	5	3
Future Vol, veh/h	2	23	42	2	5	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	25	46	2	5	3

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	48	0	-	0	76	47
Stage 1	-	-	-	-	47	-
Stage 2	-	-	-	-	29	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1559	-	-	-	927	1022
Stage 1	-	-	-	-	975	-
Stage 2	-	-	-	-	994	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1559	-	-	-	926	1022
Mov Cap-2 Maneuver	-	-	-	-	926	-
Stage 1	-	-	-	-	974	-
Stage 2	-	-	-	-	994	-

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	8.8
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1559	-	-	-	960
HCM Lane V/C Ratio	0.001	-	-	-	0.009
HCM Control Delay (s)	7.3	0	-	-	8.8
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

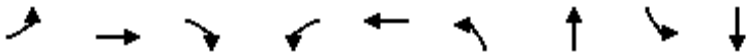
Intersection	
Int Delay, s/veh	4.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	10	18	16	10	34	1
Future Vol, veh/h	10	18	16	10	34	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	20	17	11	37	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	31	0	66	21
Stage 1	-	-	-	-	21	-
Stage 2	-	-	-	-	45	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1582	-	939	1056
Stage 1	-	-	-	-	1002	-
Stage 2	-	-	-	-	977	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1582	-	929	1056
Mov Cap-2 Maneuver	-	-	-	-	929	-
Stage 1	-	-	-	-	1002	-
Stage 2	-	-	-	-	966	-

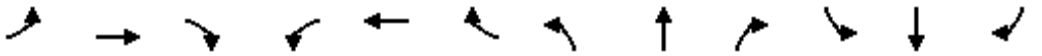
Approach	EB	WB	NB
HCM Control Delay, s	0	4.5	9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	932	-	-	1582	-
HCM Lane V/C Ratio	0.041	-	-	0.011	-
HCM Control Delay (s)	9	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	7	240	9	146	260	24	256	19	74
v/c Ratio	0.02	0.60	0.02	0.36	0.40	0.04	0.30	0.03	0.09
Control Delay	13.6	32.3	0.1	16.1	18.7	12.4	5.1	12.5	15.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.6	32.3	0.1	16.1	18.7	12.4	5.1	12.5	15.6
Queue Length 50th (ft)	1	81	0	33	61	5	6	4	13
Queue Length 95th (ft)	9	181	0	81	173	16	32	15	46
Internal Link Dist (ft)		207			246		1925		147
Turn Bay Length (ft)	115		115	175		115		150	
Base Capacity (vph)	390	792	778	486	966	647	855	557	779
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.30	0.01	0.30	0.27	0.04	0.30	0.03	0.09

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	226	8	134	223	17	17	22	162	15	48	9
Future Volume (veh/h)	7	226	8	134	223	17	17	22	162	15	48	9
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	7	240	9	146	242	18	24	31	225	19	62	12
Peak Hour Factor	0.94	0.94	0.94	0.92	0.92	0.92	0.72	0.72	0.72	0.78	0.78	0.78
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	279	324	274	333	437	32	691	84	607	514	643	125
Arrive On Green	0.01	0.17	0.17	0.09	0.25	0.25	0.03	0.43	0.43	0.02	0.42	0.42
Sat Flow, veh/h	1781	1870	1585	1781	1719	128	1781	196	1419	1781	1523	295
Grp Volume(v), veh/h	7	240	9	146	0	260	24	0	256	19	0	74
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	0	1847	1781	0	1615	1781	0	1817
Q Serve(g_s), s	0.2	7.6	0.3	3.9	0.0	7.7	0.5	0.0	6.8	0.4	0.0	1.5
Cycle Q Clear(g_c), s	0.2	7.6	0.3	3.9	0.0	7.7	0.5	0.0	6.8	0.4	0.0	1.5
Prop In Lane	1.00		1.00	1.00		0.07	1.00		0.88	1.00		0.16
Lane Grp Cap(c), veh/h	279	324	274	333	0	469	691	0	690	514	0	768
V/C Ratio(X)	0.03	0.74	0.03	0.44	0.00	0.55	0.03	0.00	0.37	0.04	0.00	0.10
Avail Cap(c_a), veh/h	447	790	670	528	0	957	827	0	690	658	0	768
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.1	24.6	21.6	17.8	0.0	20.3	9.6	0.0	12.2	10.1	0.0	10.9
Incr Delay (d2), s/veh	0.0	3.3	0.0	0.9	0.0	1.0	0.0	0.0	1.5	0.0	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	3.5	0.1	1.5	0.0	3.1	0.2	0.0	2.4	0.1	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.1	27.9	21.6	18.7	0.0	21.3	9.7	0.0	13.7	10.1	0.0	11.1
LnGrp LOS	C	C	C	B	A	C	A	A	B	B	A	B
Approach Vol, veh/h		256			406			280			93	
Approach Delay, s/veh		27.5			20.4			13.4			10.9	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.9	31.3	10.1	15.4	6.2	31.0	5.1	20.4
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	6.5	26.5	12.5	26.5	6.5	26.5	6.5	32.5
Max Q Clear Time (g_c+I1), s	2.4	8.8	5.9	9.6	2.5	3.5	2.2	9.7
Green Ext Time (p_c), s	0.0	1.4	0.2	1.2	0.0	0.3	0.0	1.4

Intersection Summary	
HCM 6th Ctrl Delay	19.4
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	349	51	128	323	9	38	7	156	14	5	13
Future Vol, veh/h	3	349	51	128	323	9	38	7	156	14	5	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	165	-	-	40	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	85	85	85	87	87	87	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	379	55	151	380	11	44	8	179	15	5	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	391	0	0	434	0	0	1110	1106	407	1194	1128	386
Stage 1	-	-	-	-	-	-	413	413	-	688	688	-
Stage 2	-	-	-	-	-	-	697	693	-	506	440	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1168	-	-	1126	-	-	187	210	644	163	204	662
Stage 1	-	-	-	-	-	-	616	594	-	436	447	-
Stage 2	-	-	-	-	-	-	431	445	-	549	578	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1168	-	-	1126	-	-	160	181	644	102	176	662
Mov Cap-2 Maneuver	-	-	-	-	-	-	160	181	-	102	176	-
Stage 1	-	-	-	-	-	-	614	592	-	435	387	-
Stage 2	-	-	-	-	-	-	360	385	-	390	576	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	2.4	27	31
HCM LOS			D	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	388	1168	-	-	1126	-	-	173
HCM Lane V/C Ratio	0.595	0.003	-	-	0.134	-	-	0.201
HCM Control Delay (s)	27	8.1	-	-	8.7	-	-	31
HCM Lane LOS	D	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	3.7	0	-	-	0.5	-	-	0.7

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	60	0	0	1491	42
Future Vol, veh/h	0	60	0	0	1491	42
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	250
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	65	65	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	92	0	0	1621	46

Major/Minor	Minor2			Major2	
Conflicting Flow All	-	811		-	0
Stage 1	-	-		-	-
Stage 2	-	-		-	-
Critical Hdwy	-	6.94		-	-
Critical Hdwy Stg 1	-	-		-	-
Critical Hdwy Stg 2	-	-		-	-
Follow-up Hdwy	-	3.32		-	-
Pot Cap-1 Maneuver	0	322		-	-
Stage 1	0	-		-	-
Stage 2	0	-		-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	-	322		-	-
Mov Cap-2 Maneuver	-	-		-	-
Stage 1	-	-		-	-
Stage 2	-	-		-	-

Approach	EB	SB
HCM Control Delay, s	20.6	0
HCM LOS	C	

Minor Lane/Major Mvmt	EBLn1	SBT	SBR
Capacity (veh/h)	322	-	-
HCM Lane V/C Ratio	0.287	-	-
HCM Control Delay (s)	20.6	-	-
HCM Lane LOS	C	-	-
HCM 95th %tile Q(veh)	1.2	-	-

Intersection	
Int Delay, s/veh	0.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	4	59	8	3	83
Future Vol, veh/h	5	4	59	8	3	83
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	4	64	9	3	90

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	165	69	0	0	73	0
Stage 1	69	-	-	-	-	-
Stage 2	96	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	826	994	-	-	1527	-
Stage 1	954	-	-	-	-	-
Stage 2	928	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	824	994	-	-	1527	-
Mov Cap-2 Maneuver	824	-	-	-	-	-
Stage 1	954	-	-	-	-	-
Stage 2	926	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.1	0	0.3
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	892	1527	-
HCM Lane V/C Ratio	-	-	0.011	0.002	-
HCM Control Delay (s)	-	-	9.1	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	85	63	6	4	4
Future Vol, veh/h	3	85	63	6	4	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	92	68	7	4	4

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	75	0	-	0	170	72
Stage 1	-	-	-	-	72	-
Stage 2	-	-	-	-	98	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1524	-	-	-	820	990
Stage 1	-	-	-	-	951	-
Stage 2	-	-	-	-	926	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1524	-	-	-	818	990
Mov Cap-2 Maneuver	-	-	-	-	818	-
Stage 1	-	-	-	-	949	-
Stage 2	-	-	-	-	926	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	9.1
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1524	-	-	-	896
HCM Lane V/C Ratio	0.002	-	-	-	0.01
HCM Control Delay (s)	7.4	0	-	-	9.1
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

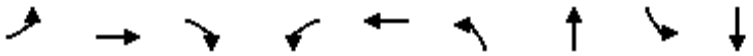
Intersection	
Int Delay, s/veh	2.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	64	25	6	36	33	4
Future Vol, veh/h	64	25	6	36	33	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	70	27	7	39	36	4

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	97	0	137	84
Stage 1	-	-	-	-	84	-
Stage 2	-	-	-	-	53	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1496	-	856	975
Stage 1	-	-	-	-	939	-
Stage 2	-	-	-	-	970	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1496	-	852	975
Mov Cap-2 Maneuver	-	-	-	-	852	-
Stage 1	-	-	-	-	939	-
Stage 2	-	-	-	-	965	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.1	9.4
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	864	-	-	1496	-
HCM Lane V/C Ratio	0.047	-	-	0.004	-
HCM Control Delay (s)	9.4	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

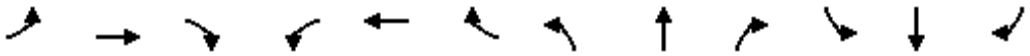


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	15	249	58	304	221	49	514	10	282
v/c Ratio	0.05	0.72	0.13	0.69	0.31	0.10	0.61	0.03	0.37
Control Delay	16.5	45.0	0.6	26.6	19.7	13.3	16.5	13.0	20.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.5	45.0	0.6	26.6	19.7	13.3	16.5	13.0	20.2
Queue Length 50th (ft)	5	131	0	116	78	14	135	3	111
Queue Length 95th (ft)	13	158	0	181	155	20	114	9	130
Internal Link Dist (ft)		207			246		1925		147
Turn Bay Length (ft)	115		115	175		115		150	
Base Capacity (vph)	326	432	507	470	747	467	842	315	762
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.58	0.11	0.65	0.30	0.10	0.61	0.03	0.37

Intersection Summary

HCM 6th Signalized Intersection Summary
5: SW Jefferson St & W Persels Rd

Existing plus Site AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	177	41	271	183	13	27	82	201	7	172	20
Future Volume (veh/h)	11	177	41	271	183	13	27	82	201	7	172	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	15	249	58	304	206	15	49	149	365	10	253	29
Peak Hour Factor	0.71	0.71	0.71	0.89	0.89	0.89	0.55	0.55	0.55	0.68	0.68	0.68
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	311	306	259	415	530	39	495	211	516	277	675	77
Arrive On Green	0.02	0.16	0.16	0.16	0.31	0.31	0.04	0.44	0.44	0.01	0.41	0.41
Sat Flow, veh/h	1781	1870	1585	1781	1722	125	1781	481	1178	1781	1648	189
Grp Volume(v), veh/h	15	249	58	304	0	221	49	0	514	10	0	282
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	0	1848	1781	0	1658	1781	0	1836
Q Serve(g_s), s	0.6	10.3	2.6	10.7	0.0	7.6	1.2	0.0	20.3	0.3	0.0	8.6
Cycle Q Clear(g_c), s	0.6	10.3	2.6	10.7	0.0	7.6	1.2	0.0	20.3	0.3	0.0	8.6
Prop In Lane	1.00		1.00	1.00		0.07	1.00		0.71	1.00		0.10
Lane Grp Cap(c), veh/h	311	306	259	415	0	568	495	0	727	277	0	752
V/C Ratio(X)	0.05	0.81	0.22	0.73	0.00	0.39	0.10	0.00	0.71	0.04	0.00	0.38
Avail Cap(c_a), veh/h	392	431	365	471	0	665	534	0	727	368	0	752
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.2	32.4	29.2	21.7	0.0	21.9	12.9	0.0	18.4	15.5	0.0	16.6
Incr Delay (d2), s/veh	0.1	8.0	0.4	5.1	0.0	0.4	0.1	0.0	5.7	0.1	0.0	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	5.2	1.0	4.7	0.0	3.2	0.5	0.0	8.2	0.1	0.0	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.2	40.4	29.6	26.8	0.0	22.3	13.0	0.0	24.1	15.6	0.0	18.0
LnGrp LOS	C	D	C	C	A	C	B	A	C	B	A	B
Approach Vol, veh/h		322			525			563			292	
Approach Delay, s/veh		37.9			24.9			23.1			17.9	
Approach LOS		D			C			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.5	39.7	17.5	17.6	7.8	37.4	5.9	29.2
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.1	32.9	15.5	18.5	5.1	32.9	5.1	28.9
Max Q Clear Time (g_c+I1), s	2.3	22.3	12.7	12.3	3.2	10.6	2.6	9.6
Green Ext Time (p_c), s	0.0	2.5	0.3	0.8	0.0	1.6	0.0	1.1

Intersection Summary	
HCM 6th Ctrl Delay	25.6
HCM 6th LOS	C

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	341	43	110	445	2	20	0	71	1	1	1
Future Vol, veh/h	1	341	43	110	445	2	20	0	71	1	1	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	165	-	-	40	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	72	72	72	90	90	90	78	78	78	38	38	38
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	474	60	122	494	2	26	0	91	3	3	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	496	0	0	534	0	0	1248	1246	504	1291	1275	495
Stage 1	-	-	-	-	-	-	506	506	-	739	739	-
Stage 2	-	-	-	-	-	-	742	740	-	552	536	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1068	-	-	1034	-	-	150	174	568	140	167	575
Stage 1	-	-	-	-	-	-	549	540	-	409	424	-
Stage 2	-	-	-	-	-	-	408	423	-	518	523	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1068	-	-	1034	-	-	134	153	568	107	147	575
Mov Cap-2 Maneuver	-	-	-	-	-	-	134	153	-	107	147	-
Stage 1	-	-	-	-	-	-	548	539	-	409	374	-
Stage 2	-	-	-	-	-	-	356	373	-	435	522	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1.8	21.6	27.5
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	332	1068	-	-	1034	-	-	168
HCM Lane V/C Ratio	0.351	0.001	-	-	0.118	-	-	0.047
HCM Control Delay (s)	21.6	8.4	-	-	8.9	-	-	27.5
HCM Lane LOS	C	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	1.5	0	-	-	0.4	-	-	0.1

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	12	0	0	925	37
Future Vol, veh/h	0	12	0	0	925	37
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	250
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	56	56	92	92	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	21	0	0	1016	41

Major/Minor	Minor2		Major2	
Conflicting Flow All	-	508	-	0
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	6.94	-	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	3.32	-	-
Pot Cap-1 Maneuver	0	510	-	-
Stage 1	0	-	-	-
Stage 2	0	-	-	-
Platoon blocked, %			-	-
Mov Cap-1 Maneuver	-	510	-	-
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	SB
HCM Control Delay, s	12.4	0
HCM LOS	B	

Minor Lane/Major Mvmt	EBLn1	SBT	SBR
Capacity (veh/h)	510	-	-
HCM Lane V/C Ratio	0.042	-	-
HCM Control Delay (s)	12.4	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-

Intersection	
Int Delay, s/veh	1.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	6	11	55	3	7	29
Future Vol, veh/h	6	11	55	3	7	29
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	12	60	3	8	32

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	110	62	0	0	63	0
Stage 1	62	-	-	-	-	-
Stage 2	48	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	887	1003	-	-	1540	-
Stage 1	961	-	-	-	-	-
Stage 2	974	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	883	1003	-	-	1540	-
Mov Cap-2 Maneuver	883	-	-	-	-	-
Stage 1	961	-	-	-	-	-
Stage 2	969	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.8	0	1.4
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	957	1540	-
HCM Lane V/C Ratio	-	-	0.019	0.005	-
HCM Control Delay (s)	-	-	8.8	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	12	23	42	15	9	16
Future Vol, veh/h	12	23	42	15	9	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	25	46	16	10	17

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	62	0	-	0	105	54
Stage 1	-	-	-	-	54	-
Stage 2	-	-	-	-	51	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1541	-	-	-	893	1013
Stage 1	-	-	-	-	969	-
Stage 2	-	-	-	-	971	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1541	-	-	-	885	1013
Mov Cap-2 Maneuver	-	-	-	-	885	-
Stage 1	-	-	-	-	960	-
Stage 2	-	-	-	-	971	-

Approach	EB	WB	SB
HCM Control Delay, s	2.5	0	8.8
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1541	-	-	-	963
HCM Lane V/C Ratio	0.008	-	-	-	0.028
HCM Control Delay (s)	7.4	0	-	-	8.8
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

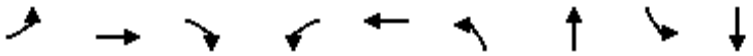
Intersection	
Int Delay, s/veh	4.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	13	19	16	21	35	1
Future Vol, veh/h	13	19	16	21	35	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	14	21	17	23	38	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	35	0	82	25
Stage 1	-	-	-	-	25	-
Stage 2	-	-	-	-	57	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1576	-	920	1051
Stage 1	-	-	-	-	998	-
Stage 2	-	-	-	-	966	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1576	-	910	1051
Mov Cap-2 Maneuver	-	-	-	-	910	-
Stage 1	-	-	-	-	998	-
Stage 2	-	-	-	-	955	-

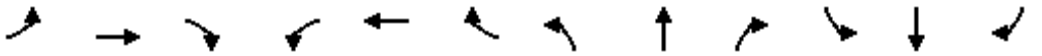
Approach	EB	WB	NB
HCM Control Delay, s	0	3.2	9.1
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	913	-	-	1576	-
HCM Lane V/C Ratio	0.043	-	-	0.011	-
HCM Control Delay (s)	9.1	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	7	257	9	154	273	24	267	19	74
v/c Ratio	0.02	0.65	0.02	0.36	0.38	0.04	0.33	0.04	0.10
Control Delay	13.3	33.8	0.1	15.8	18.1	12.9	5.2	13.0	16.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.3	33.8	0.1	15.8	18.1	12.9	5.2	13.0	16.1
Queue Length 50th (ft)	1	89	0	35	65	5	7	4	14
Queue Length 95th (ft)	9	193	0	85	182	17	32	16	47
Internal Link Dist (ft)		207			246		1925		147
Turn Bay Length (ft)	115		115	175		115		150	
Base Capacity (vph)	407	738	737	480	906	606	820	504	727
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.35	0.01	0.32	0.30	0.04	0.33	0.04	0.10

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	242	8	142	235	17	17	22	170	15	48	9
Future Volume (veh/h)	7	242	8	142	235	17	17	22	170	15	48	9
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	7	257	9	154	255	18	24	31	236	19	62	12
Peak Hour Factor	0.94	0.94	0.94	0.92	0.92	0.92	0.72	0.72	0.72	0.78	0.78	0.78
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	283	341	289	337	460	32	679	79	599	492	632	122
Arrive On Green	0.01	0.18	0.18	0.09	0.27	0.27	0.03	0.42	0.42	0.02	0.42	0.42
Sat Flow, veh/h	1781	1870	1585	1781	1727	122	1781	187	1426	1781	1523	295
Grp Volume(v), veh/h	7	257	9	154	0	273	24	0	267	19	0	74
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	0	1848	1781	0	1614	1781	0	1817
Q Serve(g_s), s	0.2	8.3	0.3	4.2	0.0	8.1	0.5	0.0	7.3	0.4	0.0	1.6
Cycle Q Clear(g_c), s	0.2	8.3	0.3	4.2	0.0	8.1	0.5	0.0	7.3	0.4	0.0	1.6
Prop In Lane	1.00		1.00	1.00		0.07	1.00		0.88	1.00		0.16
Lane Grp Cap(c), veh/h	283	341	289	337	0	492	679	0	678	492	0	755
V/C Ratio(X)	0.02	0.75	0.03	0.46	0.00	0.55	0.04	0.00	0.39	0.04	0.00	0.10
Avail Cap(c_a), veh/h	448	777	658	519	0	941	812	0	678	634	0	755
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.0	24.7	21.5	17.7	0.0	20.1	10.1	0.0	12.9	10.6	0.0	11.4
Incr Delay (d2), s/veh	0.0	3.4	0.0	1.0	0.0	1.0	0.0	0.0	1.7	0.0	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	3.8	0.1	1.6	0.0	3.3	0.2	0.0	2.6	0.1	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.0	28.2	21.5	18.7	0.0	21.1	10.1	0.0	14.6	10.6	0.0	11.6
LnGrp LOS	C	C	C	B	A	C	B	A	B	B	A	B
Approach Vol, veh/h		273			427			291			93	
Approach Delay, s/veh		27.7			20.3			14.2			11.4	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.9	31.3	10.5	16.1	6.2	31.0	5.1	21.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	6.5	26.5	12.5	26.5	6.5	26.5	6.5	32.5
Max Q Clear Time (g_c+I1), s	2.4	9.3	6.2	10.3	2.5	3.6	2.2	10.1
Green Ext Time (p_c), s	0.0	1.5	0.2	1.3	0.0	0.3	0.0	1.5

Intersection Summary	
HCM 6th Ctrl Delay	19.8
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	15.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	349	75	148	323	9	58	7	204	14	5	13
Future Vol, veh/h	3	349	75	148	323	9	58	7	204	14	5	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	165	-	-	40	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	85	85	85	87	87	87	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	379	82	174	380	11	67	8	234	15	5	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	391	0	0	461	0	0	1169	1165	420	1281	1201	386
Stage 1	-	-	-	-	-	-	426	426	-	734	734	-
Stage 2	-	-	-	-	-	-	743	739	-	547	467	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1168	-	-	1100	-	-	170	194	633	142	185	662
Stage 1	-	-	-	-	-	-	606	586	-	412	426	-
Stage 2	-	-	-	-	-	-	407	424	-	521	562	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1168	-	-	1100	-	-	142	163	633	76	155	662
Mov Cap-2 Maneuver	-	-	-	-	-	-	142	163	-	76	155	-
Stage 1	-	-	-	-	-	-	604	584	-	411	359	-
Stage 2	-	-	-	-	-	-	330	357	-	323	560	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	2.7	59.3	40.3
HCM LOS			F	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	348	1168	-	-	1100	-	-	136
HCM Lane V/C Ratio	0.888	0.003	-	-	0.158	-	-	0.256
HCM Control Delay (s)	59.3	8.1	-	-	8.9	-	-	40.3
HCM Lane LOS	F	A	-	-	A	-	-	E
HCM 95th %tile Q(veh)	8.6	0	-	-	0.6	-	-	1

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	68	0	0	1491	74
Future Vol, veh/h	0	68	0	0	1491	74
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	250
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	65	65	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	105	0	0	1621	80

Major/Minor	Minor2			Major2	
Conflicting Flow All	-	811		-	0
Stage 1	-	-		-	-
Stage 2	-	-		-	-
Critical Hdwy	-	6.94		-	-
Critical Hdwy Stg 1	-	-		-	-
Critical Hdwy Stg 2	-	-		-	-
Follow-up Hdwy	-	3.32		-	-
Pot Cap-1 Maneuver	0	322		-	-
Stage 1	0	-		-	-
Stage 2	0	-		-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	-	322		-	-
Mov Cap-2 Maneuver	-	-		-	-
Stage 1	-	-		-	-
Stage 2	-	-		-	-

Approach	EB	SB
HCM Control Delay, s	21.5	0
HCM LOS	C	

Minor Lane/Major Mvmt	EBLn1	SBT	SBR
Capacity (veh/h)	322	-	-
HCM Lane V/C Ratio	0.325	-	-
HCM Control Delay (s)	21.5	-	-
HCM Lane LOS	C	-	-
HCM 95th %tile Q(veh)	1.4	-	-

Intersection	
Int Delay, s/veh	1.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	32	99	8	19	111
Future Vol, veh/h	5	32	99	8	19	111
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	35	108	9	21	121

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	276	113	0	0	117	0
Stage 1	113	-	-	-	-	-
Stage 2	163	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	714	940	-	-	1471	-
Stage 1	912	-	-	-	-	-
Stage 2	866	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	703	940	-	-	1471	-
Mov Cap-2 Maneuver	703	-	-	-	-	-
Stage 1	912	-	-	-	-	-
Stage 2	853	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.2	0	1.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	899	1471	-
HCM Lane V/C Ratio	-	-	0.045	0.014	-
HCM Control Delay (s)	-	-	9.2	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	31	85	63	42	16	44
Future Vol, veh/h	31	85	63	42	16	44
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	34	92	68	46	17	48

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	114	0	-	0	251	91
Stage 1	-	-	-	-	91	-
Stage 2	-	-	-	-	160	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1475	-	-	-	738	967
Stage 1	-	-	-	-	933	-
Stage 2	-	-	-	-	869	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1475	-	-	-	720	967
Mov Cap-2 Maneuver	-	-	-	-	720	-
Stage 1	-	-	-	-	911	-
Stage 2	-	-	-	-	869	-

Approach	EB	WB	SB
HCM Control Delay, s	2	0	9.4
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1475	-	-	-	886
HCM Lane V/C Ratio	0.023	-	-	-	0.074
HCM Control Delay (s)	7.5	0	-	-	9.4
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2

Intersection	
Int Delay, s/veh	2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	72	29	6	68	37	4
Future Vol, veh/h	72	29	6	68	37	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	78	32	7	74	40	4

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	110	0	182	94
Stage 1	-	-	-	-	94	-
Stage 2	-	-	-	-	88	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1480	-	807	963
Stage 1	-	-	-	-	930	-
Stage 2	-	-	-	-	935	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1480	-	803	963
Mov Cap-2 Maneuver	-	-	-	-	803	-
Stage 1	-	-	-	-	930	-
Stage 2	-	-	-	-	930	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.6	9.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	816	-	-	1480	-
HCM Lane V/C Ratio	0.055	-	-	0.004	-
HCM Control Delay (s)	9.7	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection	
Int Delay, s/veh	7.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	349	75	148	323	9	58	7	204	14	5	13
Future Vol, veh/h	3	349	75	148	323	9	58	7	204	14	5	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	165	-	-	40	-	-	150	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	85	85	85	87	87	87	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	379	82	174	380	11	67	8	234	15	5	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	391	0	0	461	0	0	1169	1165	420	1281	1201	386
Stage 1	-	-	-	-	-	-	426	426	-	734	734	-
Stage 2	-	-	-	-	-	-	743	739	-	547	467	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1168	-	-	1100	-	-	170	194	633	142	185	662
Stage 1	-	-	-	-	-	-	606	586	-	412	426	-
Stage 2	-	-	-	-	-	-	407	424	-	521	562	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1168	-	-	1100	-	-	142	163	633	76	155	662
Mov Cap-2 Maneuver	-	-	-	-	-	-	142	163	-	76	155	-
Stage 1	-	-	-	-	-	-	604	584	-	411	359	-
Stage 2	-	-	-	-	-	-	330	357	-	323	560	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	2.7	23.3	40.3
HCM LOS			C	E

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	142	578	1168	-	-	1100	-	-	136
HCM Lane V/C Ratio	0.469	0.42	0.003	-	-	0.158	-	-	0.256
HCM Control Delay (s)	51	15.7	8.1	-	-	8.9	-	-	40.3
HCM Lane LOS	F	C	A	-	-	A	-	-	E
HCM 95th %tile Q(veh)	2.2	2.1	0	-	-	0.6	-	-	1