

TRAFFIC IMPACT STUDY

FOR

EAST AURORA SCHOOL DISTRICT #131 EAST AURORA HIGH SCHOOL EXPANSION

Aurora, Illinois

Prepared For:

East Aurora School District #131 McKnight School Service Center 417 Fifth Street Aurora, IL 60505

Job No. SD1602

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INTRODUCTION

The East Aurora School District (EASD) is proposing an expansion of the existing East Aurora High School which will include building expansion, rebuilding the existing football field, stormwater detention, reconfigured parking, and a new entrance on Fifth Avenue. The site is located on the south side of Fifth Avenue between the intersections of Smith Boulevard to the east and State Street to the west. A site location map for the proposed development is included as **Exhibit A**. The school will include the current 350,720 sf existing building plus the addition of another 64,840 sf to the main building and 9,150 sf of concessions and maintenance buildings for a total of approximately 415,560 sf to the main building. The proposed expansion will remove the two existing driveways off of Fifth Avenue (one entrance driveway and one exit driveway) into one combined driveway for entering and exiting traffic at Fifth Avenue and Tomcat Lane. Also included is the addition of parking along South State Street. Refer to **Exhibit B** for the proposed site plan.

This Traffic Impact Study will evaluate the anticipated traffic impacts of the expansion on the surrounding roadway system. The existing traffic data will be combined with the site generated data to determine the impacts that the new proposed expanded facility will create. This report also includes a description of existing conditions, future conditions, data analysis and conclusions and recommendations.

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EXECUTIVE SUMMARY

The Traffic Impact Study for the proposed expansion of East Aurora School District East Aurora High School on Fifth Avenue in the City of Aurora was completed in accordance with current engineering practices. The school expansion will serve up to 600 additional students upon build out. The proposed expansion will generate up to 275 additional trips with 190 entering and 85 exiting during the A.M. peak of the site and up to 225 additional trips with 72 entering and 153 exiting during the P.M. peak of the site. The detailed directional and driveway distribution is shown below in the report.

Currently the driveway at Fifth Avenue and Tomcat Lane operates between a C and D level of service for the northbound approach with the highest amount of delay occurring for the exiting left turn movement. Our analysis shows that the proposed increased traffic will significantly increase the delay to the northbound approach. Post expansion, the driveway will operate between a C and F level of service for the northbound approach. With minor pavement marking improvements, the level of service can be increased, ranging from a C to an E.



EXISTING CONDITIONS

Site Location

The parcel of property being expanded is located in the City of Aurora, Illinois and is located on the south side of Fifth Avenue between State Street and Smith Boulevard. **Exhibit A** shows the proposed site location.

Land Use

The proposed expansion will be contained within the existing parcel for the East Aurora High School. The existing land use surrounding the high school is residential. The existing land use can be seen in **Exhibit B**.

Existing Roadways

Fifth Avenue

Fifth Avenue is an east-west local road under the maintenance and jurisdiction of the City of Aurora. The current lane configuration at the intersection of Tomcat Lane has one left turn lane in the westbound direction with a painted median on the other side of the intersection, and one through lane in each direction. There is not a posted speed limit on Fifth Avenue in this area, so the speed limit is assumed to be 25 mph.

Tomcat Lane

Tomcat Lane is the driveway entrance into/exit out of the East Aurora High School parking lot. The current configuration consists of two driveways with one driveway containing one entrance lane and the second driveway containing one left turn lane and one right turn lane exiting out of the school.

Existing Traffic Volumes

The traffic volumes for the intersection of Fifth Avenue and Tomcat Lane and at the existing driveway at South State Street and Sixth Avenue are based on traffic data collected in the field by our office on May 11, 2016 and May 5, 2016, respectively. See **Appendix A** for a summary of the results. The time periods of 7:00-9:00 AM and 1:30-3:30 PM were analyzed because the high school begins at 7:55 AM and ends at 3:04 PM. The existing 2016 traffic volumes for the peak hour of our proposed site are shown in **Exhibit C**.

Existing Traffic Patterns

Vehicular Traffic

As there is currently a drop-off lane on Fifth Avenue just east of the intersection with Tomcat Lane, multiple vehicles would drop off there. In addition, some vehicles also

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dropped off students by stopping in the eastbound travel lane. Both of these instances affected the traffic traveling eastbound on Fifth Avenue.

Several vehicles that dropped off students in the drop-off lane and the travel lane would pull into a residential driveway on the north side of Fifth Avenue to turn around. Some vehicles were also observed dropping off students by stopping in the westbound travel lane. Both of these instances affected the traffic traveling westbound on Fifth Avenue.

Pedestrian Traffic

There are currently two sidewalk ramps on the north side of Fifth Avenue at the dead end of Howell Place. The west ramp is at a marked crosswalk on Fifth Avenue, but there is also a receiving ramp on the south side of Fifth Avenue for the east ramp. For this reason, pedestrians cross at both locations.

There are two more marked crosswalks along Fifth Avenue, one near the north entrance to the school and the other at the intersection with Smith Boulevard. However, students were observed crossing all along Fifth Avenue.

In **Photo 1** below, pedestrians can be seen crossing in multiple locations along Fifth Avenue. On the left side of the photo, two vehicles can be seen pulling into residential driveways to turn around. On the right side of the photo, two vehicles can be seen stopped in the eastbound through travel lane to drop-off. The vehicles aren't pulled up far enough to be within the drop-off lane limits, and vehicles traveling eastbound will need to drive partially in the westbound turn lane if they want to go around them.

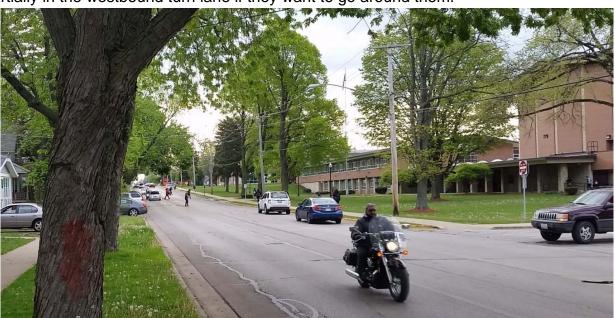


Photo 1. Observed Traffic Patterns



FUTURE CONDITIONS

Roadway Network

Access to the high school after the expansion will remain primarily the same as current conditions. The only difference is that the intersection of Fifth Avenue and Tomcat Lane will be condensed into one driveway, consisting of one entrance lane into the school parking lot and two lanes exiting the property (one left turn lane and one right turn lane). The driveway at the intersection of Sixth Avenue and South State Street will remain the same.

Refer to **Exhibit B** for the proposed site plan.

Future Traffic Volumes

It is anticipated that full build-out of the property will be completed by the fall of 2018. In order to obtain 2018 background traffic figures for this study, the growth in traffic along the adjacent roadways had to be established. The existing peak hour traffic volumes on Fifth Avenue were increased by a factor of 0.8 percent per year compounded. The growth rate of 0.8 percent per year was determined using current ADT traffic volumes and a projected ADT for 2040 performed by Chicago Metropolitan Agency for Planning. **Exhibit D** illustrates the projected year 2018 peak hour volumes for the two driveways.

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TRIP GENERATION AND DISTRIBUTION

The volume of traffic generated by a new development is typically based on the type of land use and the size of development, with consideration given to the amount of internal and pass-by traffic associated with the development. Due to expansion being at a high school, there is no need to consider pass-by traffic or internal trips as the trips are almost all destination oriented.

Trip Generation

Given the proposed use of the site Land Use (530) High School from the Institute of Transportation Engineers (ITE) report title Trip Generation, 7th edition, 2003, was the most appropriate. The ITE Trip Generation graphs are shown in **Appendix B**. **Table 1** and **Table 2** below show the entering and exiting trips for the A.M. and P.M. peak of the generator based on the increased number of students.

Land Use (I.T.E. Land Use Code)	Ctudoot	A.M. Peak Hour		
	Student Increase	Trips Generated	Trips Entering	Trips Exiting
High School (530)	600	275	190	85

Table 1: Trip Generation- A.M. Peak Hour

Land Use (I.T.E. Land Use Code)	P.M. Peak Hour				
	Student Increase	Trips Generated	Trips Entering	Trips Exiting	
High School (530)	600	225	72	153	

Table 2: Trip Generation- P.M. Peak Hour

We also established generated volumes based on projected enrollment data provided by the East Aurora School District. The district determined that there will be approximately 600 additional students attending the high school after the expansion. The following assumptions were made to estimate the trips generated:

- The percentages of students that will walk to school, that will be dropped off, and that will be driving themselves is unknown. Therefore, the existing A.M. and P.M. peak hour traffic was increased by approximately 15.8% since that is the estimated increase in student population after the expansion.
- The 15.8% increase in vehicular traffic was included for both driveways, the driveway at Fifth Avenue and Tomcat Lane and the driveway at the intersection of Sixth Avenue and South State Street.
- Since drop-offs occur along Fifth Avenue east of the intersection with Tomcat Lane,
 the 15.8% increase was included for the eastbound and westbound through traffic



for the driveway at Fifth Avenue and Tomcat. The eastbound through traffic increase was included in the "entering" trips and the westbound traffic through traffic increase was included in the "exiting" trips.

The trip generation can be seen in the **Table 3** below. As can be seen our trips generated are significantly lower than those in the ITE Trip Generation Manual.

		Trips		
		Generated	Entering	Exiting
	A.M.	202	133	69
Ī	P.M.	159	75	84

Table 3: Trips Generated

Since the trips generated calculated from the ITE Trip Generation Manual yielded higher numbers, those figures were used in this analysis.

Directional Distribution

The directional distribution of the site generated traffic was determined based on the distribution of the existing movements at the intersection of Fifth Avenue and Tomcat Lane. Different directional distribution percentages were used for the A.M. and P.M. peak periods. The following tables (**Tables 4 through 7**) list the directional distribution utilized for this analysis. As stated previously in this report, the eastbound and westbound through movements were included in the directional distribution due to the drop-offs that occur on Fifth Avenue.

	Existing	
	A.M. Peak	Directional
Movement	Traffic	Distribution
Eastbound Through	287	52.8%
Eastbound Right Turn	128	23.5%
Westbound Left Turn	129	23.7%

Table 4: Directional Distribution - A.M. Peak Entering Traffic

Movement	Existing A.M. Peak Traffic	Directional Distribution
Westbound Through	185	58.4%
Northbound Left Turn	92	29.0%
Northbound Right Turn	40	12.6%

Table 5: Directional Distribution – A.M. Peak Exiting Traffic



Movement	Existing P.M. Peak Traffic	Directional Distribution
Eastbound Through	246	63.9%
Eastbound Right Turn	58	15.1%
Westbound Left Turn	81	21.0%

Table 6: Directional Distribution - P.M. Peak Entering Traffic

Movement	Existing P.M. Peak Traffic	Directional Distribution
Westbound Through	226	64.6%
Northbound Left Turn	67	19.1%
Northbound Right Turn	57	16.3%

Table 7: Directional Distribution – P.M. Peak Exiting Traffic

For the purpose of this analysis, it was assumed that 50-75% of the site generated traffic would travel through Driveway 1 (Fifth Avenue and Tomcat Lane). The cars entering and exiting would follow the directional distribution as stated above. **Exhibit E** and **Exhibit F** show the traffic generated by the site in the A.M. and P.M. peak assuming the trip generation is split equally between the two driveways. **Exhibit H** and **Exhibit I** show the traffic generated by the site assuming 75% of the traffic travels through Driveway 1 and 25% travels through Driveway 2. Since the trip generation values only account for the increase in vehicular traffic, the pedestrian traffic was increased by 15.8% for all movements at Driveway 1.

In order to determine the total traffic for 2018, the background traffic and the site generated traffic are combined using the directional distribution, entrance distribution, and the exit distribution of the site generated traffic. This results in the total projected 2018 peak hour traffic volumes as illustrated in **Exhibit G** for a 50%/50% traffic split and **Exhibit J** for a 75%/25% traffic split.

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EVALUATION

The existing Levels of Service for westbound and northbound approaches were evaluated for the intersection of Fifth Avenue and Tomcat Lane. The results are shown below in **Table 8** for the A.M. and P.M. peak hours.

The program used to evaluate the LOS for the intersection, Highway Capacity Software, makes the following assumptions:

- There will be no delay associated with the through movements on the major road road for a two-way stop controlled intersection. Due to this, the program does not give a LOS for the through movements or for the intersection as a whole. The westbound delay and LOS shown below is due to the left turn movement only.
- Pedestrian traffic will yield to the major road vehicular movements and wait until a gap exists to cross the road. Pedestrian traffic crossing the minor street approaches will take precedence and further delay those vehicular movements.
- The pedestrian flow input into the program is not the total amount of pedestrians crossing but the number of crossings instead. Therefore, a 25% reduction in pedestrian volume was used to account for some students crossing the intersection concurrently.

	A.M. Peak		P.M. Po	eak
Approach	Delay	LOS	Delay	LOS
Westbound	3.8	Α	2.4	Α
Northbound	50.0	Е	23.1	С

Table 8: Existing LOS and Approach Delay

The future LOS for the westbound and northbound approaches were then evaluated for the intersection for the year 2018, when the school expansion is expected to be complete. An evaluation was performed for 50% and 75% of the trip generation traffic being applied to Driveway 1. The results are shown below in **Table 9**.

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	A.M. Peak		P.M. Po	eak
Approach	Delay	LOS	Delay	LOS
Westbound - 50% Traffic	4.2	Α	2.3	Α
Northbound - 50% Traffic	134.9	F	32.5	D
Westbound - 75% Traffic	4.3	Α	2.2	Α
Northbound - 75% Traffic	198.4	F	38.6	E

Table 9: Future LOS and Approach Delay

The LOS for northbound approach increased significantly, especially in the A.M. peak period. One way to help mitigate that approach delay is to do some updates to the pavement markings on Fifth Avenue. Since the future driveway layout for the intersection at Tomcat Lane is further east than the current entrance driveway, the painted median to the east will need to be extended. If the painted median is instead updated to a two-way left turn lane, an assumption can be made that the TWLTL can store two vehicles. This will allow vehicles turning left onto Fifth Avenue from Tomcat Lane to begin their turning movement when there is a gap in eastbound traffic, wait in the TWLTL temporarily, and complete their turning movement when there is a gap in westbound traffic. The northbound left turning movement had a worse delay than the northbound right turning movement, so that restriping will make a huge impact on the approach LOS. The results of that analysis are shown below in **Table 10**.

	A.M. Peak		P.M. Po	eak
Approach	Delay	LOS	Delay	LOS
Westbound - 50% Traffic	4.2	Α	2.3	А
Northbound - 50% Traffic	37.8	E	18.6	С
Westbound - 75% Traffic	4.3	Α	2.2	Α
Northbound - 75% Traffic	52.2	F	19.7	С

Table 10: Future LOS and Approach Delay with Median Storage

Please refer to **Appendix C** to view the HCS Level of Service Summary Data.

Note: Average delay in seconds/vehicle.



CONCLUSIONS AND RECOMMENDATIONS

The purpose of this Traffic Impact Study is to determine the effects of the proposed EASD East Aurora High School expansion, along with the growth in background traffic on the existing intersection at Fifth Avenue and Tomcat Lane. The analyses included in the Traffic Impact Study are based on the design year of 2018, which is the estimated year the school expansion is to be complete.

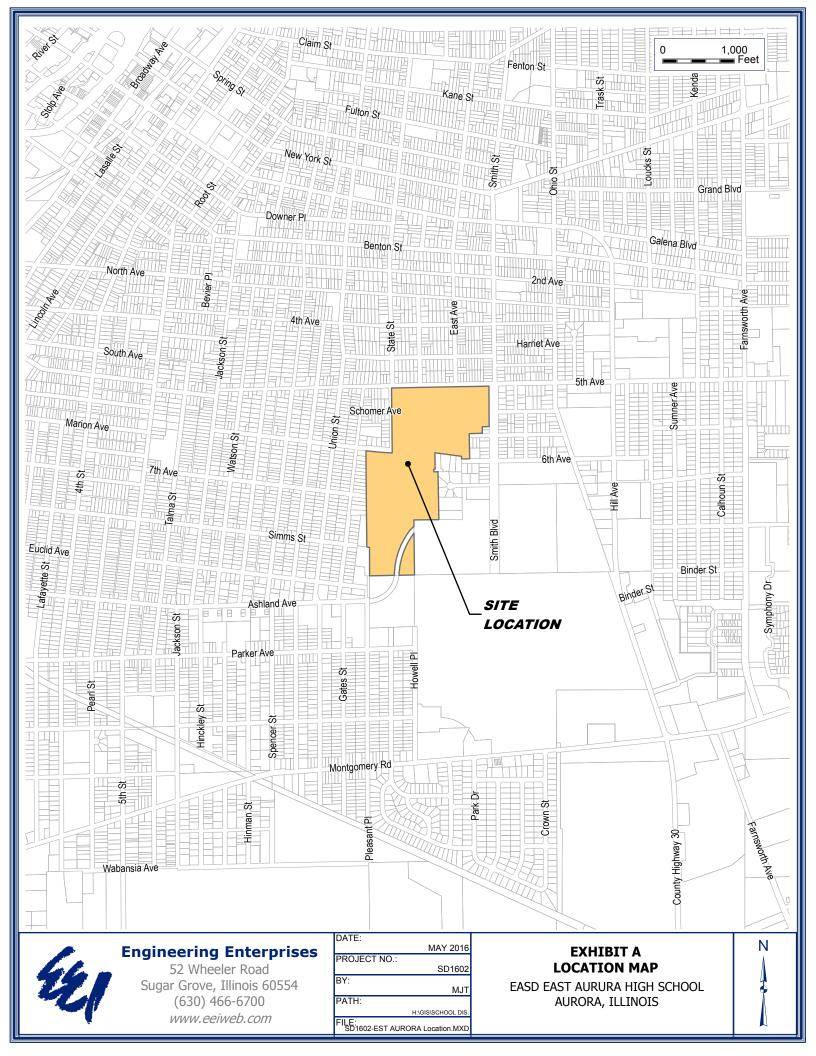
The results of this traffic study for the East Aurora School District in Aurora, Illinois revealed that the traffic on Fifth Avenue experiences minimal impact due to the proposed school expansion. As shown in the evaluation section, the westbound LOS grade remains the same with at most a half of a second variation in the approach delay. Also shown in the evaluation section is the LOS for the northbound approach, and it can be seen that the egress to the site functions at an inadequate level.

Based upon the results of this Traffic Impact Study, it is our opinion that the proposed EASD East Aurora High School expansion does not require any additional work to the existing roadway system. Our analysis shows that the projected traffic volumes from the proposed school expansion will not necessitate the addition of any through or turn lanes on Fifth Avenue.

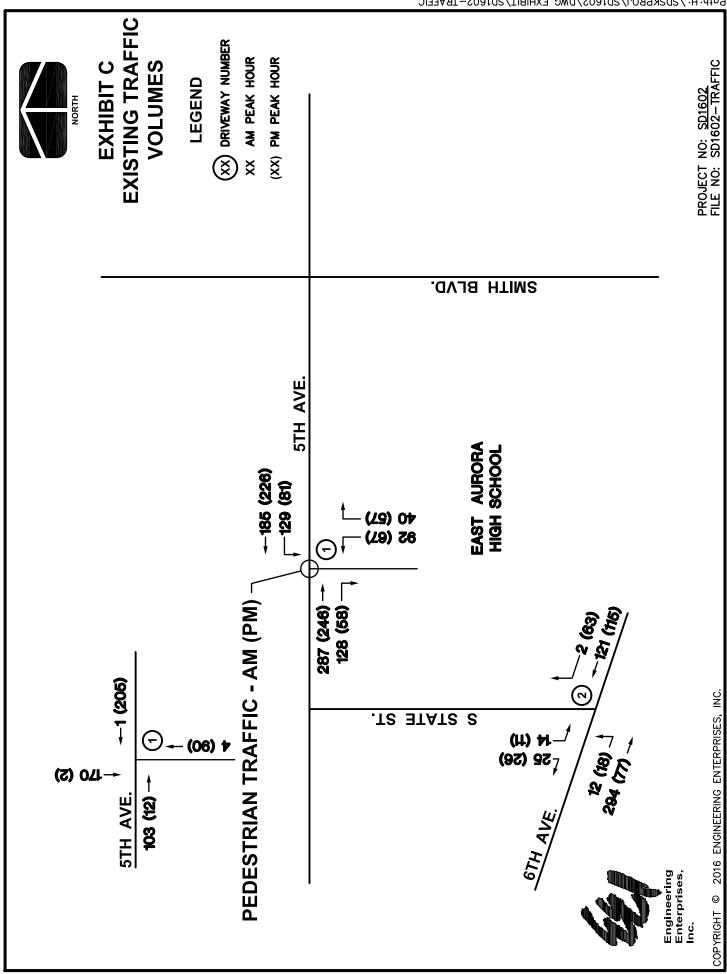
Since left turning traffic out of the site has the highest amount of delay, countermeasures should be implemented to alleviate the problem. We recommend, at a minimum, that the pedestrian crosswalk be marked on the east side of the driveway on Fifth Avenue. This will help alleviate pedestrian impacts on the northbound left turning movement. In addition, we recommend restriping the median to the west of the driveway to become a TWLTL to allow for left turning movement vehicle storage as explained in the Evaluation section of this report. Another option to consider, instead of the restriping, is to hire someone to direct traffic at the driveway before and after school to help alleviate any significant delays.

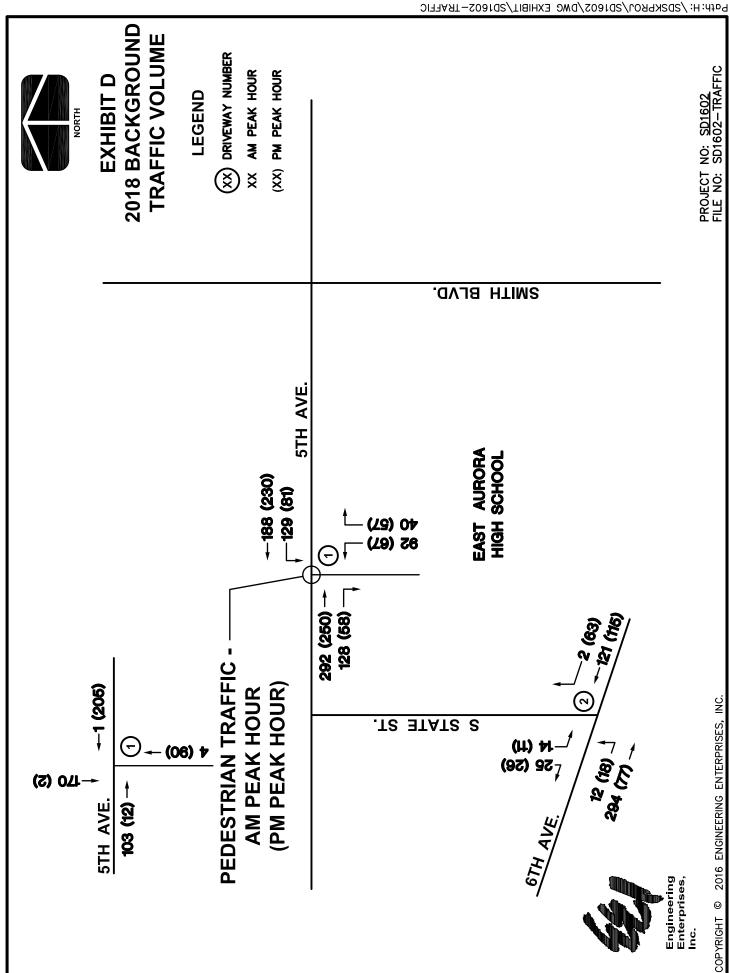


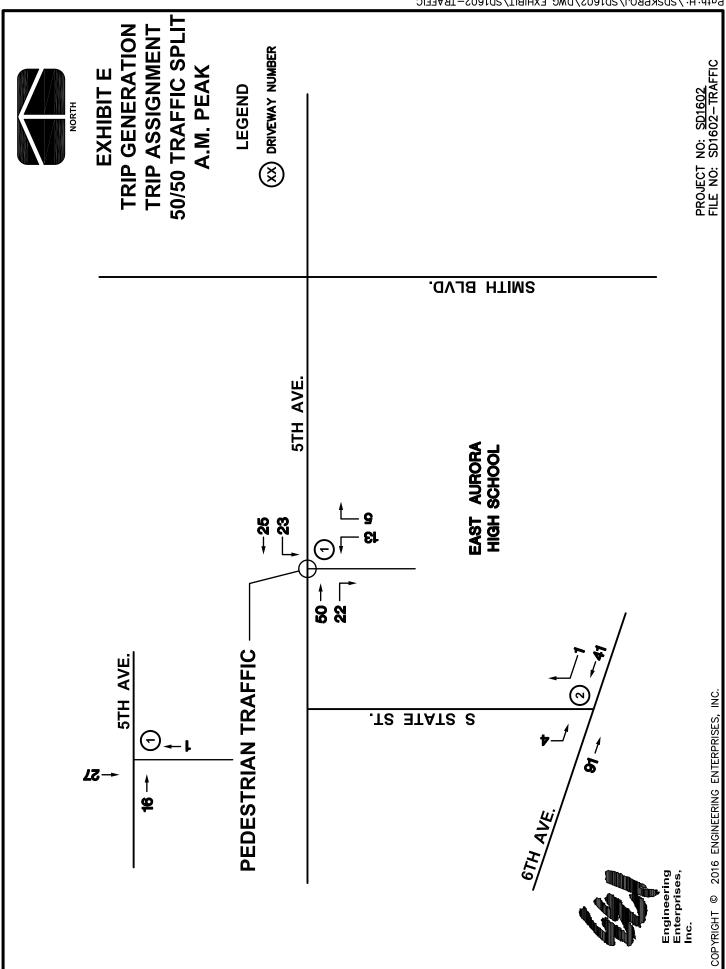
Exhibits

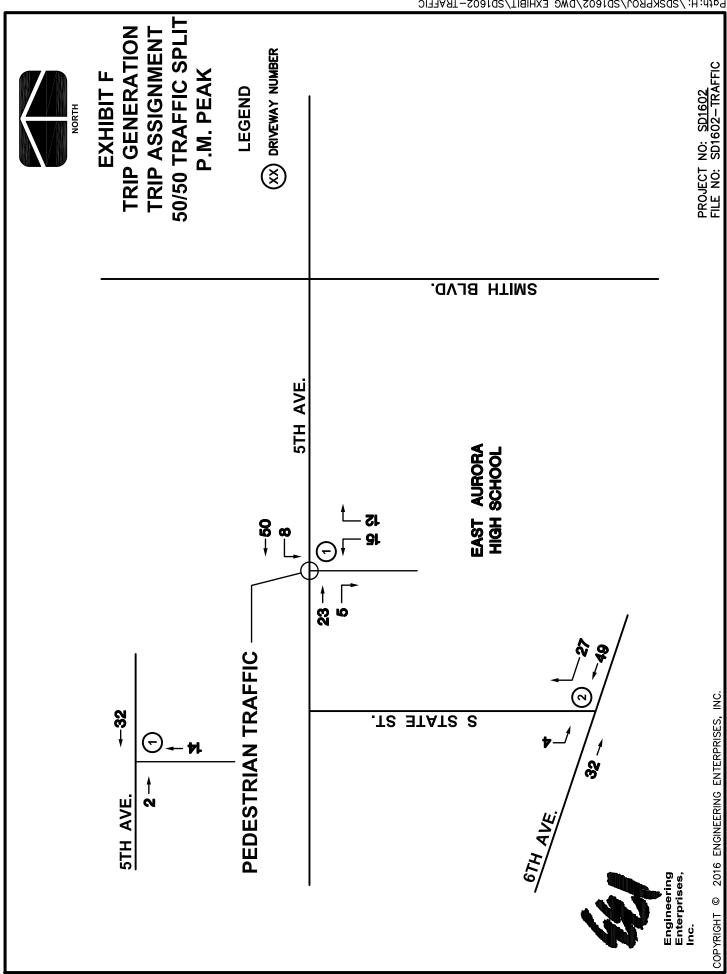


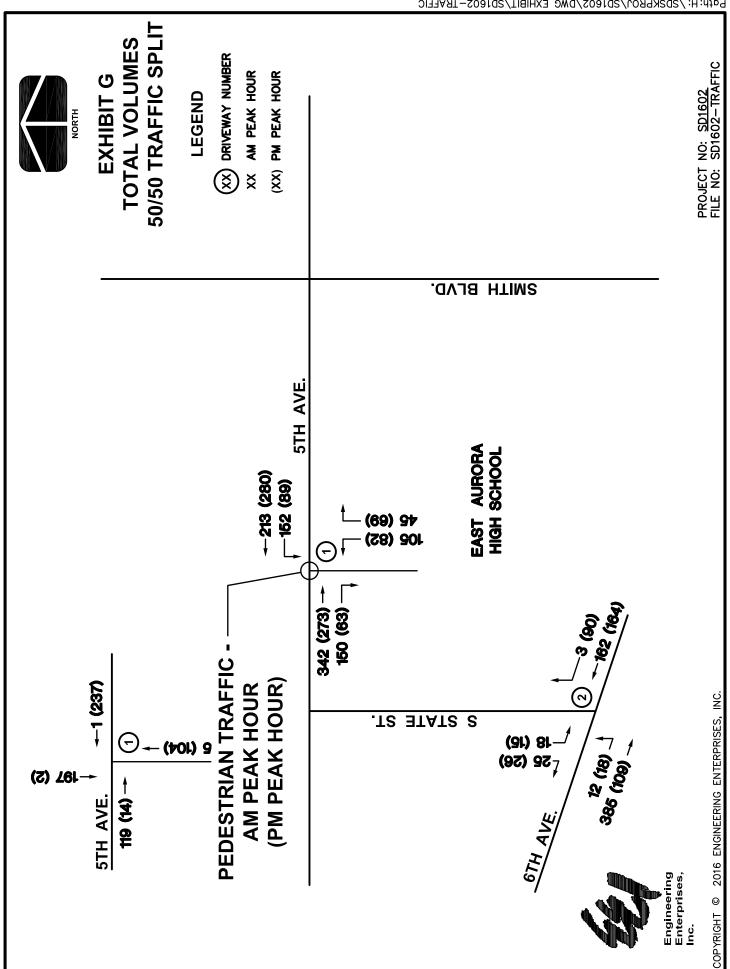
				D1602-TRAFFIC	DSKPROJ/SD1602/DWG EXHIBIT/SI	Path: H: /S
NORTH	EXHIBIT B SITE PLAN	LEGEND (XX) DRIVEWAY NUMBER		RESIDENTAIL		PROJECT NO: <u>SD1602</u> FILE NO: SD1602-TRAFFIC
				ІТН ВСУD.	WS	
		RESIDENTAIL	5ТН АVЕ.	EAST AURORA HIGH SCHOOL		
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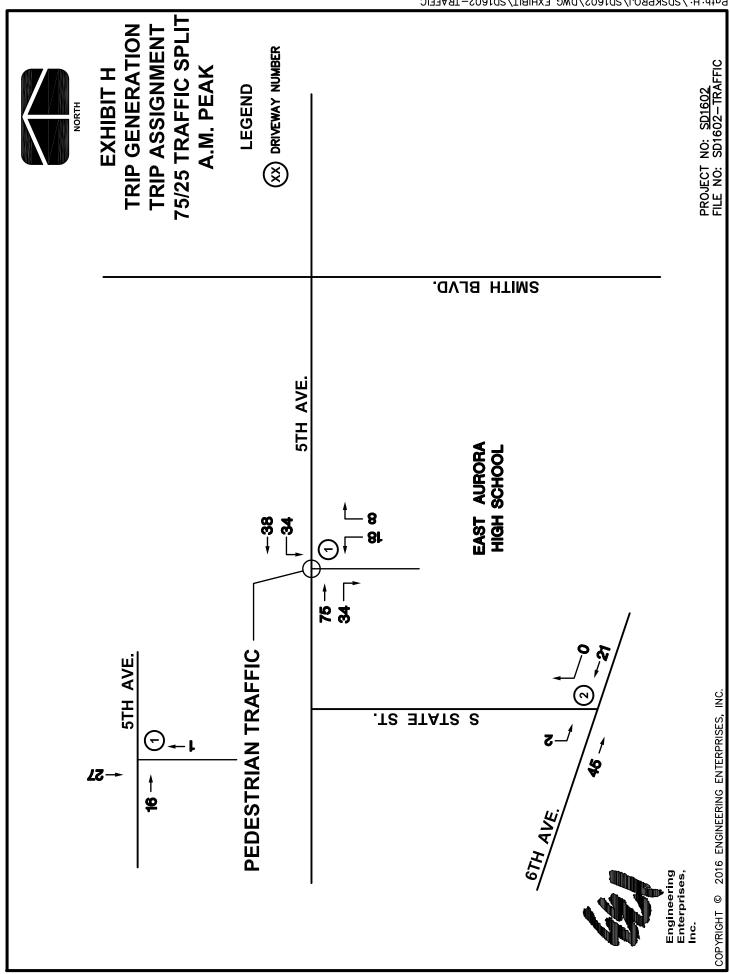


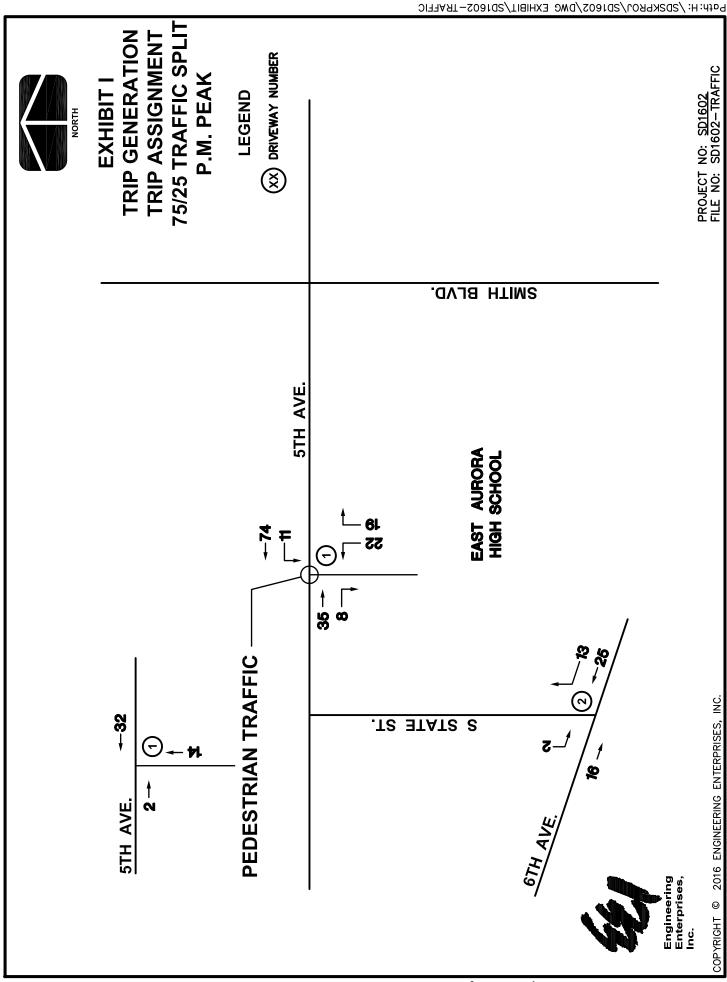


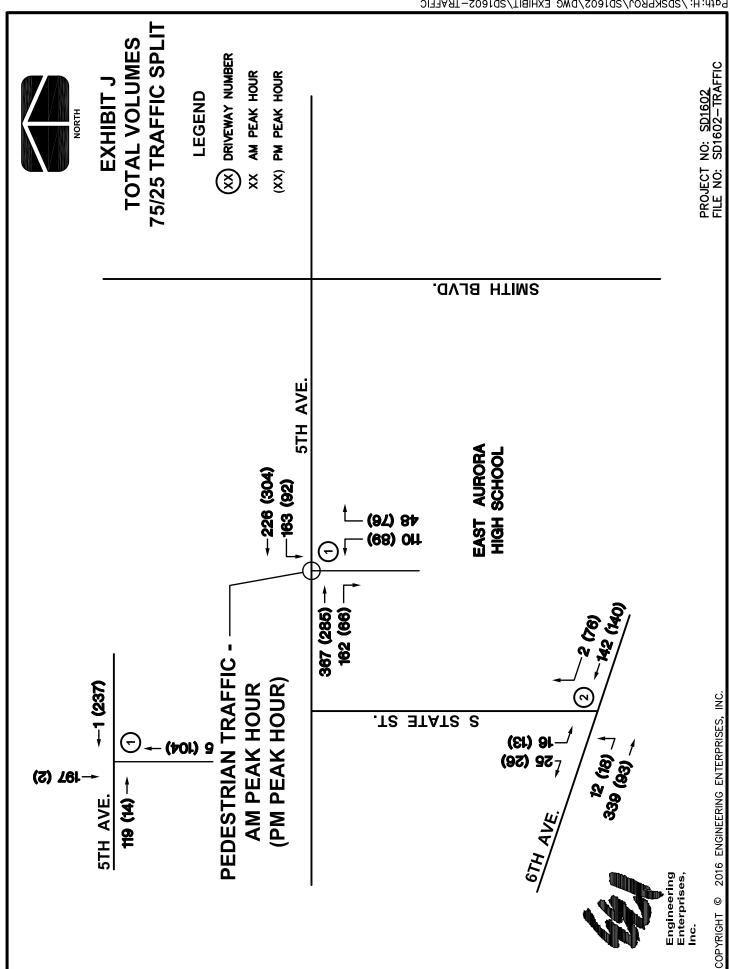














Appendix A

Traffic Count Summary

Left

Total

Eastbound

5th Avenue

Thru

Right

Turning Movement Peak Hour Details

Left

Right

Northbound

Tomcat Lane

Thru

Left

Westbound

5th Avenue

Thru

Right

Left

Southbound

Tomcat Lane

Thru

Right

Interval

6:45 AM		0	0	0	0	5	2		0	0	0	1		4	0	12
7:00 AM		0	0	0	0	20	37		9	0	7	7		60	0	140
7:15 AM		0	0	0	0	43	43	1	0	0	15	37		78	0	226
7:30 AM		0	0	0	0	50	30		8	0	43	46	, (81	0	258
7:45 AM		0	0	0	0	72	19	1	3	0	27	38	. (68	0	237
8:00 AM		0	0	0	0	51	6		6	0	8	5		61	0	137
8:15 AM		0	0	0	0	58	4		6	0	1	2	! -	77	0	148
8:30 AM		0	0	0	0	43	8		4	0	3	3		77	0	138
8:45 AM		0	0	0	0	26	14	1	0	0	8	2	! 4	48	0	108
9:00 AM		0	0	0	0	0	0		0	0	0	C)	0	0	0
Totals		0	0	0	0	368	163	6	6	0	112	141	5!	54	0	1404
Entering		0				531			178				695			
Exiting		304	1			480			0				620			
	Mort	h	Foot		Court	· la	Most		Total							
Pedestrians	<u>Nortl</u> 173		<u>East</u> 3		Sout 5	<u>.m</u>	<u>West</u> 120		<u>Total</u> 301							
reuestrians	1/3		3		5		120		301							
Vehicle Totals																
Car		0	0	0	0	362 98.4%	162 99.4%	6 97.09		0	109 97.3%	137 97.2%		33 %	0	1367 97.4%
SU		0	0	0	0	6	1		2 2	0	3	4		21	0	37
			0	0	Ŭ	1.6%	0.6%	3.09	6	0	2.7%	2.8%	3.8	%	Ü	2.6%
						Peak H	lour: 7:0	OO AM •	8:00 A	М						
		Southbo	ound		l v	/estbound	d	ĺ	Northbo	und			Eastbou	und	1	
	-	Tomcat			5t	h Avenu	е	т	omcat l	Lan	е	5	th Ave	nue		
	Right	Thru	Left					Right	Thru	L	eft	Right	Thru	Left		Total
Totals	0	0	0		0	185	129	40	0	9	2	128	287	0	ć	861
Factor	-	-	-		- (0.64	0.75	0.77	-	0	.53	0.70	0.89	-	(0.83
Entering		0				314			132				415			
Factor						0.86			0.65				0.82			
Exiting		257	,			277			0				327			
Factor		0.80)			0.70							0.92			
								•			'					
B. L. L. C.	<u>Nortl</u>		<u>East</u>		Sout	<u>th</u>	West		<u>Total</u>							
Pedestrians	170	1	1		4		103		278							
Peak Vehicles	î.				i			i .			1	1				
Car		0	0	0	0	183 98.9%	128 99.2%	97.59		0	91 98.9%	125 97.7%		77 %	0	843 97.9%
SU						2	1		1		1	3		10		18
30		0	0	0	0	1.1%	0.8%	2.59		0	1.1%	2.3%			0	2.1%

North	Tomcat Lane	Total o o o o	
5th Avenue		0 170 0	5th Avenue
Factor 277	0	Peak Start 0 7:00 AM	0 Total 314
Total 0 1	103	Volume 861 1	Factor 0.86
Factor 0.82 128	0	Factor 0.83 0	327 Factor 0.92
		0 4 0	
	Tomcat Lane	257	

Eastbound

Turning Movement Peak Hour Details

Northbound

Westbound

Southbound

		utribouriu			Stbourk			וטו נוווטטע			Eastbouri		
	Ton	ncat Lane		5th	Avenu	ie	To	mcat La	ane	5	th Aven	ue	
Interval	Right	Thru	Left	Right	Thru	Left	Right	Thru	ı Left	Right	Thru	Left	Total
1:15 PM	0	0	0	0	0	0	0	(0	0	0	0	0
1:30 PM	0	0	0	0	54	6	9	C) 6	5	54	0	134
1:45 PM	0	0	0	0	63	8	4	() 11	6	52	0	144
2:00 PM	0	0	0	0	65	13	17	C) 4	2	56	0	157
2:15 PM	0	0	0	0	58	6	10	C) 11	4	69	0	158
2:30 PM	0	0	0	0	69	9	5	C) 3	8	83	0	177
2:45 PM	0	0	0	0	69	19	7	C) 3	14	64	0	176
3:00 PM	0	0	0	0	42	23	12	C	30	14	51	0	172
3:15 PM	0	0	0	0	46	30	33	C	31	22	48	0	210
3:30 PM	0	0	0	0	8	2	0	C) 2	1	5	0	18
Totals	0	0	0	0	474	116	97	(101	76	482	0	1346
Entering		0			590			198			558		
Exiting		192			575			0			579		
													-
	<u>North</u>	<u>East</u>		South	1	West		<u>Total</u>					
Pedestrians	2	214		95		12		323					
/ehicle Totals													
	l _	_	_	Ī _	463	112	90	_	99	71	451	_	1286
Car	0	0	0	0	97.7%	96.6%	92.8%		98.0%	93.4%			95.5%
SU	0	0	0	0	11	4	7	(2	5	31	0	60
30	U	0	0	U	2.3%	3.4%	7.2%		2.0%	6.6%	6.4%		4.5%
					Da ala II		00 DM	2.20 DI					
					Реак п	lour: 2:	O PIVI -	3:30 PIV	ı	ı			
	Sou	uthbound		We	estbound	t	N	orthbou	nd	ı	Eastboun	d	
		ncat Lane			Avenu			mcat La			th Avenu		T . 1 . 1
	Right TI	hru Left 0		0		Left	Ü	Thru 0	Left		Thru	Left	Total
otals	0 0					81	1		67	58	246	0	735
actor		-		- 0.	.82 (0.68	0.43	-	0.54	0.66	0.74	-	0.88
ntering		0			307			124			304		
actor					0.87			0.48			0.84		
wither													
Exiting		139			293			0			303		
actor	I	0.67			0.95					I	0.86		I
	<u>North</u>	<u>East</u>		South	1	West		<u>Total</u>					
edestrians	2	205		90	-	12	•	309					
Peak Vehicles	ı			Ī			İ _			l _			I _
Car	0	0	0	0	220 97.3%	77 95.1%	53 93.0%) 66 98.5%	57 98.3%			704 95.8%
	-								90.376				
SU	0	0	0	0	6 2.7%	4 4.9%	7.0%		1.5%	1.7%			31 4.2%
	1]	2.170	7.770	7.070		1.570	1.770	J. 1 /0		4.2/0

North	Tomcat Lane	Total 0 0 0	· 1	î °				
5th Avenue		0	2	0		į	5th Aven	ue
Factor 293	0		ak Start :30 PM		0	Ŷ	0 226	Total 307
Total 0 1	12	V	olume 735		205	, <u></u>	81	Factor 0.87
Factor 0.84 58	0		O.88		0	303	\Rightarrow	Factor 0.86
		0	90	0				
	Tomcat Lane	139 Factor 0.67	To 12 Fac	57 57 stall 224 sttor 48				

Turning Movement Peak Hour Details

		Southbo	und		Westbound			Northbound				Eastbound					
	5	State St	reet		Pai	rking L	.ot						61	th Ave			
Interval	Righ			Left	Right	Thru		Rigl		hru	Left	Righ		Thru	Left	To	<u>otal</u>
6:45 AM)	0	0	0	О			0	0	0		0	0	0		0
7:00 AM		1	0	0	0	C			0	0	0		0	14	0		15
7:15 AM		1	0	3	1	8			0	0	0		0	41	1		55
7:30 AM		4	0	4	0	51			0	0	0		0	144	1		204
7:45 AM	1.		0	6	1	60			0	0	0		0	105	5		188
8:00 AM		9	0	1	0	2			0	0	0		0	4	5		21
8:15 AM	23		0	1	1	4			0	0	0		0	5	15		49
8:30 AM	•	1	0	0	0	2	. 0		0	0	0		0	7	6		16
8:45 AM	()	0	6	0	С	0		0	0	0		0	14	1		21
9:00 AM	()	0	0	0	0	0		0	0	0		0	0	0		0
Totals	50)	0	21	3	127	0		0	0	0		0	334	34	į.	569
Entering		71				130			0					368			
Exiting		0				177			37	,				355			
	North		<u>Ea</u>	ct	South		<u>West</u>		<u>Total</u>								
Pedestrians	0		0		<u>30dii</u>	<u>!</u>	0		0								
reacstrians	O		O	,	O		O		O								
Vehicle Totals	_				-											_	
Car	49 98.0%		0	21 100%	3 100%	127 100%			0	0	0		0	334 100%	34 100%	99.	568 8%
SU	2.0%		0	0	0	O	0		0	0	0		0	0	0	0.	1 2%
						Peak	Hour: 7:	15 AM	- 8:15	AM	<u>, </u>					•	
	1 .	S			l ,,,			I	N1		ĺ		_			I	
		Southbo State St				estbour king L			Northb	ouna				stbound : h Ave			
	Right	Thru	Let	ft		hru	Left	Right	Thru	Left		Right			.eft	Total	
Totals	25	0	14		_	21	0	0	0	0		0	29		2	468	
Factor	0.57	-	0.5	58	0.50 0	.50	-	-	-	-		-	0.	51 C	0.60	0.57	
Entering		39				123			0					306			
Factor		0.57				0.50								0.53			
Exiting		0				146			14					308			
Factor						0.51			0.5	8				0.52			
·	<u>North</u>		<u>Ea</u> :	<u>st</u>	South	1	<u>West</u>	•	<u>Total</u>							-	
Pedestrians	0		0)	0		0		0								
Peak Vehicles																	
Car	24 96.0%		0	14 100%	2 100%	121 100%			0	0	0		0	294 100%	12 100%	99.	467 8%
SU		1	0	0	0	O			0	0	0		0	0	0		1 2%

-	North			State Street	Fac 0.5 Tot 30 25 0	57 tal 9	Factor 0.58					
_	6t	h Ave			0	0	0			Р	arking L	.ot
	Factor 0.51	\Diamond	146	0		Peak Sta i 7:15 AM	-t		0	4	2 21	Total 123
=	Total 306	12	Ŷ	0		Volume 468			0	<u>†</u>	0	Factor 0.50
_	Factor 0.53	294 0		0		Factor 0.57			0	308	\Rightarrow	Factor 0.52
					0	0	0					
					°	\ • •	o o	>				

Turning Movement Peak Hour Details

		uthbound			estbound		Northbound				Eastbou				
		ate Street			rking Lo							th Ave		_	
Interval	Right	Thru 0	Left	Right 0	Thru	Left 0	Rig	ht I	Γ <u>hru</u> Ο	Left 0	Righ (2	<u>Total</u>
1:30 PM 1:45 PM	1 2	0	0	0	3	0		0	0	0	(1 : 3		7 7
2:00 PM	3	0	1	2	6	0		0	0	0	(13
2:15 PM	3	0	0	0	5	0		0	0	0	(2		11
2:30 PM	3	0	1	2	1	0		0	0	0	(4		12
2:45 PM	6	0	8	1	7	0		0	0	0	(3	41
3:00 PM	9	0	1	43	38	0		0	0	0	() 3	0 10		131
3:15 PM	8	0	1	17	69	0		0	0	0	() 2	7 4	1	126
3:30 PM	1	0	0	0	0	0		0	0	0	()	1 (o	2
Totals	36	0	12	65	130	0		0	0	0	() 8	5 2	2	350
Entering		48			195			C)			107			
Exiting		0			166			8	7			97			
	North	Fo	ct	Sout	h	Most		Total							
Pedestrians	0	<u>Ea</u>		<u>3001</u>	<u></u>	West 0		<u>10tai</u>							
i cucsti turis	Ü		,	Ü		Ü		J							
Vehicle Totals	-			_										_	
Car	36	0	12	65	130	0		0	0	0	(8			347
	100%		100%	100%	100%							97.69		+	0.1%
SU	0	0	0	0	0	0		0	0	0	(2.49	2 % 4.5%	· I	3).9%
	•				Da ala III		00 DM	2.20	DM					•	
	•				Реак н	our: 2:	30 PIVI	- 3:30	PIVI	1					
		uthbound			estbound			North	oound			Eastbou			
		i te Street Thru Le			rking Lo ^r Thru L		Right	Thru	Left		<i>t</i> Right	th Aver Thru	nue Left	Total	
Totals	26 C				115 0		Rigiit O	0	0		nigiii 0	77	18	310	
Factor	0.72 -).42 -		-	-	-		-	0.64	0.45	0.59	
1 40101	0.72	0	5 1	0.07). IZ							0.01	0.10	0.07	
Entering		37			178			C	`			95			
Factor		0.66			0.52			C	,			0.59			
		0.00			0.52							0.54			
Exiting		0			141			8	1			88			
Factor		J			0.46			0.3				0.71			
		_					'			ļ				•	
Dadaskiisis	<u>North</u>	<u>Ea</u>		Sout	<u>h</u>	<u>West</u>		<u>Total</u>							
Pedestrians	0	C	J	0		0		0							
Peak Vehicles	ē			-											
Car	26	0	11	63	115	0		0	0	0	(7			308
	100%	<u> </u>	100%	100%	100%					Ŭ		97.49		99	0.4%
SU	0	0	0	0	0	0		0	0	0	(2.69	2		2).6%
	<u> </u>						<u> </u>					2.07	0	1	7.070

· Vice	North			State Street	O To 3	ctor .66 otal 37 0 11		factor 0.38				
	6th	Avenue			0	0		0			Parking l	_ot
	Factor 0.46	\Diamond	141	0		Peak Sta 2:30 PM			0		63 115	Total 178
•	Total 95	18	Ŷ	0		Volume 310	•		0	, 	0	Factor 0.52
	Factor 0.59	77 0		0		Factor 0.59			0	88	\Diamond	Factor 0.71
					0	0		0				
					Ů	0	0 Total 0	\Diamond \circ				



Appendix B

ITE Trip Generation

Land Use: 530 High School

Description

High schools serve students who have completed middle or junior high school. Both public and private high schools are included in this land use. Elementary school (Land Use 520), middle school/junior high school (Land Use 522), private school—K–8 (Land Use 534) and private school—K–12 (Land Use 536) are related uses.

Additional Data

The trip generation for weekend time periods varied considerably; therefore, caution should be used when applying weekend statistics. Information describing the weekend activities conducted at the high schools was not available.

Average weekday transit trip ends-

The percentage of the students at the sites who were transported to school via bus varied considerably. Due to the varied transit and school bus usage at these sites, it is desirable that future studies include additional detail on the percentage of students that were bussed to school and the percentage that were dropped off and picked up.

The populations served and the social and economic characteristics of the areas surveyed varied considerably. The high schools also exhibited significant variations in terms of facilities provided.

Since the ratio of floor space to student population varied widely among the schools surveyed, the number of students may be a more reliable independent variable on which to establish trip generation rates.

Peak hours of the generator—

The weekday a.m. peak hour of the generator typically coincided with the peak hour of the adjacent street traffic; therefore, only one a.m. peak hour, which represents both the peak hour of the generator and the peak hour of the adjacent street traffic, is displayed. The weekday p.m. peak hour varied between 2:00 p.m. and 4:00 p.m.

The sites were surveyed from the late 1960s to the 2000s throughout the United States.

Many of the studies included in this land use did not indicate if the schools were public or private. To assist in the future analysis of this land use, it is important that this information be collected and included in trip generation data submissions.

Source Numbers

7, 10, 31, 33, 34, 40, 86, 91, 186, 293, 383, 409, 422, 444, 533, 536, 550, 564, 579

High School (530)

Average Vehicle Trip Ends vs: Students

On a: Weekday,

A.M. Peak Hour

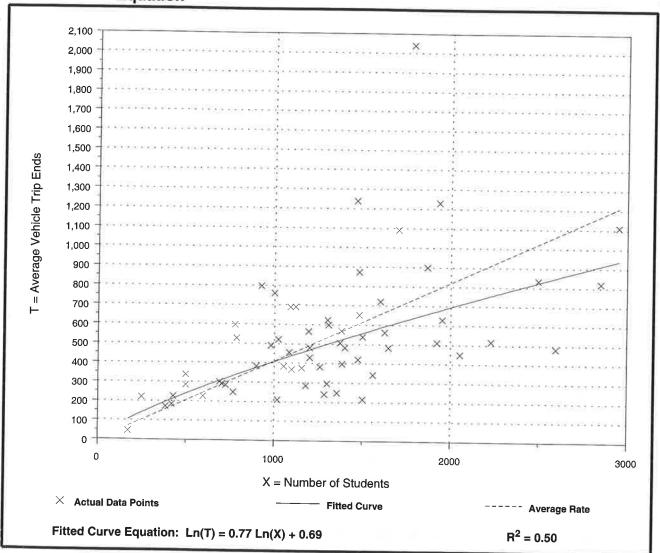
Number of Studies: 62 Average Number of Students: 1,290

Directional Distribution: 69% entering, 31% exiting

Trip Generation per Student

Average Rate	Range of Rates	Standard Deviation
0.41	0.14 - 1.15	0.67

Data Plot and Equation



High School

(530)

Average Vehicle Trip Ends vs: Students

On a: Weekday,

P.M. Peak Hour of Generator

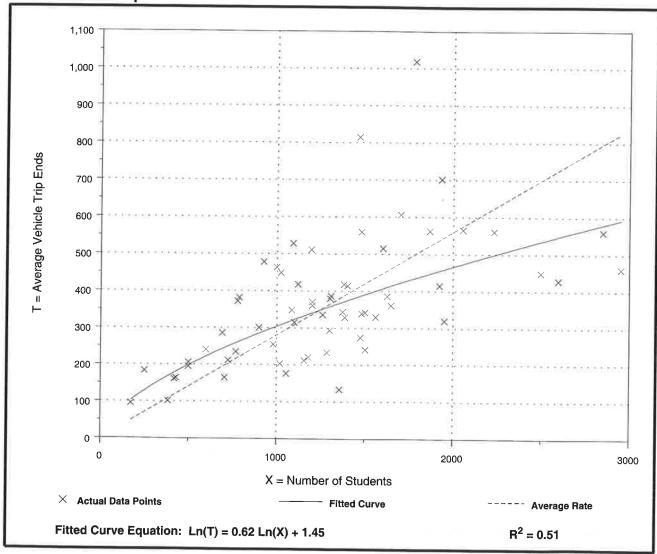
Number of Studies: 62 Average Number of Students: 1,290

Directional Distribution: 32% entering, 68% exiting

Trip Generation per Student

Average Rate	Range of Rates	Standard Deviation
0.28	0.10 - 0.74	0.54

Data Plot and Equation





Appendix C

Level of Service Analysis

This TWSC text report was created on 06/01/2016 16:58:15

HCS 2010 Two Way Stop Intersections Release 6.70

File Name: Analyst: Agency/Co.: Date Performed: Time Analyzed: Jurisdiction: Analysis Year: Project Description: Units: Intersection Name: Major Street Direction: East/West Street Name: North/South Street Name: Analysis Time Period (hr:	Cc EE 5/ AM EA 20 EA U. Ea 5t	ırrent Tra ollette Fr	ohlich r ion ary eway 1	TROL (TWS0	c) Anal ys	i s			
Major Street:		Vehi cl	e Volumes	and Adju	stments_				
Approach Movement	1U	EastBour 1	nd 2	3	I	4U	WestBou 4	nd 5	6
MOVEMENT	Ü	Ĺ	T	R		Ü	Ĺ	Ť	R
Volume			287	128	0.00		129	185	
Peak Hour Factor, PHF Hourly Flow Rate, HFR			346	154	0. 83		155	223	
Percent Heavy Vehicles Number of Lanes	0	0	1	0		0	1 1	1	0
Lane Configuration Median Type				TR	Undi vi de	ed	L	T	
Median Storage RT channelized?				No					No
Left-Turn Lane Storage Upstream Signal?				110	Not Pre	cont	5		110
Minor street: Approach		NorthBou					SouthBo		10
Movement		7 L	8 T	9 R			10 L	11 T	12 R
Vol ume		92		40					
Peak Hour Factor, PHF Hourly Flow Rate, HFR		111		48	0. 83				
Percent Heavy Vehicles Number of Lanes		1	0	3			0	0	0
Lane Configuration		Ĺ	O	R			O	O	No
RT channelized? Flared Approach/Storage		No	/	No			No	/	NO
Percent Grade			0						
Annroach		Pedestr	ian Volum	nes and Ad		s	NB		SB
Approach Movement			EB 13		WB 14		15		3B 16
Flow (ped/hr)			131		131		79		0
Lane Width (ft) Walking Speed (ft/sec)			12. 0 3. 5		12. 0 3. 5		12. 0 3. 5		
Pedestřian Blockage Facto	or, f(pb)		0. 098		0. 001		0. 004		
	De	elay, Queu	e Length,	and Leve	el of Serv	vi ce			
Approach EB Movement 1U	1	WB 4U	4	7	thBound 8	9	So 10	uthBound 11	12
Lane Config.			L	L		R			
Flow Rate Lane Capacity			155 985	111 162		48 475			
v/c 95% Queue Leng.			0. 16 0. 6	0. 69 4. 0		0. 10 0. 3			
Control Delay			9. 3	65.8		13. 4			
LOS Approach Delay			A 3. 8	F	<u>5</u> 0. 0	В			
Approach LOS Intersct. Delay	9. 1		Α		E				
, and the second		.	4 1401/5	MENT DOLG	N TI 50				
		step	1: MOVEN	IENI PRIU	a iies				

Major Street: Approach Priority Movement	1U U	EastBou 1 L	nd 2 T	3 R		4U U	WestBo 4 L	ound 5 T	6 R
Minor Street: Approach Priority Movement		NorthBo 7 L	8 T	9 R			Southl 10 L	Bound 11 T	12 R
Maj or Street:	Step			ND VOLUME	S AND FLO	N RATES			
Approach Movement	1U U	EastBou 1 L	nd 2 T	3 R		4U U	WestBo 4 L	ound 5 T	6 R
Volume, V(x) Flow Rate, v(x)			287 346	128 154			129 155	185 223	
Minor Street: Approach Movement		NorthBo 7 L	und 8 T	9 R			Southl 10 L	Bound 11 T	12 R
Volume, V(x) Flow Rate, v(x)		92 111		40 48					
Major Street:		Step	3: CONFL	ICTING FL	_OW RATES				
Approach Movement	1U U	EastBou 1 L	nd 2 T	3 R		4U U	WestBo 4 L	ound 5 T	6 R
Flow Rate, v(x) Conflicting Flow,v(c,x)			346	154			155 579	223	
Minor Street: Approach Movement		NorthBo 7 L	und 8 T	9 R			Southl 10 L	Bound 11 T	12 R
Flow Rate, v(x) Conflicting Flow, v(c,x)		111 1166		48 633					
	Step	4: CRITI	CAL HEADW	AYS and F	FOLLOW-UP	HEADWAYS_			
CRITICAL HEADWAYS Approach EB		WB			orthBound			SouthBound	
Movement 1U U	1 L	4U U	4 L	7 L	8 T	9 R	10 L	11 T	12 R
t(c, base) Single Stage Stage I Stage II t(c, HV)			4. 1	7. 1		6. 2			
P(HV) t(c,G)			0. 01 0. 0	0. 01 0. 2		0. 03 0. 1			
G t(3, LT) t(c) Single Stage Stage I			0 0. 0 4. 13	0 0. 7 6. 43		0 0. 0 6. 23			
Stage II									
FOLLOW-UP HEADWAYS Approach EB Movement 1U U	1 L	WB 4U U	4 L	No 7 L	orthBound 8 T	9 R	10 L	SouthBound 11 T	12 R
t(f, base) t(f, HV) P(HV) t(f)			2. 2 0. 9 0. 01 2. 23	3. 5 0. 9 0. 01 3. 53		3. 3 0. 9 0. 03 3. 33			
NO LIDSTDEAM SLOWAL FEFE	C DDECENT	Ste	5: P0TE	NTIAL CAF	PACITIES				
NO UPSTREAM SIGNAL EFFECT Approach EB Movement 1U U	1 L	WB 4U U	4 L	No 7 L	orthBound 8 T	9 R	10 L	SouthBound 11 T	12 R
v(c, x)			579	1166		633			

t(c, x)	4. 13	6. 43	6. 23
t(c, x) t(f, x) c(p, x)	2. 23	3. 53	3. 33
c(p, x)	989	213	478

### Approach EB	Pedestri an Impedance	steps 6 - 9: MO	VEMENT CAPACITIES		
ane Width, walking speed, S(p) alking Speed, S(p) a	pproach				SB 16
aj or-Street Left-Turn Movement a) or-Street Left-Turn Movement a) or-Street Left-Turn Movement a) or-Street Left-Turn Movement b) operation (apacity, c(p, x) operation (apacity, c(p, x) operation) coment (apacity, c(p, x) operation) coment (apacity, c(p, x) operation) confilicting Flow, v(c, x) confi	ane Width, w alking Speed, S(p)	12. 0 3. 5	12. 0 3. 5	12. 0 3. 5	0
onfileting Flow, v(c, x) oriential Capacity, c(p, x) destrial impedance Factor, p(p, x) offileting Flow, v(c, x) considering flow, v(c, x) oriential Capacity, c(p, x) considering flow, v(c, x) oriential Capacity, c(p, x) destrial impedance Factor, p(p, x) oriential Capacity, c(p, x) destrial impedance Factor, p(p, x) oriential Capacity, c(p, x) destrial impedance Factor, p(p, x) oriential Capacity, c(p, x) destrial impedance Factor, p(p, x) oriential Capacity, c(p, x) oriential Capacity, c(m, x) inor-Street U-turn Movement oriential Capacity, c(m, x) oriential Capacity, c(p, x) oriential Capacity, c(p, x) oriential Capacity, c(m, x) ori		0.098			
otential Capacity, c(p, x) evenent Capacity, c(p, x) evenent Capacity, c(p, x) evenent Capacity, c(m, x) robability of Queue-Free State, p(0,j) officing Flow, v(c, x) otential Capacity, c(p, x) evenent Capacity, c(p, x) evenen					
onflicting Flow, v(c,x) otential Capacity, c(p,x) destrian impedance Factor, p(p,x) apacity Adjustment Factor, p(p,x) apacity Adjustment Factor, p(p,x) apacity C(m,x) apacity C(m,x) apacity C(m,x) apacity Adjustment Factor, p(p,x) apacity Adjus	otential Čapacity, c(p,x) edestrian Impedance Factor, p(p,x ovement Capacity, c(m,x) robability of Queue-free State, p	(0, j)		989 0. 996 985 0. 843	
otential Capacity, C(p, x) edestrian Impedance Factor, p(p, x) ovement Capacity, C(m, x) ajor-Street U-turn Movement by ajor-Street U-turn Movement ajor-Street U-turn Movement ajor-Street U-turn Movement ajor-Street U-turn Movement by ajor-Street U-turn Movement alor-Street U-turn Movement alor-Street Life Capacity, C(m, x) bereal Life Capacity, C(m, x) bereal Life Capacity, C(p, x) detestrian Impedance Factor, p(p, x) ajor-Street Left-Turn Movement alor-Street Left-Turn Life Life Life Life Life Life Life Life	inor-Street Right-Turn Movement		9	12	
Conflicting Flow, v(c,x) Control	Potential Čapacity, c(p,x) Pedestrian Impedance Factor, p(p,x Movement Capacity, c(m,x)		478 0. 995 475		
Total Capacity (Cip. x) Total Capacity (ajor-Street U-turn Movement		10	4U	
Conficing Flow, v(c, x) Potential Capacity, c(p, x) Potentia	Potential Čapacity, c(p,x) Capacity Adjustment Factor, f(x) Movement Capacity, c(m,x) Shared L/U Capacity, c(SH)	o(0, j)			
Otential Capacity, C(p, x) redestrian Impedance Factor, p(p, x) redestrian Impedance Factor, p(p, x) reducibility of Queue-free State, p(0,j)	inor-Street Through Movement		8	11	
Conflicting Flow, v(c, x) Potential Capacity, c(p, x) Potential Capacity	Potential Čapacity, c(p,x) Pedestrian Impedance Factor, p(p,x Capacity Adjustment Factor, f(x) Movement Capacity, c(m,x)				
Step 11: Control Delay	inor-Street Left-Turn Movement		7	10	
Step 11: CONTROL DELAY CON	Potential Capacity, c(p,x) Pedestrian Impedance Factor, p(p,x Major L, Minor T Adj. Imp. Factor, Major L, Minor T Impedance Factor,	p"	213 0. 898		
CONTROL DELAY TO RANK 2 THROUGH 4 MOVEMENTS CONTROL DELAY TO RANK 2 THROUGH 4 MOVEMENT CONTROL DELAY 2 THROUGH 4 MOVEMENT CONTROL DELAY 2 THROUGH 4 MOVEMENT CONTROL DELAY 2 THROUGH 4 MO	lapacity Adjustment Factor, 1(p,1) Novement Capacity, c(m,x)				
Steps 12 - 13: APPROACH/INTERSECTION CONTROL DELAY and povement Delay	ONTDOL DELAY TO DANK O TUDOUCU 4		ONTROL DELAY		
Movement Cap.	Approach EB Movement 1U 1	WB 4U 4	7 8	9 10 11	
Approach EB WB NorthBound SouthBound Movement 1U 1 4U 4 7 8 9 10 11	Movement Cap. ∟ane Config. Shared Cap.	985 L 985	162 L 162	475 R 475	
Novement 1U 1 4U 4 7 8 9 10 11 Lane Config. Flow Rate Lane Capacity 985 162 475 17/C 0.16 0.69 0.10 95% Queue Leng. 0.6 4.0 0.3					
Anne Capacity 985 162 475 1/C 0.16 0.69 0.10 1/5% Queue Leng. 0.6 4.0 0.3	lovement 1U 1	4U 4	7 8	9 10 11	
95% Queue Leng. 0.6 4.0 0.3	ane Capacity //c	985	162 0. 69	475 0. 10	
7. 3 03. 0 13. 4	95% Queue Leng. Control Delay		4. 0 65. 8	0. 3 13. 4	

9. 1

A F 3.8 A

50. 0 E В

This TWSC text report was created on 06/01/2016 17:00:48

File Name: Analyst: Agency/Co.: Date Performed: Time Analyzed: Jurisdiction: Analysis Year: Project Description: Units: Intersection Name: Major Street Direction: East/West Street Name: North/South Street Name: Analysis Time Period (hrs)	Col EEI 5/2 PM EAS 20' EAI U.S EAS 5th Tor	rent Tra lette From 24/2016 Peak Hou SD #131 16 HS Expans S. Custom HS - Drive St-West n Avenue	ffic - PN ohlich r ion ary	ROL (TWSC 1 Peak Hou	c) Analys	i s			
Major Street:				and Adju	istments_				
Approach Movement	1U	EastBoun 1	2	3		4U	WestBou 4	5	6
	U 	L	Т	R		U	L	Т	R
Volume Peak Hour Factor, PHF			246	58	0. 88		81	226	
Hourly Flow Rate, HFR Percent Heavy Vehicles			280	66			92 5	257	
Number of Lanes Lane Configuration	0	0	1	O TR		0	1 L	1 T	0
Median Type Median Storage					Undi vi d	ed			
RT channelized? Left-Turn Lane Storage				No			5		No
Upstream Signal?					Not Pre	sent 			
Minor street: Approach		NorthBou		0	1		SouthBo		10
Movement		7 L	8 T	9 R			10 L	11 T	12 R
Volume Peak Hour Factor, PHF		67		57	0.00				
Hourly Flow Rate, HFR		76		65	0. 88				
Percent Heavy Vehicles Number of Lanes		2	0	7 1			0	0	0
Lane Configuration RT channelized?		L	,	R No			No	,	No
Flared Approach/Storage Percent Grade		No	0				No	/	
		Pedestr	ian Volum	nes and Ad	ljustment	S			
Approach Movement			EB 13		WB 14		NB 15		SB 16
Flow (ped/hr)			70		70		163		0
Lane Width (ft) Walking Speed (ft/sec)			12. 0 3. 5		12. 0 3. 5		12. 0 3. 5		
Pedestřian Blockage Factor	r, f(pb)		0. 011		0. 195		0. 086		
Approach EB	Del	ay, Queu WB	e Length,		el of Ser thBound	vi ce	\$0	uthBound	
Movement 1U Lane Config.	1	4U WB	4 L	7 L	8	9 R	10	11	12
Flow Rate Lane Capacity			92 954	76 224		65 389			
v/c 95% Queue Leng.			0. 10 0. 3	0. 34 1. 4		0. 17 0. 6			
Control Delay			9. 2 A	29. 1 D		16. 1 C			
Approach Delay Approach LOS			2. 4 A	J	23. 1 C	J			
Interset. Delay	4. 9		,,		J				
		Step	1: MOVEN	IENT PRIOF	RI TI ES				

Major Street: Approach Priority Movement	1U U	EastBou 1 L	nd 2 T	3 R		4U U	WestBo 4 L	ound 5 T	6 R
Minor Street: Approach Priority Movement		NorthBo 7 L	8 T	9 R			South 10 L	Bound 11 T	12 R
Maj or Street:	Step			ND VOLUME	ES AND FLO	W RATES			
Approach Movement	1U U	EastBou 1 L	nd 2 T	3 R		4U U	WestB 4 L	ound 5 T	6 R
Volume, V(x) Flow Rate, v(x)			246 280	58 66			81 92	226 257	
Minor Street: Approach Movement		NorthBo 7 L	und 8 T	9 R			South 10 L	Bound 11 T	12 R
Volume, V(x) Flow Rate, v(x)		67 76		57 65					
Major Street:		Step	3: CONFL	ICTING FL	_OW RATES_				
Approach Movement	1U U	EastBou 1 L	nd 2 T	3 R		4U U	WestB 4 L	ound 5 T	6 R
Flow Rate, v(x) Conflicting Flow, v(c, x)			280	66			92 509	257	
Minor Street: Approach Movement		NorthBo 7 L	und 8 T	9 R			South 10 L	Bound 11 T	12 R
Flow Rate, v(x) Conflicting Flow, v(c,x)		76 987		65 546					
	Step	4: CRITIO	CAL HEADW	/AYS and F	FOLLOW-UP	HEADWAYS_			
CRITICAL HEADWAYS Approach EB		WB			orthBound			SouthBound	
Movement 1U U	1 L	4U U	4 L	7 L	8 T	9 R	10 L	11 T	12 R
t(c, base) Single Stage Stage Stage t(c, HV) P(HV)			4. 1 1. 0 0. 05	7. 1 1. 0 0. 02		6. 2 1. 0 0. 07			
t(c, G) G			0.00	0. 2 0		0. 1 0. 1			
t(3, LT) t(c) Single Stage Stage I Stage II			0. 0 4. 15	0. 7 6. 42		0. 0 6. 27			
FOLLOW-UP HEADWAYS Approach EB Movement 1U U	1 L	WB 4U U	4 L	No 7 L	orthBound 8 T	9 R	10 L	SouthBound 11 T	12 R
t(f,base) t(f,HV) P(HV) t(f)			2. 2 0. 9 0. 05 2. 24	3. 5 0. 9 0. 02 3. 52		3. 3 0. 9 0. 07 3. 36			
NO LIDCTDEAM CLONAL EFFECT	TO DDECENS	Step	5: P0TE	NTIAL CAF	PACITIES				
NO UPSTREAM SIGNAL EFFECTApproach EB Movement 1U U	IS PRESENT 1 L	WB 4U U	4 L	No 7 L	orthBound 8 T	9 R	10 L	SouthBound 11 T	12 R
v(c, x)			509	987		546			

t(c, x) t(f, x) c(p, x)	2. 24 3	. 42 6. . 52 3. 74 52	36	
Ster	os 6 - 9: MOVEMI	ENT CAPACITIES		
Pedestrian Impedance Approach Movement	EB 13	WB 14	NB 15	SB 16
Pedestrian Flow Rate, v(x) Lane Width, w Walking Speed, S(p) Pedestrian Blockage Factor, f(pb)	70 12. 0 3. 5 0. 011	70 12. 0 3. 5 0. 195	163 12. 0 3. 5 0. 086	0
Major-Street Left-Turn Movement		1	4	
Conflicting Flow, v(c,x) Potential Capacity, c(p,x) Pedestrian Impedance Factor, p(p,x) Movement Capacity, c(m,x) Probability of Queue-free State, p(0,j) Major L-Shared Prob. Q-free St., p*(0,j))		509 1043 0.914 954 0.904 0.904	
Minor-Street Right-Turn Movement		9	12	
Conflicting Flow, v(c,x) Potential Capacity, c(p,x) Pedestrian Impedance Factor, p(p,x) Movement Capacity, c(m,x) Probability of Queue-free State, p(0,j)		546 528 0. 736 389 0. 833		
Major-Street U-turn Movement		10	4U	
Conflicting Flow, v(c,x) Potential Capacity, c(p,x) Capacity Adjustment Factor, f(x) Movement Capacity, c(m,x) Shared L/U Capacity, c(SH) Probability of Queue-free State, p(0,j)				
Minor-Street Through Movement		8	11	
Conflicting Flow, v(c,x) Potential Capacity, c(p,x) Pedestrian Impedance Factor, p(p,x) Capacity Adjustment Factor, f(x) Movement Capacity, c(m,x) Probability of Queue-free State, p(0,j)				
Minor-Street Left-Turn Movement		7	10	
Conflicting Flow, v(c,x) Potential Capacity, c(p,x)		987 274		·····

Minor-Street Left-Turn Movement	7	10	
Conflicting Flow, v(c,x)	987		
Potential Čapacity, c(p,x)	274		
Pedestrian Impedance Factor, p(p,x)	0. 904		
Major L, Minor T Adj. Imp. Factor, p"			
Major L, Minor T Impedance Factor, p'			
Capacity Adjustment Factor, f(p, I)	0. 904		
Movement Capacity, c(m,x)	224		

			Step 11:	CONTROL	DELAY					
O RANK 2	THROUGH 4	4 MOVEMEN	TS ·							
E	В	WI	3		NorthBound		•	SouthBoun	d	
1U	1	4U	4	7	8	9	10	11	12	
U	L	U	L	L	T	R	L	T	R	
										_
			92	76		65				
			954	224		389				
			L	L		R				
			954	224		389				
			9. 2	29. 1		16. 1				
	E	EB	O RANK 2 THROUGH 4 MOVEMEN EB WE	TO RANK 2 THROUGH 4 MOVEMENTS ' EB WB 1U 1 4U 4 U L 92 954 L 954	TO RANK 2 THROUGH 4 MOVEMENTS BEB WB 1U 1 4U 4 7 U L L 92 76 954 224 L 954 224	EB WB NorthBound 1U 1 4U 4 7 8 U L U L T 92 76 954 224 L L 954 224	TO RANK 2 THROUGH 4 MOVEMENTS WB NorthBound 1U 1 4U 4 7 8 9 U L U L T R 92 76 65 954 224 389 L L R 954 224 389	RANK 2 THROUGH 4 MOVEMENTS ' EB	TO RANK 2 THROUGH 4 MOVEMENTS BB WB NorthBound SouthBound 1U 1 4U 4 7 8 9 10 11 U L U L T R L T 92 76 65 954 224 389 L L R 954 224 389	TO RANK 2 THROUGH 4 MOVEMENTS SouthBound SouthBound

Approach Movement Lane Config.	12 - 13: EB 1	APPROACH/I WE 4U			L DELAY and lorthBound 8	95% 9 R	QUEUE LENGTHSSouthBound 10 11	12
Flow Rate Lane Capacity v/c 95% Queue Leng. Control Delay			92 954 0. 10 0. 3 9. 2	76 224 0. 34 1. 4 29. 1		65 389 0. 17 0. 6 16. 1		

4. 9

A 2. 4 A

С 23. 1 C

This TWSC text report was created on 06/01/2016 16:58:55

File Name: Analyst: Agency/Co.: Date Performed: Time Analyzed: Jurisdiction: Analysis Year: Project Description: Units: Intersection Name: Major Street Direction: East/West Street Name: North/South Street Name: Analysis Time Period (hrs	CC EF 5, AM E/ 20 E/ U. E2 51	uture Traf ollette Fr	ohlich r ion ary eway 1	FROL (TWS0 Peak Houi	2) Analys	si s			
Major Street:			e Volumes	and Adj	ustments_				
Approach Movement	1U	EastBour 1	2	3	I	4U	WestBo 4	5	6
	U 		T	R		U 	L	T	R
Volume Peak Hour Factor, PHF Hourly Flow Rate, HFR Percent Heavy Vehicles			342 412	150 181	0. 83		152 183	213 257	
Number of Lanes Lane Configuration Median Type	0	0	1	O TR	Undi vi d	0 led	1 1 L	1 T	0
Median Storage RT channelized? Left-Turn Lane Storage Upstream Signal?				No	Not Pre	esent	3		No
Minor street: Approach Movement		NorthBoo 7 L	und 8 T	9 R			SouthBo 10 L	ound 11 T	12 R
Volume Peak Hour Factor, PHF Hourly Flow Rate, HFR Percent Heavy Vehicles Number of Lanes Lane Configuration RT channelized? Flared Approach/Storage Percent Grade		105 127 1 1 L No	0 / 0	45 54 3 1 R No	0. 83		O No	0	O No
Approach		Pedestr	ian Volum	nes and A		:S	NB		CD.
Approach Movement			EB 13		WB 14		15		SB 16
Flow (ped/hr) Lane Width (ft) Walking Speed (ft/sec) Pedestrian Blockage Facto	or, f(pb)		152 12.0 3.5 0.098		152 12. 0 3. 5 0. 001		91 12. 0 3. 5 0. 004		0
Approach EB Movement 1U Lane Config.	De	elay, Queu WB 4U	e Length, 4 L	and Leve No 7 L	el of Ser rthBound 8	vi ce 9 R	10	outhBound 11	12
Flow Rate Lane Capacity v/c 95% Queue Leng. Control Delay			183 900 0. 20 0. 8 10. 0	127 115 1. 10 7. 7 185. 9		54 410 0. 13 0. 5 15. 1			
LOS Approach Delay Approach LOS Intersct. Delay	21. 6		B 4. 2 A	F	134. 9 F	С			
		Step	1: MOVEM	MENT PRIO	RI TI ES				

Major Street: Approach Priority Movement	1U U	EastBou 1 L	nd 2 T	3 R		4U U	WestE 4 L	Bound 5 T	6 R
Minor Street: Approach Priority Movement		NorthBo 7 L	und 8 T	9 R			South 10 L	nBound 11 T	12 R
Major Street:	Step			ND VOLU	MES AND FLO	V RATES_			
Approach Movement	1U U	EastBou 1 L	nd 2 T	3 R		4U U	WestE 4 L	Bound 5 T	6 R
Volume, V(x) Flow Rate, v(x)			342 412	150 181			152 183	213 257	
Minor Street: Approach Movement		NorthBo 7 L	und 8 T	9 R			South 10 L	nBound 11 T	12 R
Volume, V(x) Flow Rate, v(x)		105 127		45 54					
		Step	3: CONFL	I CTI NG	FLOW RATES				
Major Street: Approach Movement	1U U	EastBou 1 L	nd 2 T	3 R		4U U	WestE 4 L	Bound 5 T	6 R
Flow Rate, v(x) Conflicting Flow,v(c,x)			412	181			183 684	257	
Minor Street: Approach Movement		NorthBo 7 L	und 8 T	9 R			South 10 L	nBound 11 T	12 R
Flow Rate, v(x) Conflicting Flow, v(c,x)		127 1368		54 746					
	Step	4: CRITIO	CAL HEADW	AYS and	FOLLOW-UP I	HEADWAYS.			
CRITICAL HEADWAYS Approach EB Movement 1U U	1 L	WB 4U U	4 L	7 L	NorthBound 8 T	9 R	10 L	SouthBound 11 T	12 R
t(c, base) Single Stage Stage I Stage II			4. 1	7. 1		6. 2			
t(c,HV) P(HV) t(c,G) G			1. 0 0. 01 0. 0 0	1. 0 0. 01 0. 2 0		1. 0 0. 03 0. 1 0			
t(3, LT) t(c) Single Stage Stage I Stage II			0. 0 4. 13	0. 7 6. 43		0. 0 6. 23			
FOLLOW-UP HEADWAYS Approach EB Movement 1U U	1 L	WB 4U U	4 L	7 L	NorthBound 8 T	9 R	10 L	SouthBound 11 T	12 R
t(f, base) t(f, HV) P(HV) t(f)			2. 2 0. 9 0. 01 2. 23	3. 5 0. 9 0. 01 3. 53		3. 3 0. 9 0. 03 3. 33			
NO LIDCTDEAM CLONAL EFFECT	C DDECEVE	Step	5: P0TE	NTIAL C	APACITIES				
NO UPSTREAM SIGNAL EFFECT Approach EB Movement 1U U	TS PRESENT 1 L	WB 4U U	4 L	7 L	NorthBound 8 T	9 R	10 L	SouthBound 11 T	12 R
v(c, x)			684	1368		746			

t(c, x)	4. 13	6. 43	6. 23
t(f, x)	2. 23	3. 53	3. 33
c(p, x)	904	161	412

edestrian Impedance	7. move	MENT CAPACITIES		
pproach ovement	EB 13	WB 14	NB 15	SB 16
edestrian Flow Rate, v(x) ane Width, w alking Speed, S(p) edestrian Blockage Factor, f(pb)	152 12. 0 3. 5 0. 098	152 12.0 3.5 0.001	91 12.0 3.5 0.004	0
jor-Street Left-Turn Movement		1	4	
onflicting Flow, v(c,x) otential Capacity, c(p,x) edestrian Impedance Factor, p(p,x) ovement Capacity, c(m,x) robability of Queue-free State, p(0, ajor L-Shared Prob. Q-free St., p*(0	j)),j)		684 904 0. 996 900 0. 797 0. 797	
nor-Street Right-Turn Movement		9	12	
onflicting Flow, v(c,x) otential Capacity, c(p,x) edestrian Impedance Factor, p(p,x) ovement Capacity, c(m,x) robability of Queue-free State, p(0,	j)	746 412 0. 995 410 0. 868		
ajor-Street U-turn Movement		10	4U	
onflicting Flow, v(c,x) otential Capacity, c(p,x) apacity Adjustment Factor, f(x) ovement Capacity, c(m,x) nared L/U Capacity, c(SH) robability of Queue-free State, p(0,	j)			
nor-Street Through Movement		8	11	
onflicting Flow, v(c,x) otential Capacity, c(p,x) edestrian Impedance Factor, p(p,x) apacity Adjustment Factor, f(x) ovement Capacity, c(m,x) robability of Queue-free State, p(0,	j)			
nor-Street Left-Turn Movement		7	10	
onflicting Flow, v(c,x) otential Capacity, c(p,x) edestrian Impedance Factor, p(p,x) ajor L, Minor T Adj. Imp. Factor, p" ajor L, Minor T Impedance Factor, p'		1368 161 0. 898		
apacity Adjustment Factor, f(p,l) by ement Capacity, c(m,x)		0. 797 115		
	Step 11: CON	TROL DELAY		
ONTROL DELAY TO RANK 2 THROUGH 4 MON oproach EB ovement 1U 1 4 U L U	/EMENTS · WB U 4	NorthBound 7 8 9 L T R		
ow Rate ovement Cap. ane Config. nared Cap. ontrol Delay	900 L 900	115 4 L R 115 4	10 10 10 5. 1	
Steps 12 - 13: APPROA				
oproach EB ovement 1U 1 4 ane Config.		NorthBound 7 8 9 L R		
ow Rate			10	

21. 6

B 4. 2 A

С 134. 9 F

HCS 2010 TWSC Text Report

This TWSC text report was created on 06/01/2016 17:01:08

File Name: Analyst: Agency/Co.: Date Performed: Time Analyzed: Jurisdiction: Analysis Year: Project Description: Units: Intersection Name: Major Street Direction: East/West Street Name: Analysis Time Period (hrs	CC EI 5, P! E, 20 E, U. E5 TC	uture Trat ollette Fi	ur sion mary veway 1	ROL (TWS Peak Hou	C) Analys	si s			
Major Street:		Vehi cl	e Volumes	and Adj	ustments_				
Approach Movement	1U	EastBou 1	nd 2	3	I	4U	WestBo	und 5	6
MOVEMENT	Ü	Ĺ	T	R		Ü	Ĺ	Ť	R
Volume Peak Hour Factor, PHF			273	63	0. 88		89	280	
Hourly Flow Rate, HFR Percent Heavy Vehicles			310	72	0. 88		101 5	318	
Number of Lanes Lane Configuration Median Type	0	0	1	O TR	Undi vi d	0 led	1 L	1 T	0
Medi an Storage RT channelized? Left-Turn Lane Storage Upstream Signal?				No	Not Pre	esent	3		No
Minor street:									
Approach Movement		NorthBo 7 L	und 8 T	9 R			SouthB 10 L	ound 11 T	12 R
Volume Peak Hour Factor, PHF		82		69	0.00				
Hourly Flow Rate, HFR		93		78	0. 88				
Percent Heavy Vehicles Number of Lanes		2	0	7 1			0	0	0
Lane Configuration RT channelized? Flared Approach/Storage Percent Grade		L No	/ 0	R No			No	/	No
		Dodoot		noc and a	di uo+mas+				
Approach Movement		Peaesti	rian Volum EB 13	ies and A	WB 14	.S	NB 15		SB 16
Flow (ped/hr) Lane Width (ft) Walking Speed (ft/sec) Pedestrian Blockage Facto	or, f(pb)		80 12. 0 3. 5 0. 011		80 12. 0 3. 5 0. 195		189 12. 0 3. 5 0. 086		0
	De	elay, Quei	ue Length,			vi ce			
Approach EB Movement 1U Lane Config.	1	4U WB	4 L		rthBound 8	9 R	10	outhBound 11	12
Flow Rate Lane Capacity v/c 95% Queue Leng.			101 904 0. 11 0. 4	93 180 0. 52 2. 6		78 355 0. 22 0. 8			
Control Delay LOS Approach Delay			9. 5 A 2. 3	44. 8 E	32. 5	18. 0 C			
Approach LOS Intersct. Delay	6. 7		A		D D				
		Ste	o 1: MOVEN	MENT PRIO	RI TI ES				

Major Street: Approach Priority Movement	1U U	EastBou 1 L	nd 2 T	3 R		4U U	WestBo 4 L	ound 5 T	6 R
Minor Street: Approach Priority Movement		NorthBo 7 L	8 T	9 R			Southl 10 L	Bound 11 T	12 R
Maj or Street:	Step			ND VOLUME	S AND FLO	W RATES			
Approach Movement	1U U	EastBou 1 L	nd 2 T	3 R		4U U	WestBo 4 L	ound 5 T	6 R
Volume, V(x) Flow Rate, v(x)			273 310	63 72			89 101	280 318	
Minor Street: Approach Movement		NorthBo 7 L	und 8 T	9 R			Southl 10 L	Bound 11 T	12 R
Volume, V(x) Flow Rate, v(x)		82 93		69 78					
Mail and Changet		Step	3: CONFL	ICTING FL	OW RATES_				
Major Street: Approach Movement	1U U	EastBou 1 L	nd 2 T	3 R		4U U	WestBo 4 L	ound 5 T	6 R
Flow Rate, v(x) Conflicting Flow,v(c,x)			310	72			101 571	318	
Minor Street: Approach Movement		NorthBo 7 L	und 8 T	9 R	[Southl 10 L	Bound 11 T	12 R
Flow Rate, v(x) Conflicting Flow, v(c,x)		93 1135		78 615					
	Step	4: CRITIO	CAL HEADW	AYS and F	OLLOW-UP	HEADWAYS_			
CRITICAL HEADWAYS Approach EB		WB			orthBound			SouthBound	10
Movement 1U U	1 L	4U U	4 L	7 L	8 T	9 R	10 L	11 T	12 R
t(c, base) Single Stage Stage Stage Stage t(c, HV) P(HV) t(c, G)			4. 1 1. 0 0. 05 0. 0	7. 1 1. 0 0. 02 0. 2		6. 2 1. 0 0. 07 0. 1			
t(3, LT) t(c) Single Stage Stage I Stage II			0. 0 4. 15	0. 7 6. 42		0. 0 6. 27			
FOLLOW-UP HEADWAYS Approach EB Movement 1U U	1 L	WB 4U U	4 L	7 L	orthBound 8 T	9 R	10 L	SouthBound 11 T	12 R
t(f,base) t(f,HV) P(HV) t(f)			2. 2 0. 9 0. 05 2. 24	3. 5 0. 9 0. 02 3. 52		3. 3 0. 9 0. 07 3. 36			
NO UPSTREAM SIGNAL EFFECT	C DDECENIT	Step	5: POTE	NTIAL CAP	ACITIES				
Approach EB Movement 1U U	1 L	WB 4U U	4 L	No 7 L	orthBound 8 T	9 R	10 L	SouthBound 11 T	12 R
v(c, x)			571	1135		615			

t(c, x)	4. 15	6. 42	6. 27
t(f, x)	2. 24	3. 52	3. 36
c(p, x)	989	224	483

Steps (6 - 9: MOVEME	NT CAPACITIES_			
Pedestrian Impedance Approach Movement	EB 13	WB 14		NB 15	SB 16
Pedestrian Flow Rate, v(x) Lane Width, w	80 12.0	80 12. 0		189 12. 0	0
Walking Speed, S(p) Pedestrian Blockage Factor, f(pb)	3. 5 0. 011	3. 5 0. 195		3. 5 0. 086	
Major-Street Left-Turn Movement		1		4	
Conflicting Flow, v(c,x) Potential Capacity, c(p,x) Pedestrian Impedance Factor, p(p,x) Movement Capacity, c(m,x) Probability of Queue-free State, p(0,j) Major L-Shared Prob. Q-free St., p*(0,j)				571 989 0. 914 904 0. 888 0. 888	
Minor-Street Right-Turn Movement		9		12	
Conflicting Flow, v(c,x) Potential Capacity, c(p,x) Pedestrian Impedance Factor, p(p,x) Movement Capacity, c(m,x) Probability of Queue-free State, p(0,j)		615 483 0. 736 355 0. 780			
Major-Street U-turn Movement		1U		4U	
Conflicting Flow, v(c,x) Potential Capacity, c(p,x) Capacity Adjustment Factor, f(x) Movement Capacity, c(m,x) Shared L/U Capacity, c(SH) Probability of Queue-free State, p(0,j)					
Minor-Street Through Movement		8		11	
Conflicting Flow, v(c,x) Potential Capacity, c(p,x) Pedestrian Impedance Factor, p(p,x) Capacity Adjustment Factor, f(x) Movement Capacity, c(m,x) Probability of Queue-free State, p(0,j)					
Minor-Street Left-Turn Movement		7		10	
Conflicting Flow, v(c,x) Potential Capacity, c(p,x) Pedestrian Impedance Factor, p(p,x) Major L, Minor T Adj. Imp. Factor, p" Major L, Minor T Impedance Factor, p' Capacity Adjustment Factor, f(p,I) Movement Capacity, c(m,x)		1135 224 0. 904 0. 888 180			
S	tep 11: CONTR	OL DELAY			
CONTROL DELAY TO RANK 2 THROUGH 4 MOVEMENTS Approach EB WB Movement 1U 1 4U U L U	S 4 7 L L	NorthBound 8 T	9 R	South 10 11 L T	
Flow Rate Movement Cap. Lane Config. Shared Cap. Control Delay	101 93 904 18 L L 904 18 9.5 44	0	78 355 R 355 18. 0		
Steps 12 - 13: APPROACH/IN	TERSECTION CO		d 95% QUEL		
Approach EB WB Movement 1U 1 4U Lane Config.	4 7 L L	NorthBound 8	9 R	South 10 11	
Flow Rate Lane Capacity v/c	101 93 904 18 0. 11 0.		78 355 0. 22		· · · · · · · · · · · · · · · · · · ·
95% Queue Leng. Control Delay	0.4 2.		0. 22 0. 8 18. 0		

A 2. 3 A E

32.5 D

6. 7

This TWSC text report was created on 06/01/2016 16:59:53

File Name: Analyst: Agency/Co.: Date Performed: Time Analyzed: Jurisdiction: Analysis Year: Project Description: Units: Intersection Name: Major Street Direction: East/West Street Name: North/South Street Name: Analysis Time Period (hrs	CC EI 5, AI E, 20 E, U. E5 TC	uture Trafollette Fr El /24/2016 M Peak Hou ASD #131 D18 AHS Expans S. Custom AHS - Drivast-West th Avenue Dmcat Lane 25	ohlich ar sion aary eway 1	Peak Hou	r - 75%				
Major Street: Approach		EastBou		s and Auj	23 tillerit3_		WestBou	ınd	
Movement	1U U	1 L	2 T	3 R		4U U	4 L	5 T	6 R
Vol ume			367	162			163	226	
Peak Hour Factor, PHF Hourly Flow Rate, HFR			442	195	0. 83		196	272	
Percent Heavy Vehicles Number of Lanes Lane Configuration Median Type	0	0	1	O TR	Undi vi d	0 ed	1 1 L	1 T	0
Median Storage RT channelized? Left-Turn Lane Storage Upstream Signal?				No	Not Pre	sent	3		No
Minor street:		Nth D					C		
Approach Movement		NorthBo 7 L	una 8 T	9 R			SouthBo 10 L	und 11 T	12 R
Volume Peak Hour Factor, PHF		110		48	0. 83				
Hourly Flow Rate, HFR Percent Heavy Vehicles		133 1		58 3	0.03				
Number of Lanes Lane Configuration		1	0	1 R			0	0	0
RT channelized? Flared Approach/Storage Percent Grade		No	/ 0	No			No	/	No
		Pedestr	ian Volum	nes and A	djustment	S			
Approach Movement			EB 13		WB 14		NB 15		SB 16
Flow (ped/hr) Lane Width (ft) Walking Speed (ft/sec) Pedestrian Blockage Facto	or, f(pb)		152 12. 0 3. 5 0. 098		152 12. 0 3. 5 0. 001		91 12. 0 3. 5 0. 004		0
Annuarah	De	elay, Queu	ie Length,			vi ce			
Approach EB Movement 1U Lane Config.	1	WB 4U	4 L	No 7 L	rthBound 8	9 R	10	outhBound 11	12
Flow Rate Lane Capacity v/c 95% Queue Leng. Control Delay LOS			196 867 0. 23 0. 9 10. 4 B	133 100 1. 33 9. 4 278. 0	100 4	58 391 0. 15 0. 5 15. 8 C			
Approach Delay Approach LOS Intersct. Delay	30. 8		4. 3 A		198. 4 F				
,		C+~~	. 1. MOV/E	MENT DDIO	OI TI EC				
		step	, I. WIOVEN	MENI FRIU	VITTES				

Major Street: Approach Priority Movement	1U U	EastBou 1 L	nd 2 T	3 R		4U U	WestBo 4 L	ound 5 T	6 R
Minor Street: Approach Priority Movement		NorthBo 7 L	8 T	9 R			South 10 L	Bound 11 T	12 R
Maj or Street:	Step			AND VOLUME	ES AND FLO	W RATES			
Approach Movement	1U U	EastBou 1 L	nd 2 T	3 R		4U U	WestBo 4 L	ound 5 T	6 R
Volume, V(x) Flow Rate, v(x)			367 442	162 195			163 196	226 272	
Minor Street: Approach Movement		NorthBo 7 L	und 8 T	9 R			South 10 L	Bound 11 T	12 R
Volume, V(x) Flow Rate, v(x)		110 133		48 58					
Major Street:		Step	3: CONFL	ICTING FL	_OW RATES_				
Approach Movement	1U U	EastBou 1 L	nd 2 T	3 R		4U U	WestBo 4 L	ound 5 T	6 R
Flow Rate, v(x) Conflicting Flow,v(c,x)			442	195			196 728	272	
Minor Street: Approach Movement		NorthBo 7 L	und 8 T	9 R			South 10 L	Bound 11 T	12 R
Flow Rate, v(x) Conflicting Flow, v(c,x)		133 1446		58 782					
	Step	4: CRITIO	CAL HEADW	IAYS and F	FOLLOW-UP	HEADWAYS <u>.</u>			
CRITICAL HEADWAYS Approach EB		WB			orthBound			SouthBound	10
Movement 1U U	1 L	4U U	4 L	7 L	8 T	9 R	10 L	11 T	12 R
t(c, base) Single Stage Stage I Stage II t(c, HV)			4. 1	7. 1		6. 2			
P(HV) t(c,G)			0. 01 0. 0	0. 01 0. 2		0. 03 0. 1			
G t (3, LT)			0 0. 0	0 0. 7		0 0. 0			
t(c) Single Stage Stage I Stage II			4. 13	6. 43		6. 23			
FOLLOW-UP HEADWAYS Approach EB Movement 1U U	1 L	WB 4U U	4 L	No 7 L	orthBound 8 T	9 R	10 L	SouthBound 11 T	12 R
t(f, base) t(f, HV) P(HV) t(f)			2. 2 0. 9 0. 01 2. 23	3. 5 0. 9 0. 01 3. 53		3. 3 0. 9 0. 03 3. 33			
		Ste	5: POTE	ENTIAL CAF	PACITIES				
NO UPSTREAM SIGNAL EFFEC Approach EB		T WB			orthBound		(SouthBound	
Movement 1U U	1 L	4U U	4 L	7 L	8 T	9 R	10 L	11 T	12 R
v(c, x)			728	1446		782			

t(c, x)	4. 13	6. 43	6. 23
t (c, x) t (f, x) c (p, x)	2. 23	3. 53	3. 33
c(p, x)	870	144	393

Steps	6 - 9: MOVE	MENT CAPACITIES_			
Pedestrian Impedance Approach Movement	EB 13	WB 14		NB 15	SB 16
Pedestrian Flow Rate, v(x) Lane Width, w	152 12. 0	152 12. 0		91 I2. 0	0
Walking Speed, S(p) Pedestrian Blockage Factor, f(pb)	3. 5 0. 098	3. 5 0. 001		3. 5). 004	
Major-Street Left-Turn Movement		1	4	1	
Conflicting Flow, v(c,x) Potential Capacity, c(p,x) Pedestrian Impedance Factor, p(p,x) Movement Capacity, c(m,x) Probability of Queue-free State, p(0,j) Major L-Shared Prob. Q-free St., p*(0,j)			8 8 0	728 370). 996 367). 774). 774	
Minor-Street Right-Turn Movement		9	1	12	
Conflicting Flow, v(c,x) Potential Capacity, c(p,x) Pedestrian Impedance Factor, p(p,x) Movement Capacity, c(m,x) Probability of Queue-free State, p(0,j)		782 393 0. 995 391 0. 852			
Major-Street U-turn Movement		1U	4	1U	
Conflicting Flow, v(c,x) Potential Capacity, c(p,x) Capacity Adjustment Factor, f(x) Movement Capacity, c(m,x) Shared L/U Capacity, c(SH) Probability of Queue-free State, p(0,j)					
Minor-Street Through Movement		8	1	11	
Conflicting Flow, v(c,x) Potential Capacity, c(p,x) Pedestrian Impedance Factor, p(p,x) Capacity Adjustment Factor, f(x) Movement Capacity, c(m,x) Probability of Queue-free State, p(0,j)					
Minor-Street Left-Turn Movement		7	1	10	
Conflicting Flow, v(c,x) Potential Capacity, c(p,x) Pedestrian Impedance Factor, p(p,x) Major L, Minor T Adj. Imp. Factor, p" Major L, Minor T Impedance Factor, p' Capacity Adjustment Factor, f(p,l) Movement Capacity, c(m,x)		1446 144 0. 898 0. 774 100			
S	step 11: CON	TROL DELAY			
CONTROL DELAY TO RANK 2 THROUGH 4 MOVEMENT Approach EB WB Movement 1U 1 4U U L U	4	NorthBound 7 8 L T	9 1 R L	SouthBound 10 11 T	12 R
Flow Rate Movement Cap. Lane Config. Shared Cap. Control Delay	867 L 867	133 100 L 100 278. 0	58 391 R 391 15.8		
Steps 12 - 13: APPROACH/IN	ITERSECTI ON		d 95% QUEUE		
Approach EB WB Movement 1U 1 4U Lane Config.	4 L	NorthBound 7 8 L	9 1 R	SouthBound 10 11	12
Flow Rate Lane Capacity v/c	867	133 100 1. 33	58 391 0. 15		
95% Queue Leng. Control Delay	0. 9	9. 4 278. 0	0. 13 0. 5 15. 8		

B 4. 3 A

F

198. 4 F С

30.8

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File Name: Analyst: Agency/Co.: Date Performed: Time Analyzed: Jurisdiction: Analysis Year: Project Description: Units: Intersection Name: Major Street Direction: East/West Street Name: North/South Street Name: Analysis Time Period (hrs	CC EI 5, Pl E, 20 E, U. Es 5	uture Trafollette FrEI /24/2016 W Peak Hou ASD #131 D18 AHS Expans S. Custon AHS - Driv ast-West th Avenue Dmcat Lane	rohlich ur sion nary veway 1	Peak Hou	r - 75%				
Major Street:			e Volumes	s and Adji	ustments_		Woot Po	und	
Approach Movement	1U U	EastBou 1	2 T	3 R		4U U	WestBo	5 T	6
Volume	U 						92		R
Peak Hour Factor, PHF Hourly Flow Rate, HFR			285 324	66 75	0.88		92 105	304 345	
Percent Heavy Vehicles Number of Lanes	0	0	1	0		0	5 1	1	0
Lane Configuration	U	U	'	TR	Undi vi d		Ĺ	τ̈́	U
Median Type Median Storage RT channelized?				No	ondi vi c	ieu			No
Left-Turn Lane Storage Upstream Signal?				NO	Not Pre	sont	3		NO
Mi nor street:					NOL FIE				
Approach Movement		NorthBo 7	und 8	9	1		SouthBo 10	ound 11	12
Movement		Ĺ	T	R			L	Ť'	R
Volume Peak Hour Factor, PHF		89		76	0. 88				
Hourly Flow Rate, HFR		101		86 7	0. 66				
Percent Heavy Vehicles Number of Lanes		2 1	0	1			0	0	0
Lane Configuration RT channelized?		L N-	,	R No			N =	,	No
Flared Approach/Storage Percent Grade		No	0				No	/	
		Pedestr	rian Volum	nes and A	diustment	:S			
Approach Movement			EB 13		WB 14		NB 15		SB 16
Flow (ped/hr)			80		80		189		0
Lane Width (ft) Walking Speed (ft/sec)			12. 0 3. 5		12. 0 3. 5		12. 0 3. 5		J
Pedestri an Blockage Facto	or, f(pb)		0. 011		0. 195		0. 086		
	De	elay, Queu	ue Length,			vi ce			
Approach EB Movement 1U Lane Config.	1	WB 4U	4 L	No 7 L	rthBound 8	9 R	10	outhBound 11	12
Flow Rate Lane Capacity			105 891	101 166		86 348			
v/c			0. 12	0. 61 3. 3		0. 25			
95% Queue Leng. Control Delay			0. 4 9. 6	55. 5		1. 0 18. 7			
LOS Approach Delay			A 2. 2	F	<u>3</u> 8. 6	С			
Approach LOS Intersct. Delay	7. 9		Α		E				
		Ster	o 1: MOVEN	MENT PRIN	RITLES				
									

Major Street: Approach Priority Movement	1U U	EastBo 1 L	ound 2 T	3 R		4U U	WestE 4 L	Bound 5 T	6 R
Minor Street: Approach Priority Movement	6.1	NorthE 7 L	8 T	9 R		W DATES	South 10 L	Bound 11 T	12 R
Major Street:	Ste	•		AND VOLUM	ES AND FLO	W RAIES_			
Approach Movement	1U U	EastBo 1 L	ound 2 T	3 R		4U U	WestE 4 L	Sound 5 T	6 R
Volume, $V(x)$ Flow Rate, $V(x)$			285 324	66 75			92 105	304 345	
Minor Street: Approach Movement		NorthB 7 L	Sound 8 T	9 R			South 10 L	nBound 11 T	12 R
Volume, V(x) Flow Rate, v(x)		89 101		76 86					
Major Street:		Ste	p 3: CONF	LICTING F	LOW RATES_				
Approach Movement	1U U	EastBo 1 L	2 T	3 R		4U U	WestE 4 L	5 T	6 R
Flow Rate, v(x) Conflicting Flow, v(c, x)			324	75			105 588	345	
Minor Street: Approach Movement		NorthB 7 L	Sound 8 T	9 R			South 10 L	Bound 11 T	12 R
Flow Rate, $v(x)$ Conflicting Flow, $v(c, x)$)	101 1186		86 630					
	Stei	n 4: CRIT	ICAL HEAD	WAYS and	FOLLOW-UP	HFADWAYS			
CRITICAL HEADWAYS Approach E		WE			orthBound			SouthBound	
Movement 1U U	1 L	4U U	4 L	7 L	8 T	9 R	10 L	11 T	12 R
t(c, base) Single Stage Stage I Stage II			4. 1	7. 1		6. 2			
t(c,HV) P(HV) t(c,G) G			1. 0 0. 05 0. 0 0	1. 0 0. 02 0. 2 0		1. 0 0. 07 0. 1 0			
t(3, LT) t(c) Single Stage Stage I Stage II			0. 0 4. 15	0. 7 6. 42		0. 0 6. 27			
FOLLOW-UP HEADWAYS Approach	 3			N	orthBound			SouthBound	
Movement 1U U	1 L	4U U	4 L	7 L	8 T	9 R	10 L	11 T	12 R
t(f,base) t(f,HV) P(HV) t(f)			2. 2 0. 9 0. 05 2. 24	3. 5 0. 9 0. 02 3. 52		3. 3 0. 9 0. 07 3. 36			
NO UPSTREAM SIGNAL EFFE	TS DDESE	St	ep 5: P0T	ENTIAL CA	PACITIES				
NO UPSIKEAW SIGNAL EFFE	> PKE >EI	N I							
Approach ER Movement 1U U		WE 4U U	4 L	7 L	orthBound 8 T	9 R	10 L	SouthBound 11 T	12 R

t(c, x) t(f, x) c(p, x)	4. 15 2. 24 974	3. 52	6. 27 3. 36 473	
Steps	s 6 - 9: MC	OVEMENT CAPACITIES		
Pedestrian Impedance Approach Movement	EB 13	WB 14	NB 15	SB 16
Pedestrian Flow Rate, v(x) Lane Width, w Walking Speed, S(p) Pedestrian Blockage Factor, f(pb)	80 12. 0 3. 5 0. 011	80 12. 0 3. 5 0. 195	189 12.0 3.5 0.086	0
Major-Street Left-Turn Movement		1	4	
Conflicting Flow, v(c,x) Potential Capacity, c(p,x) Pedestrian Impedance Factor, p(p,x) Movement Capacity, c(m,x) Probability of Queue-free State, p(0,j) Major L-Shared Prob. Q-free St., p*(0,j)			588 974 0. 914 891 0. 882 0. 882	
Minor-Street Right-Turn Movement		9	12	
Conflicting Flow, v(c,x) Potential Capacity, c(p,x) Pedestrian Impedance Factor, p(p,x) Movement Capacity, c(m,x) Probability of Queue-free State, p(0,j)		630 473 0. 736 348 0. 753		
Major-Street U-turn Movement		1U	4U	
Conflicting Flow, v(c,x) Potential Capacity, c(p,x) Capacity Adjustment Factor, f(x) Movement Capacity, c(m,x)				

Shared L/U Capacity, c(SH) Probability of Queue-free State, p(0,j)

Minor-Street Through Movement 8 11

Conflicting Flow, v(c,x)
Potential Capacity, c(p,x)
Pedestrian Impedance Factor, p(p,x)
Capacity Adjustment Factor, f(x)
Movement Capacity, c(m,x)
Probability of Queue-free State, p(0,j)

7 10	
1186	
208	
0. 904	
0. 882	
166	
	208 0. 904 0. 882

Step 11: CONTROL DELAY

				Step ii.	CONTINUE D	LL/\ I				
CONTROL DELAY	TO RANK 2	THROUGH	4 MOVEMEN	TS .						
Approach	EB	3	WI	3	N	lorthBound	d		SouthBound	d
Movement	1U	1	4U	4	7	8	9	10	11	12
	U	L	U	Ĺ	L	Ť	R	L	Т	R
Flow Rate				105	101		86			
Movement Cap.				891	166		348			
Lane Config.				L	L.		R			
Shared Cap.				891	166_		348_			
Control Delay				9. 6	55. 5		18. 7			

Approach Movement Lane Config.	_Steps 12 EB 1U	- 13: 1	APPROACH/I N WB 4U	TERSECTI ON 4 L		OL DELAY and NorthBound 8	95% 9 R	QUEUE LENGTH Soi 10	S_uthBound 11	12
Flow Rate Lane Capacity v/c 95% Queue Leng. Control Delay				105 891 0. 12 0. 4 9. 6	101 166 0. 61 3. 3 55. 5		86 348 0. 25 1. 0 18. 7			

A F 2. 2 A

C 38. 6 E

7. 9

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TWO-WAY STOP CONTROL (TWSC) Analysis File Name: Analyst: Collette Frohlich Agency/Co.: EEI Date Performed: 5/24/2016 Time Analyzed: Jurisdiction: Analysis Year: Project Description: Units: U									
Vehicle Volumes and Adjustments Major Street:									
Approach Movement	1U	EastBour 1	nd 2	2	1	4U	WestBo		6
Movement	Ü	Ĺ	T	3 R		U	Ĺ	5 T	6 R
Volume Peak Hour Factor, PHF			342	150	0. 83		152	213	
Hourly Flow Rate, HFR Percent Heavy Vehicles			412	181	0. 03		183 1	257	
Number of Lanes Lane Configuration Median Type	0	0	1	0 TR	Left Or	0 nl y	1 L	1 T	0
Median Storage RT channelized? Left-Turn Lane Storage Upstream Signal?				No	2 Not Pre	esent	3		No
Minor street:									
Approach Movement		NorthBou 7 L	ind 8 T	9 R			SouthBo 10 L	ound 11 T	12 R
Volume Peak Hour Factor, PHF		105		45	0. 83				
Hourly Flow Rate, HFR Percent Heavy Vehicles		127 1		54 3	0. 63				
Number of Lanes		1	0	1			0	0	0
Lane Configuration RT channelized? Flared Approach/Storage Percent Grade		No	/ 0	R No			No	/	No
		Dadastr	ian Volum	nes and A	li ustmant	·c			
Approach Movement		r cuesti	EB 13	ics and AC	WB 14	. J	NB 15		SB 16
Flow (ped/hr) Lane Width (ft) Walking Speed (ft/sec) Pedestrian Blockage Facto	r, f(pb)		152 12.0 3.5 0.098		152 12. 0 3. 5 0. 001		91 12. 0 3. 5 0. 004		0
	De	lay, Queu	e Length,			vi ce			
Approach EB Movement 1U Lane Config.	1	WB 4U	4 L	No 7 L	rthBound 8	9 R	10 S	outhBound 11	12
Flow Rate Lane Capacity v/c 95% Queue Leng.			183 900 0. 20 0. 8	127 205 0. 62 3. 6		54 410 0. 13 0. 5			
Control Delay LOS			10. 0 B	47. 4 E		15. 1 C			
Approach Delay Approach LOS Intersct. Delay	7. 1		4. 2 A		37. 8 E				
Step 1: MOVEMENT PRIORITIES									

Major Street: Approach Priority Movement	1U U	EastBoui 1 L	nd 2 T	3 R		4U U	West 4 L	Bound 5 T	6 R
Minor Street: Approach Priority Movement		NorthBoo 7 L	8 T	9 R			Sout 10 L	hBound 11 T	12 R
Major Street: Approach Movement	Ste 1U	p 2: MOVEM EastBour 1		ND VOLUMI	ES AND FLO	N RATES 4U	West	Bound 5	6
Volume, V(x)	Ü	Ĺ 	T 342	R 150		υ ¯ 	L 152	T 213	Ř
Flow Rate, v(x) Minor Street:			412	181 			183	257	
Approach Movement		NorthBoo 7 L	und 8 T	9 R			Sout 10 L	hBound 11 T	12 R
Volume, $V(x)$ Flow Rate, $V(x)$		105 127		45 54					
Major Street:		Step	3: CONFL	ICTING F	LOW RATES				
Approach Movement	1U U	EastBoui 1 L	nd 2 T	3 R		4U U	West 4 L	Bound 5 T	6 R
Flow Rate, v(x) Conflicting Flow, v(c, x)	-		412	181		-	183 684	257	
Minor Street: Approach Movement		NorthBoo 7 L	und 8 T	9 R			Sout 10 L	hBound 11 T	12 R
Flow Rate, v(x) Conflicting Flow, v(c,x)		127 1369		54 746					
Minor-Street Left-Turn Mo	vements			7			10		
Conflicting Flow Single Stage, v(c,x) Stage I, v(c,I,x) Stage II, v(c,II,x)				1369 594 775					
CRITICAL HEADWAYS	Step		CAL HEADW		FOLLOW-UP I	HEADWAYS_			
Approach EB Movement 1U U	1 L	WB 4U U	4 L	7 L	orthBound 8 T	9 R	10 L	SouthBound 11 T	12 R
t(c, base) Single Stage Stage I			4. 1	7. 1 6. 1		6. 2			
Stağe II t(c,HV) P(HV)			1. 0 0. 01	6. 1 1. 0 0. 01		1. 0 0. 03			
t (c, 6) G t (3, LT)			0. 0 0 0. 0	0. 2 0 0. 7		0. 1 0 0. 0			
t(c) Single Stage Stage I Stage II			4. 13	6. 43 5. 43 5. 43		6. 23			
FOLLOW-UP HEADWAYS Approach EB Movement 1U U	 1 L	WB 4U U	4 L	7 L	orthBound 8 T	9 R	10 L	SouthBound 11 T	12 R
t(f, base) t(f, HV) P(HV) t(f)	-		2. 2 0. 9 0. 01 2. 23	3. 5 0. 9 0. 01 3. 53	·	3. 3 0. 9 0. 03 3. 33		·	

NO UPSTREAM SIGNA Approach Movement	L EFFECTS EB 1U U	PRESEN 1 L	T WB 4U U	4 L	No 7 L	orthBound 8 T	9 R	10 L	SouthBound 11 T	12 R
v(c, x) t(c, x) t(f, x) c(p, x)				684 4. 13 2. 23 904	1369 6. 43 3. 53 161		746 6. 23 3. 33 412			
Minor-Street Left	Movement	S			North Stagel			Sou Stagel	thBound 10 StageII	
Conflicting Flow Critical Headway, Follow-up Headway Potential Capacit	t(c, x) , t(f, x)				594 5. 43 3. 53 549	775 5. 43 3. 53 452				
Dodootni on Impodo			Steps	6 - 9: MO	VEMENT CA	PACITIES_				
Pedestrian Impeda Approach Movement	nce			EB 13		WB 14		NB 15		SB 16
Pedestrian Flow R Lane Width, w Walking Speed, S(Pedestrian Blocka	p)			152 12. 0 3. 5 0. 098		152 12. 0 3. 5 0. 001		91 12. 0 3. 5 0. 004		0
Major-Street Left	-Turn Mov	ement				1		4		
Conflicting Flow, Potential Capacit Pedestrian Impeda Movement Capacity Probability of Qu Major L-Shared Pr	y, c(p,x) nce Facto , c(m,x) eue-free	r, p(p, State,	p(0, j)					684 904 0. 996 900 0. 797 0. 797		
Minor-Street Righ	it-Turn Mo	vement				9		12		
Conflicting Flow, Potential Capacit Pedestrian Impeda Movement Capacity Probability of Qu	y, c(p,x) nce Facto , c(m,x)	r, p(p,				746 412 0. 995 410 0. 868				
Major-Street U-tu	rn Moveme	nt				1U		4U		
Conflicting Flow, Potential Capacit Capacity Adjustme Movement Capacity Shared L/U Capaci Probability of Qu	y, c(p,x) nt Factor , c(m,x) ty, c(SH)	, f(x)	p(0,j)							
Minor-Street Thro	ugh Movem	ent				8		11		
Conflicting Flow, Potential Capacit Pedestrian Impeda Capacity Adjustme Movement Capacity Probability of Qu	y, c(p,x) nce Facto nt Factor , c(m,x)	r, p(p, , f(x)								
Minor-Street Left	-Turn Mov	ement				7		10		
Conflicting Flow, Potential Capacit Pedestrian Impeda Major L, Minor T Major L, Minor T Capacity Adjustme	y, c(p,x) nce Facto Adj. Imp. Impedance nt Factor	r, p(p, Factor Factor	, p" , p'			1369 161 0. 898				
Movement Capacity Capacity for Two- Minor-Street Left	Stage Mov					115 		10		
Part 1 - Stage I Conflicting Flow, Potential Capacit Pedestrian Impeda Capacity Adjustme	v(c,x) y, c(p,x) nce Facto	r, p(p,				594 549 0. 996 0. 794		-		

8

37. 8 E R

54 410

0.13

15.1

0.5

С

10

11

12

1U

Movement

Flow Rate

v/c

LOS

Lane Config.

Lane Capacity

95% Queue Leng.

Control Delay

Approach Delay Approach LOS

Intersct. Delay

1

7.1

4U

183

900

0.20

10.0

0.8

B 4. 2

Α

127

205

0.62

47.4

3.6

Ε

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TWO-WAY STOP CONTROL (TWSC) Analysis File Name: Analyst: Agency/Co.: Date Performed: Time Analyzed: Jurisdiction: Analysis Year: Project Description: Units: Intersection Name: East/West Street Name: North/South Street Name: Analysis Time Period (hrs): TWO-WAY STOP CONTROL (TWSC) Analysis Future Traffic - PM Peak Hour Collette Frohlich EEI Date Performed: 5/24/2016 EAH EASD #131 Analysis Year: 2018 Project Description: EAHS Expansion U. S. Customary Intersection Name: East-West East-West Street Name: Tomcat Lane Analysis Time Period (hrs): O. 25									
Major Street:		Vehi cl	e Volumes	and Adju	ustments_				
Approach Movement	1U	EastBour 1	nd 2	3	1	4U	WestBou 4	ind 5	6
	Ü	Ĺ	T	Ř		Ü	Ĺ	Ť	Ř
Volume Peak Hour Factor, PHF			273	63	0. 88		89	280	
Hourly Flow Rate, HFR Percent Heavy Vehicles			310	72			101 5	318	
Number of Lanes Lane Configuration Median Type	0	0	1	O TR	Left On	0 I y	1 L	1 T	0
Median Storage RT channelized? Left-Turn Lane Storage Upstream Signal?				No	2 Not Pre	sent	3		No
Minor street:									
Approach Movement		NorthBou 7 L	ınd 8 T	9 R			SouthBo 10 L	ound 11 T	12 R
Volume		82		69					
Peak Hour Factor, PHF Hourly Flow Rate, HFR		93		78	0. 88				
Percent Heavy Vehicles Number of Lanes		2 1	0	7 1			0	0	0
Lane Configuration RT channelized? Flared Approach/Storage Percent Grade		L No	/ 0	R No			No	/	No
TOTAL GLAVE									
Approach		Pedestr	EB	nes and Ad	WB	S	NB		SB
Movement			13		14		15		16
Flow (ped/hr) Lane Width (ft) Walking Speed (ft/sec) Pedestrian Blockage Factor	^, f(pb)		80 12. 0 3. 5 0. 011		80 12. 0 3. 5 0. 195		189 12. 0 3. 5 0. 086		0
	De	lay, Queu	e Length,			vi ce			
Approach EB Movement 1U Lane Config.	1	WB 4U	4 L	Noi 7 L	rthBound 8	9 R	10	outhBound 11	12
Flow Rate Lane Capacity v/c			101 904 0. 11	93 346 0. 27		78 355 0. 22			
95% Queue Leng. Control Delay LOS			0. 4 9. 5 A	1. 1 19. 2 C		0. 8 18. 0 C			
Approach Delay Approach LOS Intersct. Delay	4. 3		2. 3 A		18. 6 C				
Step 1: MOVEMENT PRIORITIES									

Major Street: Approach Priority Movement	1U U	EastBou 1 L	nd 2 T	3 R		4U U	WestB 4 L	ound 5 T	6 R
Minor Street: Approach Priority Movement		NorthBo 7 L	8 T	9 R			South 10 L	Bound 11 T	12 R
Major Street:	Ste	•		ND VOLUM	ES AND FLO	W RATES	WaatD		
Approach Movement	1U U	EastBou 1 L	2 T	3 R		4U U	WestB 4 L	5 T	6 R
Volume, V(x) Flow Rate, v(x)			273 310	63 72			89 101	280 318	
Minor Street: Approach Movement		NorthBo 7 L	und 8 T	9 R			South 10 L	Bound 11 T	12 R
Volume, V(x) Flow Rate, v(x)		82 93		69 78					
		Step	3: CONFL	ICTING F	LOW RATES				
Major Street: Approach Movement	1U U	EastBou 1 L	nd 2 T	3 R		4U U	WestB 4 L	ound 5 T	6 R
Flow Rate, v(x) Conflicting Flow, v(c, x)			310	72			101 571	318	
Minor Street: Approach Movement		NorthBo 7 L	und 8 T	9 R			South 10 L	Bound 11 T	12 R
Flow Rate, v(x) Conflicting Flow, v(c,x)		93 1135		78 615					
Minor-Street Left-Turn Mo	ovements			7			10		
Conflicting Flow Single Stage, v(c,x) Stage I, v(c,I,x) Stage II, v(c,II,x)				1135 535 600					
CRITICAL HEADWAYS	Step		CAL HEADW		FOLLOW-UP I	HEADWAYS_		C	
Approach EB Movement 1U U	1 L	WB 4U U	4 L	7 L	orthBound 8 T	9 R	10 L	SouthBound 11 T	12 R
t(c, base) Single Stage Stage I Stage II			4. 1	7. 1 6. 1 6. 1		6. 2			
t(c,HV) P(HV) t(c,G) G			1. 0 0. 05 0. 0 0	1. 0 0. 02 0. 2 0		1. 0 0. 07 0. 1 0			
t(3, LT) t(c) Single Stage Stage I Stage II			0. 0 4. 15	0. 7 6. 42 5. 42 5. 42		0. 0 6. 27			
FOLLOW-UP HEADWAYS Approach EB Movement 1U U	1 L	WB 4U U	4 L	7 L	orthBound 8 T	9 R	10 L	SouthBound 11 T	12 R
t(f,base) t(f,HV) P(HV) t(f)			2. 2 0. 9 0. 05 2. 24	3. 5 0. 9 0. 02 3. 52		3. 3 0. 9 0. 07 3. 36			
		Step	5: POTE	NTIAL CA	PACITIES				

NO UPSTREAM SIGN Approach Movement	NAL EFFECTS EB 1U U	S PRESE 1 L	NT WB	4 L	7 L	orthBound 8 T	9 R	10 L	SouthBound 11 T	12 R
v(c, x) t(c, x) t(f, x) c(p, x)				571 4. 15 2. 24 989	1135 6. 42 3. 52 224		615 6. 27 3. 36 483			
Mi nor-Street Lef	ft Movemen	ts			North Stagel	Bound 7 Stagell		Sou Stagel	thBound 10 Stagel I	
Conflicting Flow Critical Headway Follow-up Headway Potential Capaci	y, t(c,x) ay, t(f,x)				535 5. 42 3. 52 587	600 5. 42 3. 52 548				
			Steps	6 - 9: MO	VEMENT CA	APACITIES_				
Pedestrian Imped Approach Movement	dance			EB 13		WB 14		NB 15		SB 16
Pedestrian Flow Lane Width, w Walking Speed, S Pedestrian Block	S(p))	80 12. 0 3. 5 0. 011		80 12. 0 3. 5 0. 195		189 12. 0 3. 5 0. 086	,	0
Major-Street Lef	ft-Turn Mov	vement				1		4		
Conflicting Flow Potential Capaci Pedestrian Imped Movement Capacit Probability of C Major L-Shared F	ty, c(p,x) dance Facto ty, c(m,x) Dueue-free	or, p(p State,	p(0,j)					571 989 0. 914 904 0. 888 0. 888	.	
Minor-Street Rig	ght-Turn Mo	ovement				9		12		
Conflicting Flow Potential Capaci Pedestrian Imped Movement Capacit Probability of C	ty, c(p,x) dance Facto ty, c(m,x)	or, p(p				615 483 0. 736 355 0. 780				
Major-Street U-1	turn Movem	ent				1U		4U		
Conflicting Flow Potential Capaci Capacity Adjustm Movement Capacit Shared L/U Capac Probability of C	ty, c(p,x) ment Factor ty, c(m,x) city, c(SH	r, f(x))	p(0,j)							
Minor-Street Thr	ough Move	ment				8		11		
Conflicting Flow Potential Capaci Pedestrian Imped Capacity Adjustm Movement Capacit Probability of C	ty, c(p,x) dance Facto ment Factor ty, c(m,x)	or, p(p r, f(x)								
Mi nor-Street Lef	ft-Turn Mo	vement				7		10		
Conflicting Flow Potential Capaci Pedestrian Imped Major L, Minor 1 Major L, Minor 1 Capacity Adjustm Movement Capacit	ty, c(p,x) dance Facto F Adj. Imp F Impedanco ment Factor	or, p(p . Facto e Facto	r, p" r, p'			1135 224 0. 904 0. 888 180				
Capacity for Two Minor-Street Lef						7		10		
Part 1 - Stage I Conflicting Flow Potential Capaci Pedestrian Imped Capacity Adjustm	v, v(c,x) ty, c(p,x) dance Facto	or, p(p				535 587 0. 914 0. 812				

Movement Capacity, c(m,x)	477
Part 2 - Stage II Conflicting Flow, v(c,x) Potential Capacity, c(p,x) Pedestrian Impedance Factor, p(p,x) Capacity Adjustment Factor, f(p,I) Movement Capacity, c(m,x)	600 548 0. 989 0. 989 542
Part 3 - Single Stage Conflicting Flow, v(c,x) Potential Capacity, c(p,x) Pedestrian Impedance Factor, p(p,x) Major L, Minor T Adj. Imp. Factor, p" Major L, Minor T Impedance Factor, p'	1135 224 0. 904
Capacity Adjustment Factor, f(p, I) Movement Capacity, c(m, x)	0. 888 180
Results for Two-Stage Process: Adjustment Factor, a Intermediate Variable, y Total Capacity, c(T)	0. 949 1. 138 346
Step 11: CONTROL DELAY TO RANK 2 THROUGH 4 MOVEMENTS Approach EB WB Movement 1U 1 4U 4 U L U L	CONTROL DELAY SouthBound SouthBound
Flow Rate 101 Movement Cap. 904 Lane Config. L Shared Cap. 904 Control Delay 9.5	93 78 346 355 L R 346 355 19. 2 18. 0
Steps 12 - 13: APPROACH/INTERSECTAPPROACH WB	CTION CONTROL DELAY and 95% QUEUE LENGTHS
Movement 1U 1 4U 4 Lane Config. L	7 8 9 10 11 12 L R
Flow Rate Lane Capacity v/c 95% Queue Leng. Control Delay LOS Approach Delay Approach LOS Intersct. Delay 4.3	93 78 346 355 1 0.27 0.22 1.1 0.8 19.2 18.0 C 18.6

This TWSC text report was created on 06/01/2016 17:00:16

File Name: Analyst: Agency/Co.: Date Performed: Time Analyzed: Jurisdiction: Analysis Year: Project Description: Units: Intersection Name: Major Street Direction: East/West Street Name: North/South Street Name: Analysis Time Period (hrs	CC EF 5, AM E/ 20 E/ U. E2 51	uture Trafillette From Property (24/2016) If Peak Hous (24/2016) If	ohlich r ion ary eway 1	Peak Hou	- 75% 75%				
Major Street:		venici EastBour	e Volumes	and Auj	is tillerits_		WestBo	und	
Approach Movement	1U U	1 L	2 T	3 R		4U U	4 L	5 T	6 R
Vol ume			367	162			163	226	
Peak Hour Factor, PHF Hourly Flow Rate, HFR			442	195	0. 83		196	272	
Percent Heavy Vehicles Number of Lanes Lane Configuration Median Type	0	0	1	O TR	Left Or	0 il y	1 1 L	1 T	0
Median Storage RT channelized? Left-Turn Lane Storage Upstream Signal?				No	2 Not Pre	esent	3		No
Minor street:		NonthDo					CourthD		
Approach Movement		NorthBoo 7 L	na 8 T	9 R			SouthBo 10 L	ouna 11 T	12 R
Volume Peak Hour Factor, PHF Hourly Flow Rate, HFR		110 133		48 58	0. 83				
Percent Heavy Vehicles Number of Lanes		1	0	3 1			0	0	0
Lane Configuration RT channelized? Flared Approach/Storage Percent Grade		L No	/ 0	R No			No	/	No
		Pedestr	ian Volum	nes and Ad	diustment	·s			
Approach Movement			EB 13	ios and 7.	WB 14	. U	NB 15		SB 16
Flow (ped/hr) Lane Width (ft) Walking Speed (ft/sec) Pedestrian Blockage Facto	or, f(pb)		152 12.0 3.5 0.098		152 12. 0 3. 5 0. 001		91 12. 0 3. 5 0. 004		0
Approach EB Movement 1U Lane Config.	De	elay, Queu WB 4U	e Length, 4 L	and Leve No 7 L	el of Ser rthBound 8	rvi ce 9 R	10	outhBound 11	12
Flow Rate Lane Capacity v/c 95% Queue Leng. Control Delay			196 867 0. 23 0. 9 10. 4	133 178 0. 75 4. 8 68. 1		58 391 0. 15 0. 5 15. 8			
LOS Approach Delay Approach LOS Intersct. Delay	9. 3		B 4. 3 A	F	52. 2 F	С			
		Step	1: MOVEN	MENT PRIO	RI TI ES				

Major Street: Approach Priority Movement	1U U	EastBour 1 L	nd 2 T	3 R		4U U	West 4 L	Bound 5 T	6 R
Minor Street: Approach Priority Movement		NorthBou 7 L	8 T	9 R			Sout 10 L	hBound 11 T	12 R
Major Street: Approach	Ste	p 2: MOVEM EastBour		ND VOLUMI	ES AND FLOV	V RATES		Bound	
Movement	1U U	1 L	2 T	3 R		4U U	4 L	5 T	6 R
Volume, V(x) Flow Rate, v(x)			367 442	162 195			163 196	226 272	
Minor Street: Approach Movement		NorthBou 7 L	und 8 T	9 R			Sout 10 L	hBound 11 T	12 R
Volume, V(x) Flow Rate, v(x)		110 133		48 58					
Major Street:		Step	3: CONFL	ICTING F	LOW RATES_				
Approach Movement	1U U	EastBour 1 L	nd 2 T	3 R		4U U	West 4 L	Bound 5 T	6 R
Flow Rate, v(x) Conflicting Flow, v(c, x)			442	195			196 728	272	
Minor Street: Approach Movement		NorthBou 7 L	und 8 T	9 R			Sout 10 L	hBound 11 T	12 R
Flow Rate, v(x) Conflicting Flow, v(c,x)		133 1446		58 782					
Minor-Street Left-Turn Mo	vements			7			10		
Conflicting Flow Single Stage, v(c,x) Stage I, v(c,I,x) Stage II, v(c,II,x)				1446 630 816					
CRITICAL HEADWAYS	Step		AL HEADW		FOLLOW-UP I	HEADWAYS_			
Approach EB Movement 1U U	1 L	WB 4U U	4 L	7 L	orthBound 8 T	9 R	10 L	SouthBound 11 T	12 R
t(c, base) Si ngl e Stage Stage I			4. 1	7. 1 6. 1		6. 2			
Stağe II t(c,HV) P(HV)			1. 0 0. 01	6. 1 1. 0 0. 01		1. 0 0. 03			
t(c, G) G t(3, LT)			0. 0	0. 2 0		0. 1 0			
L(3, L1)			0 0	$^{\circ}$					
t(c) Single Stage Stage I Stage II			0. 0 4. 13	0. 7 6. 43 5. 43 5. 43		0. 0 6. 23			
t(c) Single Stage Stage I Stage II FOLLOW-UP HEADWAYS Approach Movement 1U	1 L	WB 4U U		6. 43 5. 43 5. 43	orthBound 8 T	6. 23	10 L	SouthBound 11 T	12 R
t(c) Single Stage Stage I Stage II FOLLOW-UP HEADWAYS Approach EB	1 L	WB 4U U	4. 13	6. 43 5. 43 5. 43		6. 23	10 L	11	12 R

O UPSTREAM SIGNAL EFFECTS PRESENT pproach EB W ovement 1U 1 4U U L U	NB 4 L	No 7 L	orthBound 8 T	9 R	10 L	SouthBound 11 T	12 R
(c, x) (c, x) (f, x) (p, x)	728 4. 13 2. 23 870	1446 6. 43 3. 53 144		782 6. 23 3. 33 393			
inor-Street Left Movements		North Stagel				thBound 10 StageII	
onflicting Flow Rate, v(c,x) ritical Headway, t(c,x) ollow-up Headway, t(f,x) otential Capacity, c(p,x)		630 5. 43 3. 53 529	816 5. 43 3. 53 433				
Step	os 6 - 9: MO'	VEMENT CA	PACITIES				
edestrian Impedance pproach ovement	EB 13		WB 14		NB 15		SB 16
edestrian Flow Rate, v(x) ane Width, w alking Speed, S(p) edestrian Blockage Factor, f(pb)	152 12. 0 3. 5 0. 098		152 12. 0 3. 5 0. 001		91 12. 0 3. 5 0. 004		0
ajor-Street Left-Turn Movement			1		4		
onflicting Flow, v(c,x) otential Capacity, c(p,x) edestrian Impedance Factor, p(p,x) ovement Capacity, c(m,x) robability of Queue-free State, p(0,j) ajor L-Shared Prob. Q-free St., p*(0,j)					728 870 0. 996 867 0. 774 0. 774		
inor-Street Right-Turn Movement			9		12		
onflicting Flow, v(c,x) otential Capacity, c(p,x) edestrian Impedance Factor, p(p,x) ovement Capacity, c(m,x) robability of Queue-free State, p(0,j)			782 393 0. 995 391 0. 852				
ajor-Street U-turn Movement			1U		4U		
onflicting Flow, v(c,x) otential Capacity, c(p,x) apacity Adjustment Factor, f(x) ovement Capacity, c(m,x) hared L/U Capacity, c(SH) robability of Queue-free State, p(0,j)							
inor-Street Through Movement			8		11		
onflicting Flow, v(c,x) otential Capacity, c(p,x) edestrian Impedance Factor, p(p,x) apacity Adjustment Factor, f(x) ovement Capacity, c(m,x) robability of Queue-free State, p(0,j)							
inor-Street Left-Turn Movement			7		10		
onflicting Flow, v(c,x) otential Capacity, c(p,x) edestrian Impedance Factor, p(p,x) ajor L, Minor T Adj. Imp. Factor, p" ajor L, Minor T Impedance Factor, p' apacity Adjustment Factor, f(p,l)			1446 144 0. 898 0. 774 100				
ovement Capacity, c(m,x) apacity for Two-Stage Movement inor-Street Left-Turn Movement			7		10		
art 1 - Stage I onflicting Flow, v(c,x) otential Capacity, c(p,x) edestrian Impedance Factor, p(p,x) apacity Adjustment Factor, f(p,I)			630 529 0. 996 0. 771				

	ty, c(m,x)				408				
Part 2 - Stage I Conflicting Flow Potential Capaci Pedestrian Imped Capacity Adjustr Movement Capacit	v, v(c,x) ty, c(p, dance Fac nent Fact	x) tor, p(or, f(p	o, x) , l)			816 433 0. 902 0. 902 390				
Part 3 - Single Conflicting Flow Potential Capaci Pedestrian Imped Major L, Minor T Major L, Minor T Capacity Adjustr	v, v(c,x) ty, c(p, dance Fac Adj. Im Impedan ment Fact	tor, p(p. Factors for factors	or, p" or, p'			1446 144 0. 898 0. 774				
Movement Capaci	ty, c(m,x)				100				
Results for Two- Adjustment Facto Intermediate Var Total Capacity,	or, ä riable, y					0. 949 3. 267 178				
			9	Step 11: C0	ONTROL I	DFI AY				
CONTROL DELAY TO			4 MOVEMEN	ΓS [·]					CourthDours	
Approach Movement	EB 1U	1	WB 4U	4	7	NorthBound	0	10	SouthBound	4.0
			10		,	8	9	10	11	12
	U	L	Ü	Ĺ	Ĺ	8 T	R	L	T	12 R
Flow Rate Movement Cap. Lane Config. Shared Cap.				196 867 L 867	133 178 L 178		58 391 R 391			
Movement Cap. Lane Config.				196 867 L	133 178 L		58 391 R			
Movement Cap. Lane Config. Shared Cap. Control Delay	U Steps 12	L	U 	L 196 867 L 867 10. 4	133 178 L 178 68. 1	T OL DELAY and	58 391 R 391 15. 8	L	T GTHS	
Movement Cap. Lane Config. Shared Cap.	U	L	U	L 196 867 L 867 10. 4	133 178 L 178 68. 1	Т	58 391 R 391 15. 8	L	Т	

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File Name: Analyst: Agency/Co.: Date Performed: Time Analyzed: Jurisdiction: Analysis Year: Project Description: Units: Intersection Name: Major Street Direction: East/West Street Name: North/South Street Name: Analysis Time Period (hrs	Cc EE 5, PM E, 20 E, U. E, 51	uture Trafillette From Property (24/2016) If Peak Hous (24/2016) If	ohlich r ion ary eway 1	Peak Hou	c - 75%				
Major Street:			e Volumes	s and Adji	ustments_		Woo+Po:	ınd	
Approach Movement	1U U	EastBour 1 L	na 2 T	3 R		4U U	WestBou 4 L	ına 5 T	6 R
Volume			285	к 			92	304	
Peak Hour Factor, PHF Hourly Flow Rate, HFR			324	75	0.88		105	345	
Percent Heavy Vehicles Number of Lanes	0	0	1	0		0	5 1	1	0
Lane Configuration Median Type	<u>~</u>	Ŭ	·	TR	Left On		Ĺ	τ̈́	Č
Median Storage RT channelized?				No	2	J			No
Left-Turn Lane Storage Upstream Signal?					Not Pre	esent	3		
Mi nor street: Approach		NorthBou	ınd				SouthBo	ound	
Movement		7 L	8 T	9 R			10 L	11 T	12 R
Volume Peak Hour Factor, PHF		89		76	0. 88				
Hourly Flow Rate, HFR Percent Heavy Vehicles		101 2		86 7	0.88				
Number of Lanes Lane Configuration		1	0	, 1 R			0	0	0
RT channelized? Flared Approach/Storage		No	/	No			No	/	No
Percent Grade		NO	Ó				NO	,	
Approach		Pedestr	ian Volum EB	nes and Ad	djustment WB	:S	NB		SB
Movement			13		14		15		16
Flow (ped/hr) Lane Width (ft)			80 12. 0		80 12. 0		189 12. 0		0
Walking Speed (ft/sec) Pedestrian Blockage Facto	or, f(pb)		3. 5 0. 011		3. 5 0. 195		3. 5 0. 086		
Ü	., .	elay, Queu		and Leve		rvi ce			
Approach EB Movement 1U Lane Config.	1	WB 4U	4 L		rthBound 8	9 R	10	outhBound 11	12
Flow Rate			105	101		86			
Lane Capacity v/c			891 0. 12	330 0. 31		348 0. 25			
95% Queue Leng. Control Delay			0. 4 9. 6	1. 3 20. 6		1. 0 18. 7			
LOS Approach Delay			A 2. 2	С	19. 7	С			
Approach LOS Intersct. Delay	4. 5		Α		С				
		Step	1: MOVEN	MENT PRIO	RI TI ES				

Major Street: Approach Priority Movement	1U U	EastBou 1 L	nd 2 T	3 R		4U U	West 4 L	Bound 5 T	6 R
Minor Street: Approach Priority Movement		NorthBo 7 L	8 T	9 R			Sout 10 L	hBound 11 T	12 R
Major Street: Approach Movement	Ste 1U U	o 2: MOVEN EastBou 1 L		.ND VOLUM 3 R	ES AND FLO	V RATES 4U U	West 4 L	Bound 5 T	6 R
Volume, V(x) Flow Rate, v(x)			285 324	66 75			92 105	304 345	
Minor Street: Approach Movement		NorthBo 7 L	und 8 T	9 R			Sout 10 L	hBound 11 T	12 R
Volume, V(x) Flow Rate, v(x)		89 101		76 86					
Major Street:		Step	3: CONFL	ICTING F	LOW RATES_				
Approach Movement	1U U	EastBou 1 L	2 T	3 R		4U U	4 L	Bound 5 T	6 R
Flow Rate, v(x) Conflicting Flow,v(c,x)			324	75			105 588	345	
Minor Street: Approach Movement		NorthBo 7 L	und 8 T	9 R			Sout 10 L	hBound 11 T	12 R
Flow Rate, v(x) Conflicting Flow, v(c,x)		101 1185		86 630					
Minor-Street Left-Turn Mc	vements			7			10		
Conflicting Flow Single Stage, v(c,x) Stage I, v(c,I,x) Stage II, v(c,II,x)				1185 550 635					
CRITICAL HEADWAYS	Step	4: CRITIC	CAL HEADW	AYS and	FOLLOW-UP I	HEADWAYS_			
Approach EB Movement 1U U	1 L	WB 4U U	4 L	7 L	orthBound 8 T	9 R	10 L	SouthBound 11 T	12 R
t(c, base) Single Stage Stage Stage t(c, HV) P(HV) t(c, G)			4. 1 1. 0 0. 05 0. 0	7. 1 6. 1 6. 1 1. 0 0. 02 0. 2 0		6. 2 1. 0 0. 07 0. 1 0			
G t(3,LT) t(c) Single Stage Stage I Stage II			0. 0 4. 15	0. 7 6. 42 5. 42 5. 42		0. 0 6. 27			
FOLLOW-UP HEADWAYS Approach EB Movement 1U U	1 L	WB 4U U	4 L	N 7 L	orthBound 8 T	9 R	10 L	SouthBound 11 T	12 R
t(f,base) t(f,HV) P(HV) t(f)			2. 2 0. 9 0. 05 2. 24	3. 5 0. 9 0. 02 3. 52		3. 3 0. 9 0. 07 3. 36			
		Step	5: P0TE	NTIAL CA	PACITIES				

NO UPSTREAM SIGN Approach Movement	NAL EFFECT EB 1U U	S PRESE 1 L	NT WB	4 L	7 L	orthBound 8 T	9 R	10 L	SouthBound 11 T	12 R
v(c, x) t(c, x) t(f, x) c(p, x)				588 4. 15 2. 24 974	1185 6. 42 3. 52 209		630 6. 27 3. 36 473			
Minor-Street Lef	ft Movemen	ts			North Stagel	Bound 7 Stagel I		Sou Stagel	ithBound 10 Stagell	
Conflicting Flow Critical Headway Follow-up Headway Potential Capaci	y, t(c,x) ay, t(f,x)				550 5. 42 3. 52 578	635 5. 42 3. 52 528				
			Steps	6 - 9: MO	VEMENT CA	APACITIES_				
Pedestrian Imped Approach Movement	dance		·	EB 13		WB 14		NB 15		SB 16
Pedestrian Flow Lane Width, w Walking Speed, S Pedestrian Block	S(p))	80 12. 0 3. 5 0. 011		80 12. 0 3. 5 0. 195		189 12. 0 3. 5 0. 086)	0
Major-Street Lef	ft-Turn Mo	vement				1		4		
Conflicting Flow Potential Capaci Pedestrian Imped Movement Capacit Probability of C Major L-Shared F	ty, c(p,x dance Fact ty, c(m,x) Queue-free	or, p(p State,	p(0,j)					588 974 0. 914 891 0. 882 0. 882	2	
Minor-Street Rig	ght-Turn M	ovement				9		12		
Conflicting Flow Potential Capaci Pedestrian Imped Movement Capacit Probability of C	ty, c(p,x dance Fact ty, c(m,x)	or, p(p				630 473 0. 736 348 0. 753				
Major-Street U-1	turn Movem	ent				1U		4U		
Conflicting Flow Potential Capaci Capacity Adjustm Movement Capacit Shared L/U Capac Probability of C	ty, c(p,x ment Facto ty, c(m,x) city, c(SH	r, f(x))	p(0,j)							
Minor-Street Thr	ough Move	ment				8		11		
Conflicting Flow Potential Capaci Pedestrian Imped Capacity Adjustm Movement Capacit Probability of C	ty, c(p,x dance Fact ment Facto ty, c(m,x)	or, p(p r, f(x)								
Mi nor-Street Lef	ft-Turn Mo	vement				7		10		
Conflicting Flow Potential Capaci Pedestrian Imped Major L, Minor T Major L, Minor T Capacity Adjustm Movement Capacit	ty, c(p,x dance Fact F Adj. Imp F Impedanc ment Facto	or, p(p . Facto e Facto	r, p" r, p'			1185 209 0. 904 0. 882 166				
Capacity for Two Minor-Street Lef						7		10		
Part 1 - Stage I Conflicting Flow Potential Capaci Pedestrian Imped Capacity Adjustm	w, v(c,x) ty, c(p,x dance Fact	or, p(p				550 578 0. 914 0. 807				

Movement Capaci	ty, c(m,	()				466				
Part 2 - Stage I Conflicting Flow Potential Capaci Pedestrian Imped Capacity Adjustr Movement Capacit	v, v(c,x) ty, c(p, dance Fac ment Fact	x) ctor, p(μ tor, f(p,				635 528 0. 989 0. 989 522				
Part 3 - Single Conflicting Flow Potential Capaci Pedestrian Impec Major L, Minor T Major L, Minor T	ν, ν(c,x) ty, c(p, dance Fac Γ Adj. Ir	x) ctor, p(μ np. Facto	or, p"			1185 209 0. 904				
Capacity Adjustr Movement Capacit	nent Fact	tor, f(p,	i)			0. 882 166				
Results for Two- Adjustment Facto Intermediate Var Total Capacity,	or, a riable, y					0. 949 1. 196 330				
CONTROL DELAY TO) DANK 2	TUDOUCU	4 MOVEMEN	Step 11: C	ONTROL D	ELAY				
CUNTRUL DELAY TO	J KANK Z	INKUUGH	4 IVIO V LIVILIN	13						
Approach Movement	EE 1U U		WE 4U U		7 L	lorthBound 8 T	9 R	10 L	SouthBound 11 T	12 R
Approach	EE 1U	3 1	WE 4U	3 4	7	8		10	11	
Approach Movement Flow Rate Movement Cap. Lane Config. Shared Cap. Control Delay	TU U U Steps 12	3 1 L 	4U U U APPROACH/I	3 4 L 105 891 L 891 9. 6	7 L 101 330 L 330 20. 6	8 T 	86 348 R 348 18. 7	10 L	11 T	
Approach Movement Flow Rate Movement Cap. Lane Config. Shared Cap.	TU U U	3 1 L 	4U U	3 4 L 105 891 L 891 9. 6	7 L 101 330 L 330 20. 6	8 T	86 348 R 348 18. 7	10 L	11 T	
Approach Movement Flow Rate Movement Cap. Lane Config. Shared Cap. Control Delay Approach Movement	Steps 12	3 1 L 2 - 13: /	4U U V APPROACH/I WE	3 4 L 105 891 L 891 9. 6 NTERSECTI 0	7 L 101 330 L 330 20. 6 N CONTRO N	8 T DL DELAY and JorthBound	86 348 R 348 18. 7	10 L	11 T T THS_ SouthBound	R