TRAFFIC IMPACT ANALYSIS FOR:

FOX RUN REDEVELOPMENT

WAUKESHA, WISCONSIN

January 16, 2020

PREPARED FOR:
Fox Run 3, LLC
c/o Somerstone, LLC
19035 West Capitol Drive, Suite 108
Brookfield, WI 53045
Contact Person: Bailey Copeland, Director of Real Estate

PREPARED BY:
Traffic Analysis & Design, Inc.
P.O. Box 128
Cedarburg, WI 53012
Phone: (262) 377-1845
Contact Persons: John A. Bieberitz, P.E., PTOE
Tammi Czewski, P.E., PTOE

TABLE OF CONTENTS

LIST OF EXHIBITS ii
LIST OF APPENDICES ii
CHAPTER I - DEVELOPMENT 1
PART A - INTRODUCTION 1
PART B - STUDY AREA 1
PART C - ON-SITE DEVELOPMENT 1
CHAPTER II – EXISTING & PROJECT TRAFFIC 3
PART A - EXISTING DATA COLLECTION 3
PART B – EXISTING & NEW DEVELOPMENT TRIPS 3
CHAPTER III - TRAFFIC OPERATIONAL ANALYSIS 5
PART A – DESCRIPTION OF LEVEL OF SERVICE 5
PART B – EXISTING TRAFFIC CAPACITY/LOS ANALYSIS 5
PART C – BUILD TRAFFIC CAPACITY/LOS ANALYSIS 5
CHAPTER IV - RECOMMENDATIONS AND CONCLUSION 7
PART A – SUMMARY/RECOMMENDATIONS 7
PART B – CONCLUSIONS 7

LIST OF EXHIBITS

Exhibit 1.....Site Location Map
Exhibit 2.....Existing Transportation System
Exhibit 3.....Conceptual Site Plan
Exhibit 4.....Year 2019 Existing Traffic Volumes
Exhibit 5.....Development Trip Generation Table
Exhibit 6a.....Development Net New Trips
Exhibit 6b.....Development Pass-by Trips
Exhibit 6c.....Development Driveway Trips
Exhibit 7.....Year 2020 Build Traffic Volumes
Exhibit 8.....Intersection Operations & Queues

LIST OF APPENDICES

Appendix A.....Traffic Counts
Appendix B.....Peak Hour Capacity Analysis – Synchro Worksheets

CHAPTER I - DEVELOPMENT

PART A - INTRODUCTION

The Fox Run Shopping Center is located in the northwest corner of the Sunset Drive (CTH DE) intersection with St. Paul Avenue/Genesee Road (CTH X) intersection in the City of Waukesha, Waukesha County, Wisconsin. The shopping center is proposed to be redeveloped with a medical clinic, bank, multi-family residential buildings, and retail building. The existing Chase Bank will remain, but all other buildings on the 13.42-acre site will be razed and replaced with the new development.

The Fox Run Shopping Center currently has one full-access stop-controlled driveway to Sunset Drive and one full-access signalized driveway to St. Paul Avenue. A new right-in/right-out only driveway to Sunset Drive is being proposed with the new redevelopment plan. This driveway would be located between the existing driveway to Sunset Drive and the St. Paul Avenue/Genesee Road intersection. The location of the proposed development with respect to the surrounding street system is shown on Exhibit 1.

This traffic impact analysis (TIA) summarizes the trip generation and traffic operations anticipated with the redevelopment of the Fox Run Shopping Center.

PART B - STUDY AREA

The study area includes the Sunset Drive intersections with the existing Fox Run Shopping Center driveway, the proposed right-in/right-out driveway, and St. Paul Parkway/Genesee Road. Exhibit 2 shows the existing transportation system (lane geometrics, traffic control, roadway speeds, etc.) of the study area intersections.

Genesee Road, also designated as County Trunk Highway (CTH) X, is a four-lane north/south divided highway on the south side of Sunset Drive, opposite St. Paul Avenue. The posted speed limit along Genesee Road is 45 miles per hour (mph). The Wisconsin Department of Transportation (WisDOT) Year 2018 average annual daily traffic (AADT) volume on Genesee Road was 17,100 vehicles per day (vpd).

St. Paul Avenue, also designated as CTH X, is a four-lane north/south divided highway on the north side of Sunset Drive, opposite Genesee Road. The posted speed limit along St. Paul Avenue is 35 mph. The WisDOT Year 2018 AADT volume on St. Paul Avenue was 23,200 vpd north of Sunset Drive. A multi-use path is present along the west side of St. Paul Avenue north of Sunset Drive.

Sunset Drive, also designated as CTH D, is a four-lane east/west divided highway that transitions to a two-lane undivided highway west of Genesee Road/St. Paul Avenue. The posted speed limit along Sunset Drive is 35 mph. The WisDOT Year 2018 AADT volumes on Sunset Drive were 11,200 vpd west of Genesee Road/St. Paul Avenue and 13,800 vpd east of Genesee Road/St. Paul Avenue. A pedestrian sidewalk is present along the south side of Sunset Drive east of Genesee Road/St. Paul Avenue.

PART C - ON-SITE DEVELOPMENT

The conceptual site plan for the proposed redevelopment of the Fox Run Shopping Center is shown on Exhibit 3. Although no specific development is shown for the land directly east of the

multi-family units, TADI was informed that a retail user, such as a pharmacy, could be constructed. Therefore, this study evaluates the following land uses on the site:

Redevelopment of the site is proposed to include the following land use types and sizes:

- Multi-Family Residential (Low-Rise) – 72 units
- Medical Clinic – 31,000 square feet
- Drive-in Bank – 2 drive-through lanes
- Pharmacy/Drugstore w/Drive-Through Window – 15,000 square feet
- Chase Bank (existing bank to remain) – 3 drive-through lanes

CHAPTER II – EXISTING & PROJECT TRAFFIC

PART A - EXISTING DATA COLLECTION

A1. Data Collection

TADI collected weekday turning movement traffic counts at the Sunset Drive intersection with the Fox Run Shopping Center driveway in early December 2019. At the same time, TADI also collected driveway counts at the internal Fox Run Shopping Center roadways to determine the weekday traffic volumes traveling to and from the existing Sentry grocery store and Chase Bank. No counts were collected for the existing strip retail building or the building to the north of Chase Bank as these are currently vacant.

TADI also collected weekday turning movement traffic counts at the Sunset Drive intersection with St. Paul Avenue/Genesee Road. This count was collected in February 2019 for a separate traffic study. All traffic counts were collected on weekdays from 6:00-9:00 a.m. and from 3:00-6:00 p.m.

Based on the turning movement counts (included in Appendix A), the weekday peak hours were identified as being from 7:00-8:00 a.m. (AM peak hour) and from 3:00-6:00 p.m. (PM peak hour). The peak hour traffic volumes were balanced between intersections and are shown on Exhibit 4.

PART B – EXISTING & NEW DEVELOPMENT TRIPS

B1. Trip Generation

The trip generation for the proposed land uses were developed using trip rates or equations as published in the Institute of Transportation Engineer's (ITE) *Trip Generation Manual, 10th Edition.* The use of trip rates or equations was based on the procedures set forth in the ITE *Trip Generation Handbook, 3rd Edition*. The trip generation table for the proposed redevelopment of the Fox Run Shopping Center is shown on Exhibit 5.

Linked trips between all existing and proposed land uses in the Fox Run Shopping Center were estimated to be 5% of the total trips on site. After linked trip reductions, the new land uses on site are expected to generate about 3,395 weekday daily trips, 220 weekday AM peak hour trips, and 335 weekday PM peak hour trips.

According to the ITE Trip Generation Handbook, the average pass-by trips for a drive-in bank are 35% and the average pass-by trips for a pharmacy is 49%. Using these pass-by trip assumptions, the redeveloped Fox Run Shopping Center site is expected to have about 840 weekday daily pass-by trips, 40 weekday AM peak hour pass-by trips, and 90 weekday PM peak hour pass-by trips. Pass-by trips are applied to the development driveways, but are not new trips to the roadway system.

The existing Sentry trips in and out of the Fox Run Shopping Center were determined from internal driveway counts collected by TADI. Based on the data collected, the Sentry grocery store generates 130 trips during the weekday AM peak hour (35 in and 95 out) and 135 trips during the weekday PM peak hour (30 in and 105 out). Since the Sentry grocery store will be razed, these trips were subtracted from the total new trips expected for the redeveloped land uses. The Fox Run Shopping Center is therefore expected to generate about 1,075 net new weekday daily trips, 50 net new weekday AM peak hour trips, and 110 net new weekday PM peak hour trips.

B2. Trip Distribution/Traffic Assignment

The trip distribution for the site was determined based on the existing traffic patterns at the study intersections. The trip distribution for the net new trips was determined based on cordon traffic volumes on Sunset Drive (west), Sunset Drive (east), St. Paul Avenue (north), and Genesee Road (south). The trip distribution for the pass-by trips was determined separately by peak hour for eastbound/westbound Sunset Drive and northbound/southbound St. Paul Avenue based on peak hour traffic volumes near the site driveways. The net new trips and pass-by trip distribution is shown on Exhibit 5.

B3. Traffic Assignment

Net new traffic and pass-by traffic expected to be generated by the proposed redevelopment was assigned to the study intersections based on the calculated directional distributions. The traffic assignments are shown on the following exhibits:

- Exhibit 6A – Development Net New Trips
- Exhibit 6B – Development Pass-by Trips
- Exhibit 6C – Development Driveway Trips

B4. Future Traffic Volumes

The development driveway trips (Exhibit 6C) were added to the year 2019 existing traffic volumes (Exhibit 4) to generate the year 2020 build traffic volumes, as shown on Exhibit 7.

CHAPTER III - TRAFFIC OPERATIONAL ANALYSIS

PART A – DESCRIPTION OF LEVEL OF SERVICE

The study area intersections were analyzed based on the procedures set forth in the *Highway Capacity Manual* (HCM), 6th Edition using the Synchro 10 traffic analysis software program. Intersection operation is defined by "level of service". Level of Service (LOS) is a quantitative measure that refers to the overall quality of flow at an intersection ranging from very good, represented by LOS 'A', to very poor, represented by LOS 'F'. For this study, LOS D was used to define acceptable peak hour operating conditions. Descriptions of the various levels of service are as follows:

LOS A is the highest level of service that can be achieved. Under this condition, intersection approaches appear quite open, turning movements are easily made, and nearly all drivers find freedom of operation. At signalized intersections, average delays are less than 10 seconds. At unsignalized intersections, average delays are less than 10 seconds.

LOS B represents stable operation. At signalized intersections, average vehicle delays are 10 to 20 seconds. At unsignalized intersections, average delays are 10 to 15 seconds.

LOS C still represents stable operation, but periodic backups of a few vehicles may develop behind turning vehicles. Most drivers begin to feel restricted, but not objectionably so. At signalized intersections, average vehicle delays are 20 to 35 seconds. At unsignalized intersections, average delays are 15 to 25 seconds.

LOS D represents increasing traffic restrictions as the intersection approaches instability. Delays to approaching vehicles may be substantial during short peaks within the peak period, but periodic clearance of long lines occurs, thus preventing excessive backups. At signalized intersections, average vehicle delays are 35 to 55 seconds. At unsignalized intersections, average delays are 25 to 35 seconds.

LOS E represents the capacity of the intersection. At signalized intersections, average vehicle delays are 55 to 80 seconds. At unsignalized intersections, average delays are 35 to 50 seconds.

LOS F represents jammed conditions where the intersection is over capacity and acceptable gaps for unsignalized intersections in the mainline traffic flow are minimal. At signalized intersections, average vehicle delays exceed 80 seconds. At unsignalized intersections, average delays exceed 50 seconds.

All capacity analysis worksheets for this study are included in Appendix B. The existing traffic LOS and queues for all analyses are shown on Exhibit 8.

PART B – EXISTING TRAFFIC CAPACITY/LOS ANALYSIS

The existing traffic analysis was conducted with the year 2019 existing traffic volumes, existing geometrics, and existing traffic control at the study intersections. As shown, all turning movements at the study intersections operate acceptably at LOS D or better during the weekday AM and PM peak hours.

PART C – BUILD TRAFFIC CAPACITY/LOS ANALYSIS

The build traffic capacity analysis represents the analysis of peak hour traffic volumes with redevelopment of the Fox Run Shopping Center. The analysis was completed with the year 2020

build traffic volumes and proposed new right-in/right-out site driveway to Sunset Drive. Using the WisDOT FDM "warrant" criteria for right-turn lanes, the westbound through and right-turn volumes at the proposed right-in/right-in out only driveway are not high enough to require a separate right-turn lane. The "warrant" sheet is included with the capacity analysis worksheets in Appendix B. With the existing geometrics and traffic control, the existing and proposed study intersections are expected to operate acceptably at LOS D or better during the weekday peak hours.

CHAPTER IV - RECOMMENDATIONS AND CONCLUSION

PART A – SUMMARY/RECOMMENDATIONS

The Fox Run shopping center is located in the northwest corner of the Sunset Drive intersection with St. Paul Avenue/Genesee Road in Waukesha, Wisconsin. The site currently has a Sentry grocery store, a Chase Bank, a vacant strip retail building and a vacant stand-alone building. When redeveloped, the Chase Bank will remain, but all other buildings will be razed to make room for multi-family apartments, a medical clinic, and a bank with drive-through lanes. One vacant outlot remains on site, which was estimated as a pharmacy for this study. At full buildout, the site is expected to generate 1,075 weekday daily net new trips, 50 weekday AM peak hour net new trips, and 110 weekday PM peak hour net new trips.

The Fox Run shopping center has existing full-access driveways to Sunset Drive and St. Paul Avenue. An additional right-in/right-out only driveway to Sunset Drive is proposed to be located approximately 435 feet east of the Fox Run full-access driveway. At this location, Sunset Drive has only one through lane in each direction, and a painted "median" that transitions into the raised median for the left-turn lanes at the St. Paul Avenue/Genesee Road intersection. If constructed, it is recommended that this median area be constructed with a raised portion through the proposed driveway to physically restrict traffic from turning left into or out of the driveway.

Based on the posted speed limit and future traffic volumes, a right-turn lane is not required at the proposed right-in/right-out driveway. Based on the proximity of the proposed driveway to the St. Paul Avenue/Genesee Road intersection and the westbound lane reduction from two-to-one, it is however recommended that at least a right-turn taper be considered for the driveway.

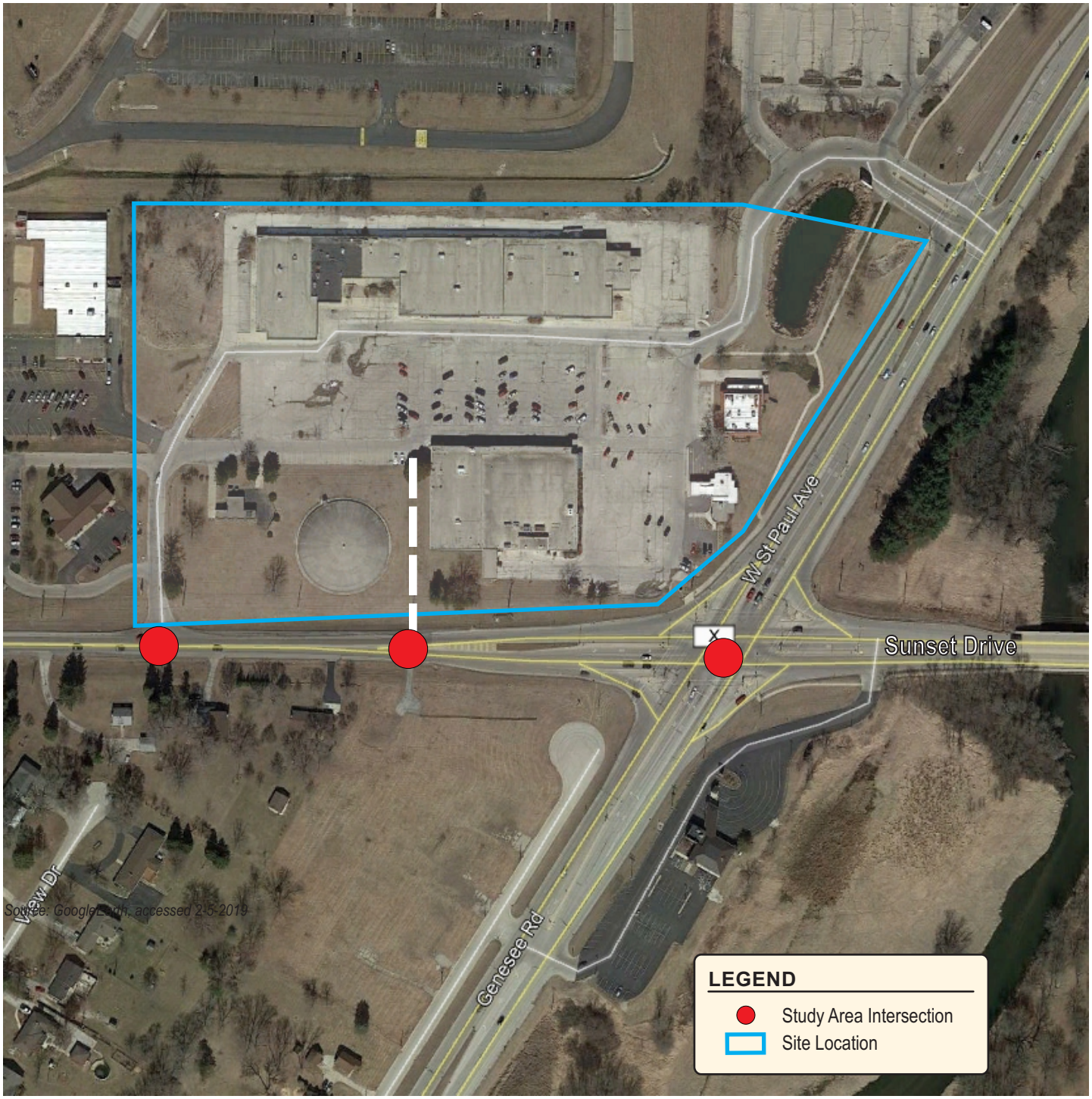
Since the proposed driveway is located on the north side of Sunset Drive, eastbound queues from the signalized intersection are not expected to impact westbound traffic flows into or out of the proposed driveway. The earth is bermed between the Fox Run shopping center and Sunset Drive. It is recommended that the grades be scaled back as needed to ensure adequate sight distance for vehicles making a right-turn out of the proposed driveway.

With the expected traffic volumes with redevelopment of the Fox Run shopping center, all study intersections are expected to operate acceptably at LOS D or better during the peak hours. Therefore, no modifications, except for those discussed above, are recommended for the study area. The recommended modifications are summarized below:

- Construct a new driveway to the Fox Run shopping center that is restricted to right-turn in, right-turn out only movements.
- Install stop-sign control for the southbound new driveway approach.
- Provide a right-turn taper on Sunset Drive for vehicles entering the proposed driveway.
- Scale back the earth near the proposed driveway as needed to provide adequate sight distance for right turns exiting the driveway.
- Install a raised median through the proposed driveway to physically prevent left-turn movements at the driveway.

PART B – CONCLUSIONS

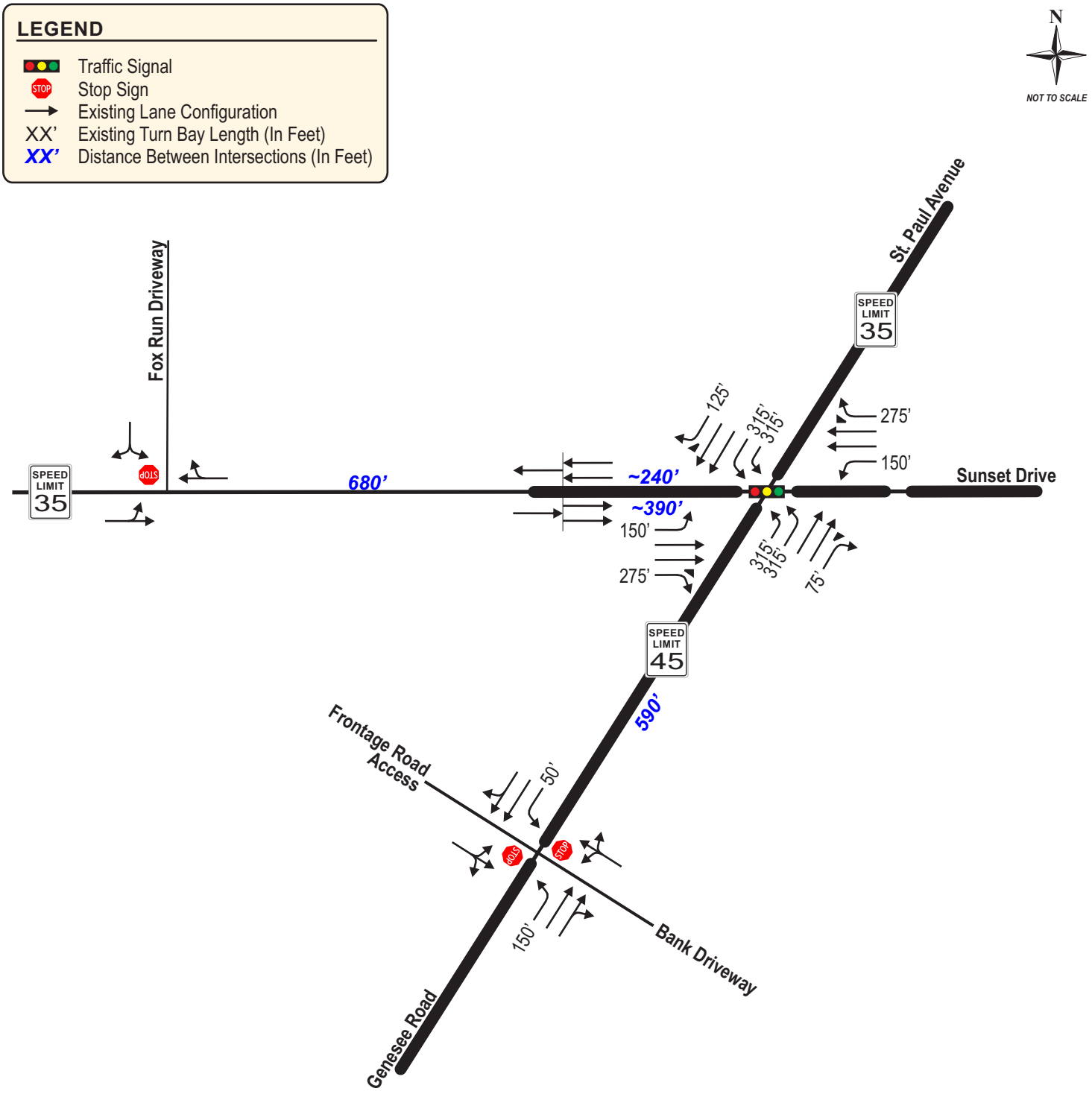
With the recommendations listed above, the study intersections are expected to operate safely and efficiently with redevelopment of the Fox Run shopping center.



TRAFFIC ANALYSIS & DESIGN, INC.
2450: 01-16-2020

EXHIBIT 1
SITE LOCATION MAP

WAUKESHA COUNTY, WISCONSIN



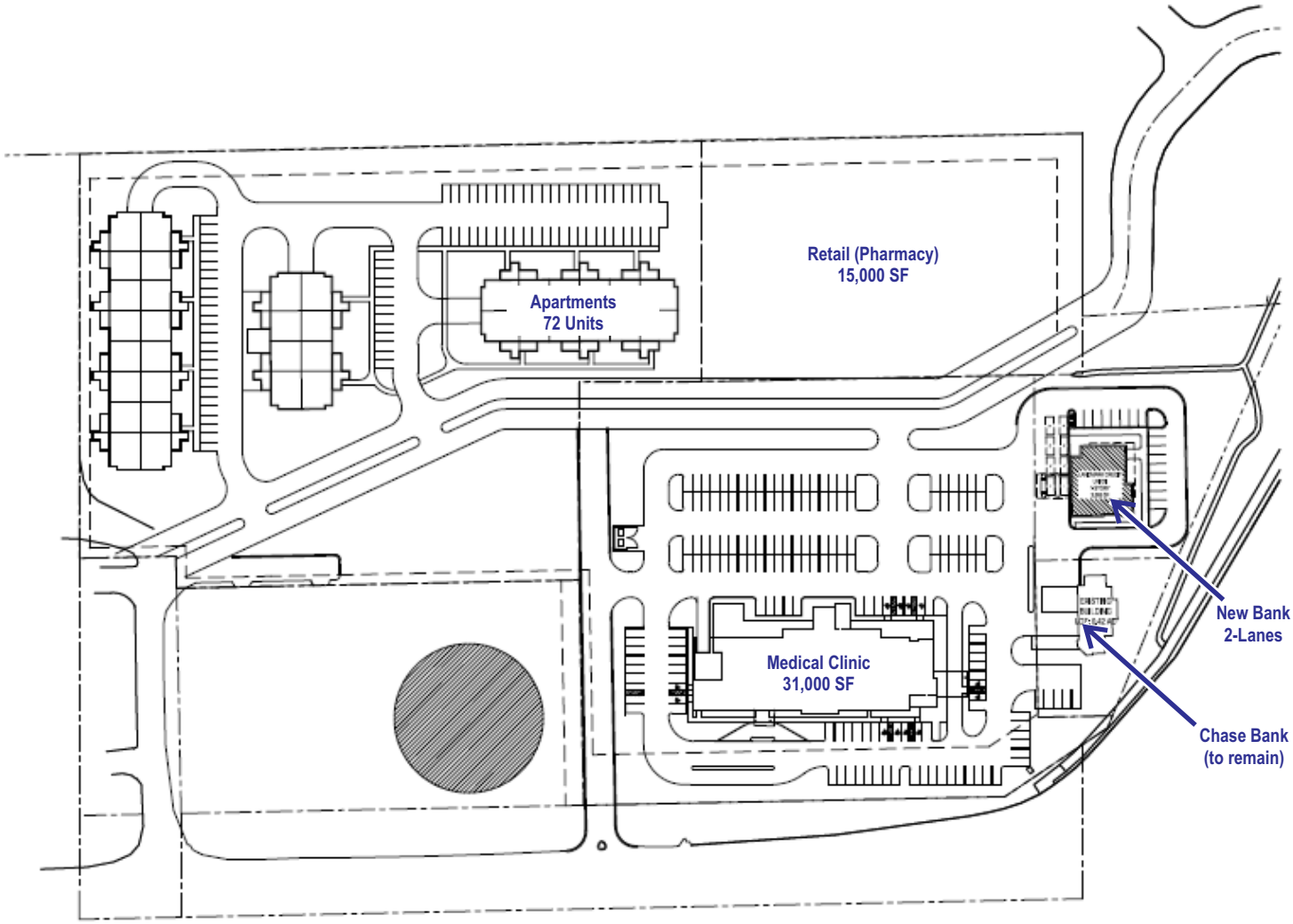
TRAFFIC ANALYSIS & DESIGN, INC.
2450: 01-16-2020

EXHIBIT 2
EXISTING TRANSPORTATION SYSTEM

WAUKESHA COUNTY, WISCONSIN

N

NOT TO SCALE

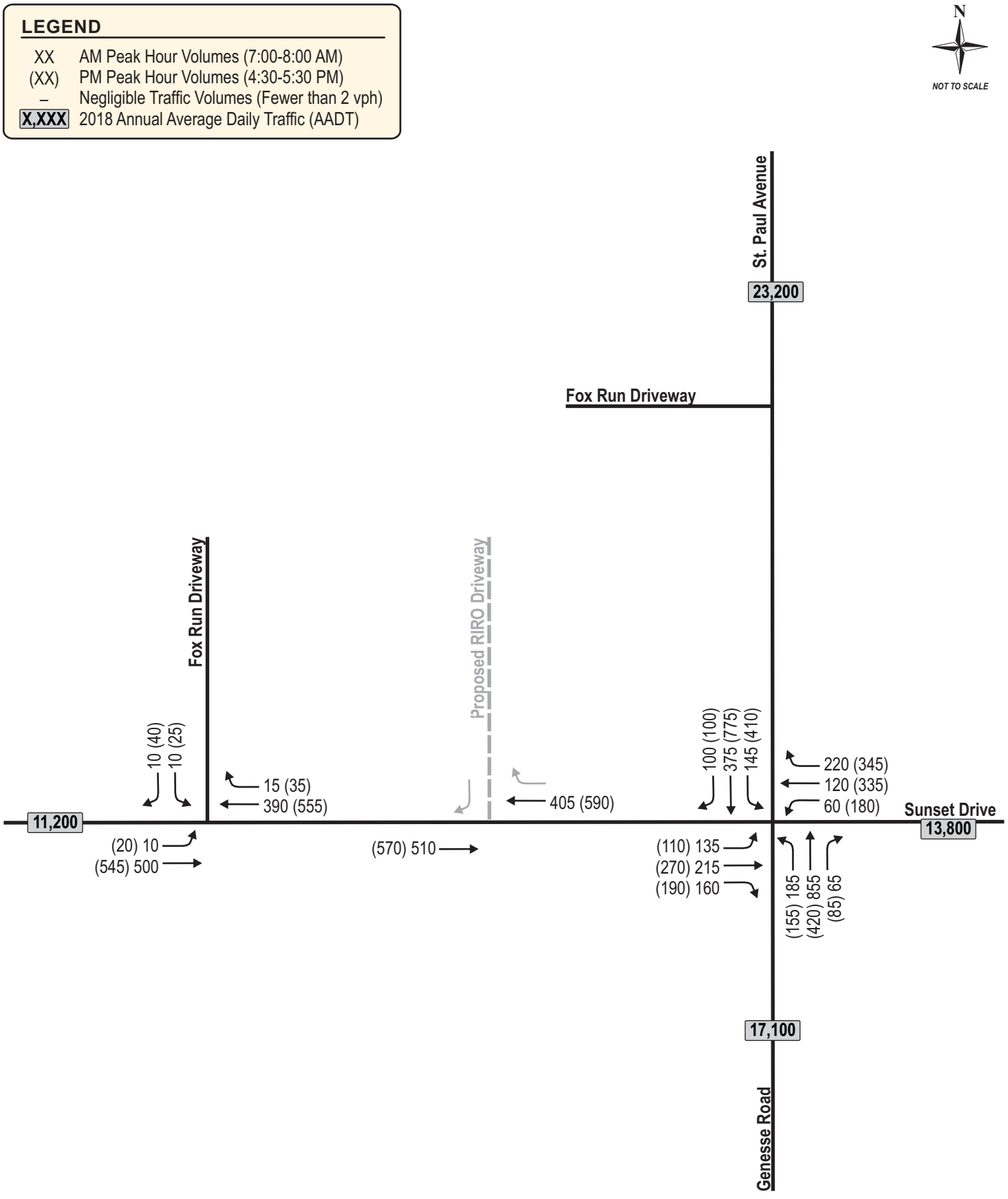


TRAFFIC ANALYSIS & DESIGN, INC.

2450: 01-16-2020

EXHIBIT 3
CONCEPTUAL SITE PLAN

WAUKESHA COUNTY, WISCONSIN



TRAFFIC ANALYSIS & DESIGN, INC.
2450: 01-16-2020

EXHIBIT 4
YEAR 2019 EXISTING TRAFFIC VOLUMES

WAUKESHA COUNTY, WISCONSIN

Fox Run Shopping Center - Redevelopment
Trip Generation Table

Land Use	ITE Code	Proposed Size	Weekday Daily	AM Peak In	AM Peak Out	AM Peak Total	PM Peak In	PM Peak Out	PM Peak Total
Multi-Family Housing (Low-Rise)	220	72 Units	505 FCE	10 (23%)	25 (77%)	35 FCE	30 (63%)	15 (37%)	45 FCE
Clinic	630	31,000 Sq. Ft.	1,185 (38.16)	90 (78%)	25 (22%)	115 (3.69)	30 (29%)	70 (71%)	100 (3.28)
Drive-in Bank	912	2 Lanes	250 (124.76)	10 (61%)	10 (39%)	20 (8.83)	25 (49%)	30 (51%)	55 (27.15)
Pharmacy/Drugstore w/Drive-Through Window	881	15,000 Sq. Ft.	1,635 (109.16)	30 (53%)	30 (47%)	60 (3.84)	80 (50%)	75 (50%)	155 (10.29)
Total Trips			**3,575**	**140**	**90**	**230**	**165**	**190**	**355**
Minus Linked Trips		*5%*	*-180*	*-5*	*-5*	*-10*	*-10*	*-10*	*-20*
Total Driveway Trips			**3,395**	**135**	**85**	**220**	**155**	**180**	**335**
Minus Pass-by Trips	*(912)*	*35%*	*-80*	*-5*	*-5*	*-10*	*-10*	*-10*	*-20*
Minus Pass-by Trips	*(881)*	*49%*	*-760*	*-15*	*-15*	*-30*	*-35*	*-35*	*-70*
Total Pass-by Trips (Minus)			**-840**	**-20**	**-20**	**-40**	**-45**	**-45**	**-90**
Total New Trips			**2,555**	**115**	**65**	**180**	**110**	**135**	**245**
Minus Existing Sentry Trips			-1,480	-35	-95	-130	-30	-105	-135
Net New Trips			**1,075**	**80**	**-30**	**50**	**80**	**30**	**110**

Notes

ITE Trip Rates (X.XX) and/or Fitted Curve Equations (FCE) are from the ITE Trip Generation Manual, 10th Edition.
Pass-by trips were calculated after linked trip reductions for each land use.
24-volumes for the Sentry was not counted, but based on the same PM-Daily ratio (9.1%) as ITE LU#850, Supermarket.

TRIP DISTRIBUTION (Net New Trips)

W. on Sunset Drive	15%	160	10	-5	10	5
E. on Sunset Drive	20%	215	15	-5	15	5
N. on St. Paul Avenue	35%	375	30	-10	30	10
S. on Genesse Road	30%	325	25	-10	25	10
	100%	***1075***	***80***	***-30***	***80***	***30***

TRIP DISTRIBUTION (Pass-by Trips)

EB Sunset Drive	15% (15%)	0	0	5	5
WB Sunset Drive	15% (15%)	5	5	5	5
NB St. Paul Avenue	45% (30%)	10	10	15	15
SB St. Paul Avenue	25% (40%)	5	5	20	20
		20	***20***	***45***	***45***

TRAFFIC ANALYSIS & DESIGN, INC.
2450: 01-16-2020

EXHIBIT 5
TRIP GENERATION & DISTRIBUTION

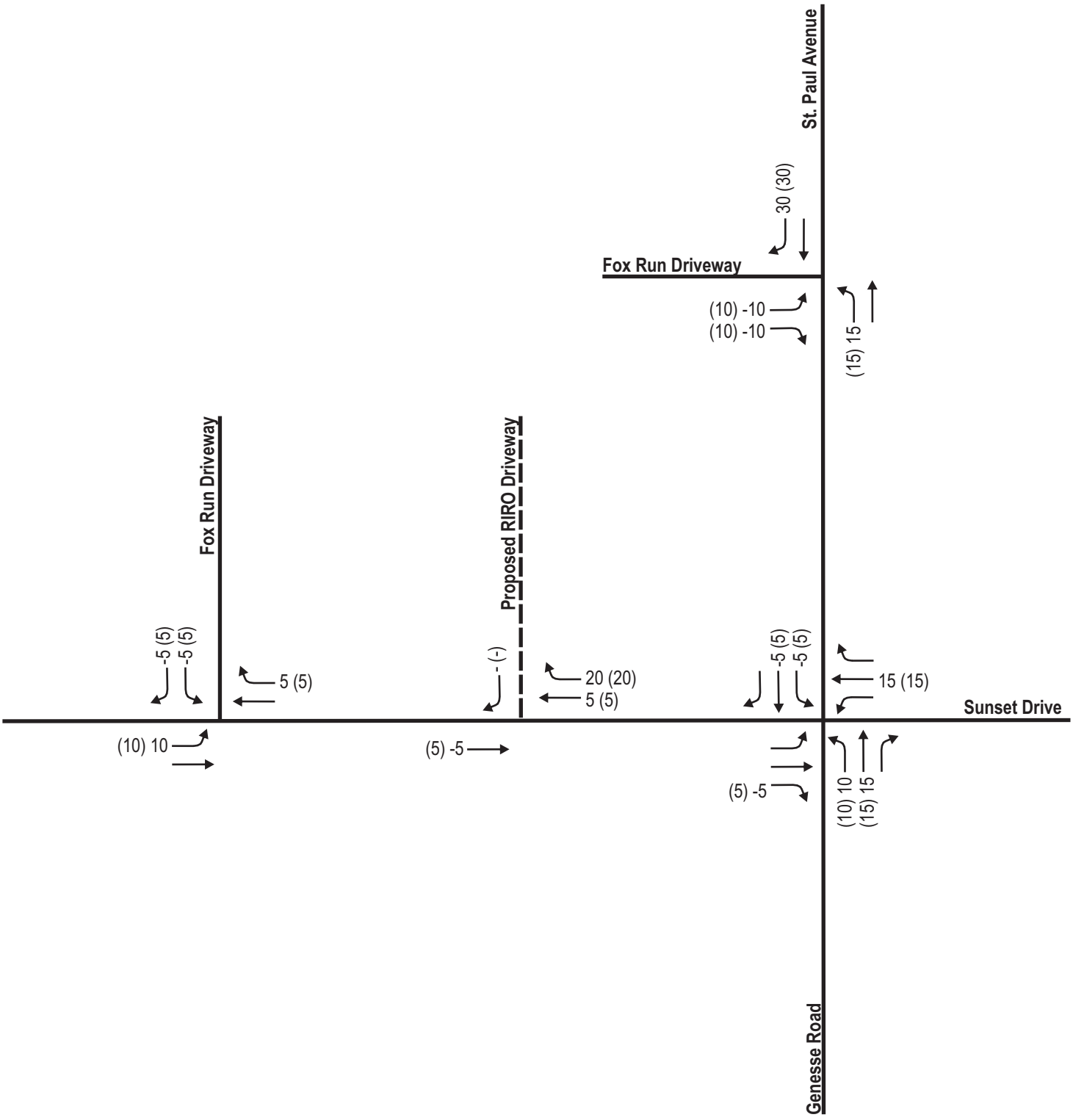
WAUKESHA COUNTY, WISCONSIN

LEGEND

XX	AM Peak Hour Volumes (7:00-8:00 AM)
(XX)	PM Peak Hour Volumes (4:30-5:30 PM)
–	Negligible Traffic Volumes (Fewer than 2 vph)

N

NOT TO SCALE



TADI
TRAFFIC ANALYSIS & DESIGN, INC.
2450: 01-16-2020

EXHIBIT 6A
DEVELOPMENT NET NEW TRIPS

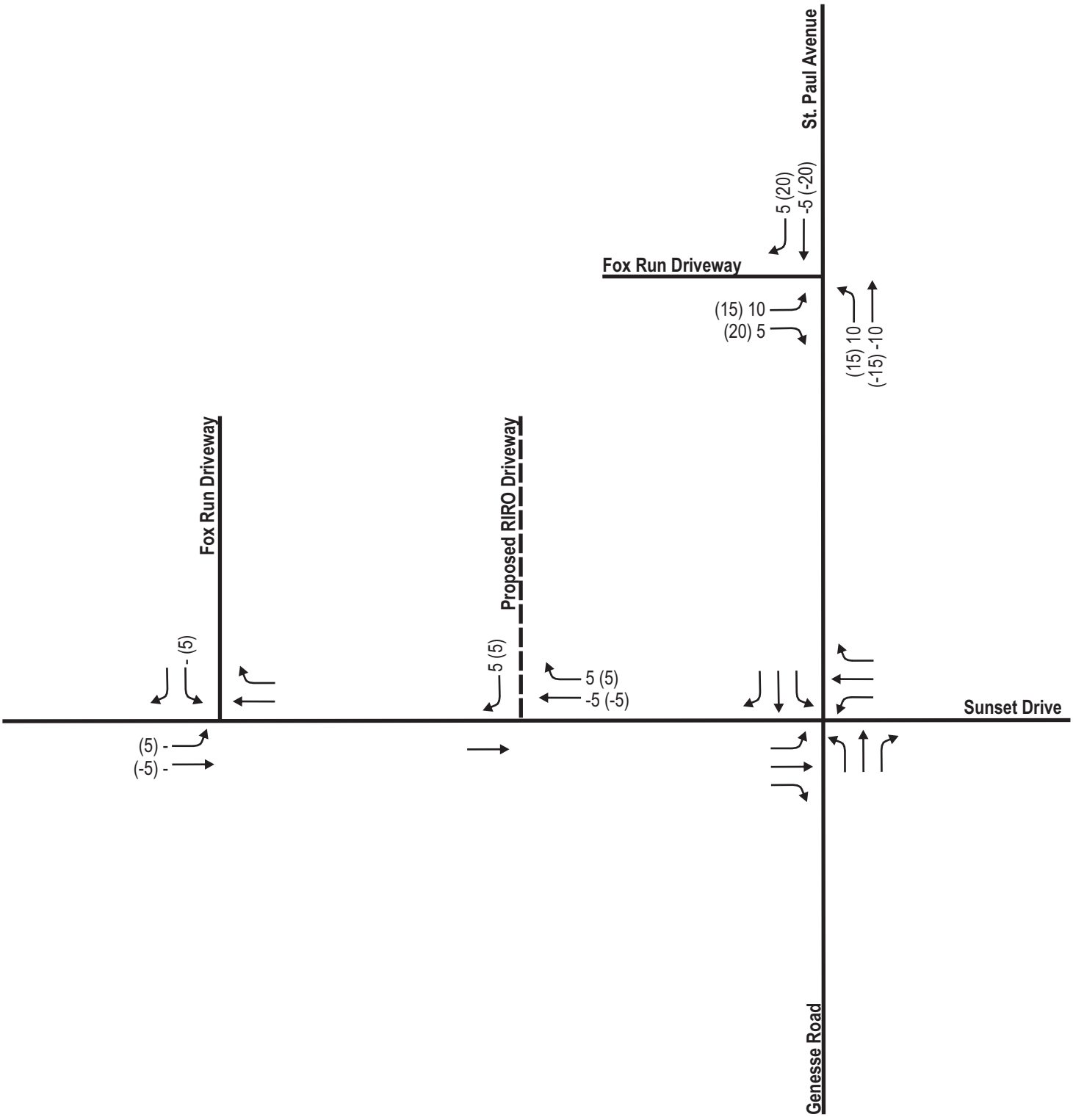
WAUKESHA COUNTY, WISCONSIN

LEGEND

XX	AM Peak Hour Volumes (7:00-8:00 AM)
(XX)	PM Peak Hour Volumes (4:30-5:30 PM)
–	Negligible Traffic Volumes (Fewer than 2 vph)

N

NOT TO SCALE



TADI
TRAFFIC ANALYSIS & DESIGN, INC.
2450: 01-16-2020

EXHIBIT 6B
DEVELOPMENT PASS-BY TRIPS

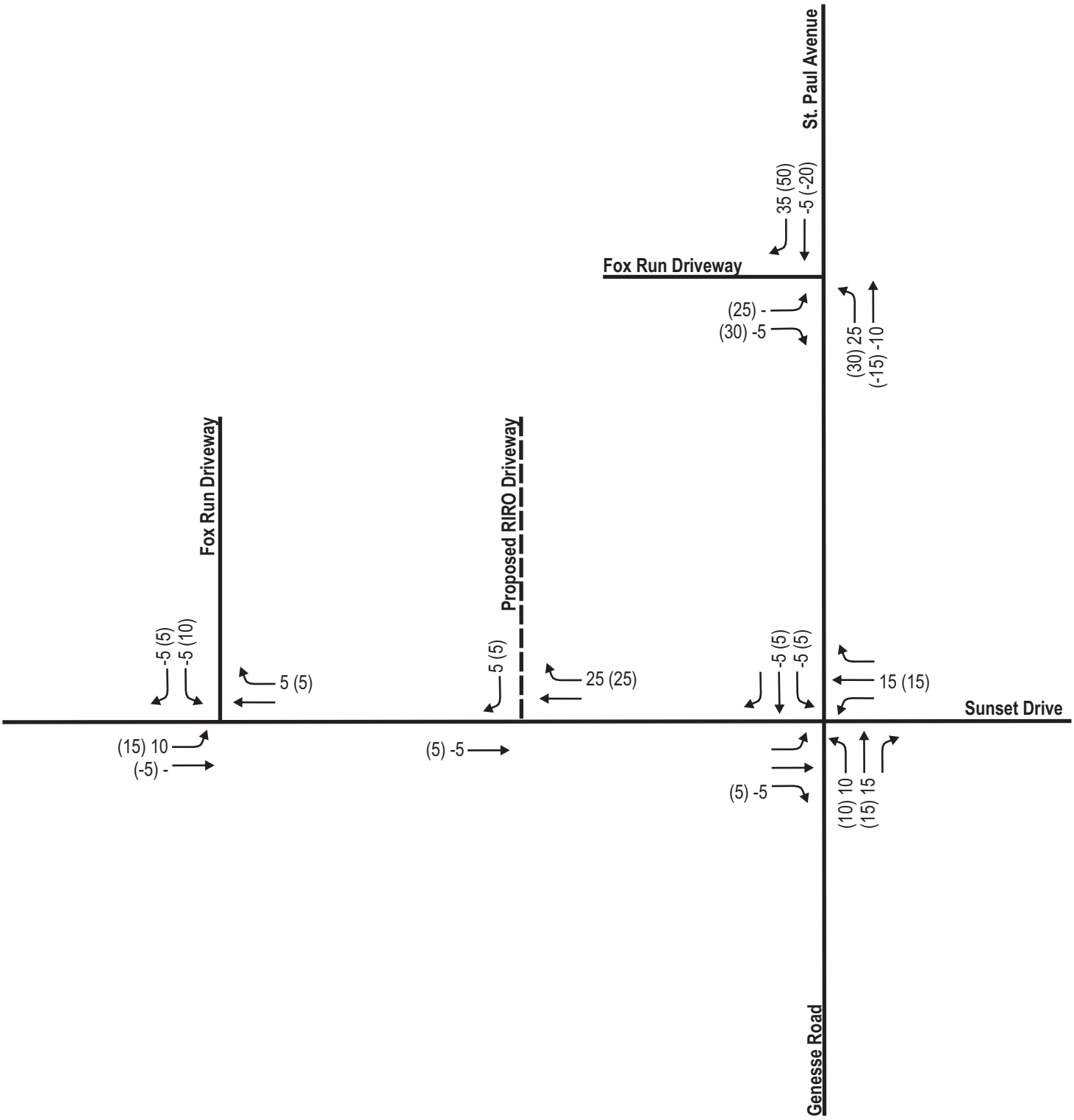
WAUKESHA COUNTY, WISCONSIN

LEGEND

XX	AM Peak Hour Volumes (7:00-8:00 AM)
(XX)	PM Peak Hour Volumes (4:30-5:30 PM)
–	Negligible Traffic Volumes (Fewer than 2 vph)

N

NOT TO SCALE



TADI
TRAFFIC ANALYSIS & DESIGN, INC.
2450: 01-16-2020

EXHIBIT 6C
DEVELOPMENT DRIVEWAY TRIPS

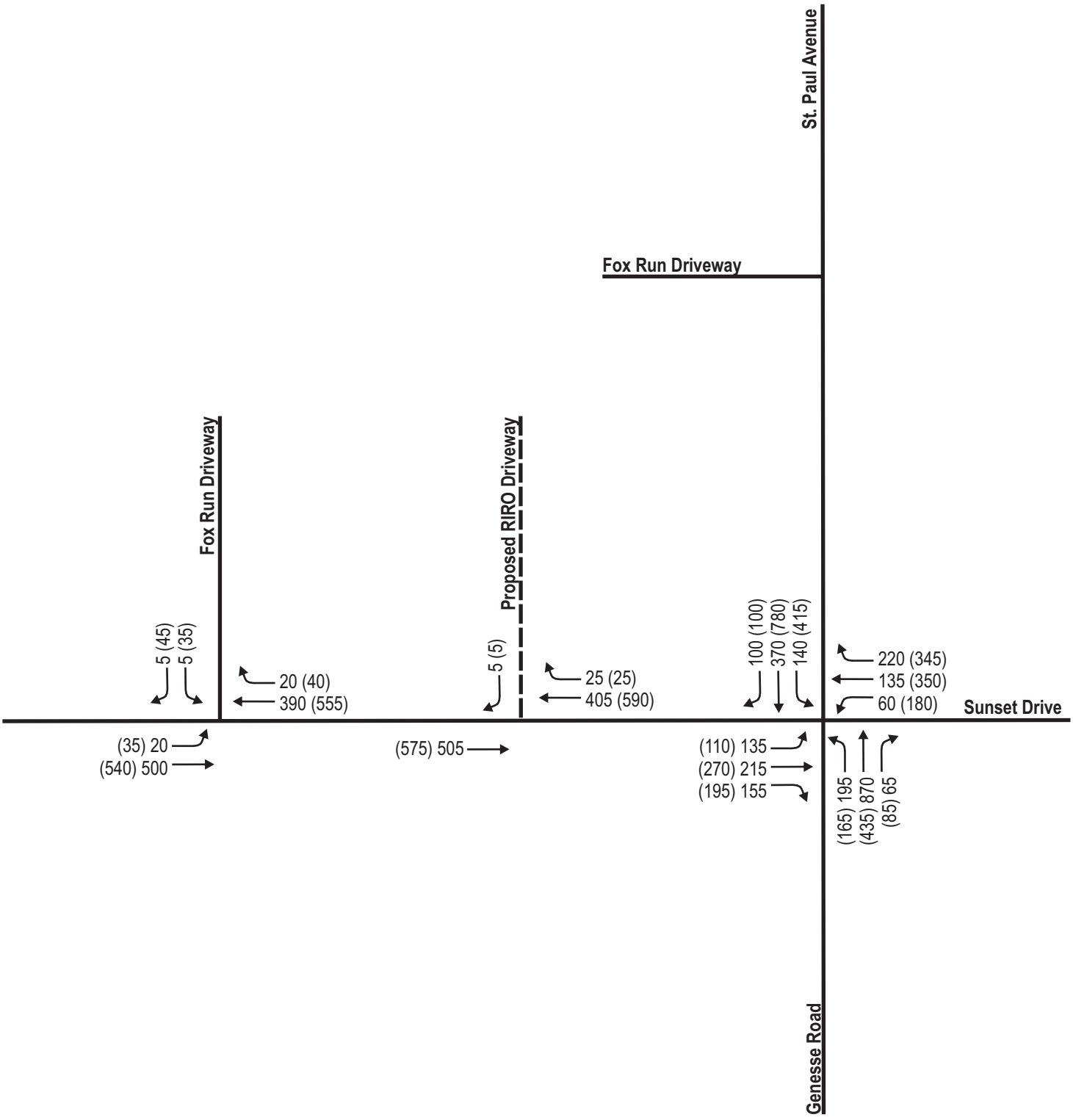
WAUKESHA COUNTY, WISCONSIN

LEGEND

XX	AM Peak Hour Volumes (7:00-8:00 AM)
(XX)	PM Peak Hour Volumes (4:30-5:30 PM)
–	Negligible Traffic Volumes (Fewer than 2 vph)

N

NOT TO SCALE



TADI
TRAFFIC ANALYSIS & DESIGN, INC.
2450: 01-16-2020

EXHIBIT 7
YEAR 2020 BUILD TRAFFIC VOLUMES

WAUKESHA COUNTY, WISCONSIN

Year 2019 Existing Traffic Operations & Queues
Without Modifications

Intersection	Peak Hour		Level of Service per Movement by Approach											
			Eastbound			Westbound			Northbound			Southbound		
			LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Node 100: Genesee Road/St. Paul Avenue & Sunset Drive *(Traffic Signal)*	AM	LOS	C	C	C	C	C	C	D	C	B	C	B	B
		Queue	95	90	95	50	55	95	80	300	40	65	120	50
	PM	LOS	C	C	C	C	C	C	D	C	B	D	C	B
		Queue	75	105	110	120	130	125	70	155	55	160	275	55
Node 200: Sunset Drive & Fox Run Development Driveway *(Stop Sign)*	AM	LOS	A		--	--	*		--			C		
		Queue	0		--	--	*		--			5		
	PM	LOS	A		--	--	*		--			C		
		Queue	5		--	--	*		--			20		

(--) indicates a movement that is prohibited or does not exist; (*) indicates a freeflow movement.
Queue is maximum of the 50th & 95th percentile queue, measured in feet.

Year 2019 Build Traffic Operations & Queues
Without Modifications

Intersection	Peak Hour		Level of Service per Movement by Approach											
			Eastbound			Westbound			Northbound			Southbound		
			LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Node 100: Genesee Road/St. Paul Avenue & Sunset Drive *(Traffic Signal)*	AM	LOS	C	C	C	C	C	C	D	C	B	C	B	B
		Queue	95	90	95	50	60	95	85	310	40	65	115	50
	PM	LOS	C	C	C	C	C	C	D	C	B	D	C	B
		Queue	75	105	110	120	135	125	75	160	55	160	275	55
Node 200: Sunset Drive & Fox Run Development Driveway *(Stop Sign)*	AM	LOS	A		--	--	*		--			C		
		Queue	5		--	--	*		--			5		
	PM	LOS	A		--	--	*		--			C		
		Queue	5		--	--	*		--			30		
Node 300: Sunset Drive & Proposed RIRO Driveway *(Stop Sign)*	AM	LOS	--	*	--	--		*	--			--		B
		Queue	--	*	--	--		*	--			--		0
	PM	LOS	--	*	--	--		*	--			--		B
		Queue	--	*	--	--		*	--			--		0

(--) indicates a movement that is prohibited or does not exist; (*) indicates a freeflow movement.
Queue is maximum of the 50th & 95th percentile queue, measured in feet.

APPENDIX A

Traffic Counts

Intersection Traffic Volume Report

Count Basics	Version 2013.J4.1	Page 1 of 13
Start Date: Monday, February 04, 2019	Weekday	Schools in Session
Total Number of Hours Counted: 5	Non-Holiday	No Special Events

Base Information, Observed (5) Hour and Estimated (24) Hour Volume Summaries

Intersection of: Genesee Rd - CTH D and Sunset Dr - CTH X

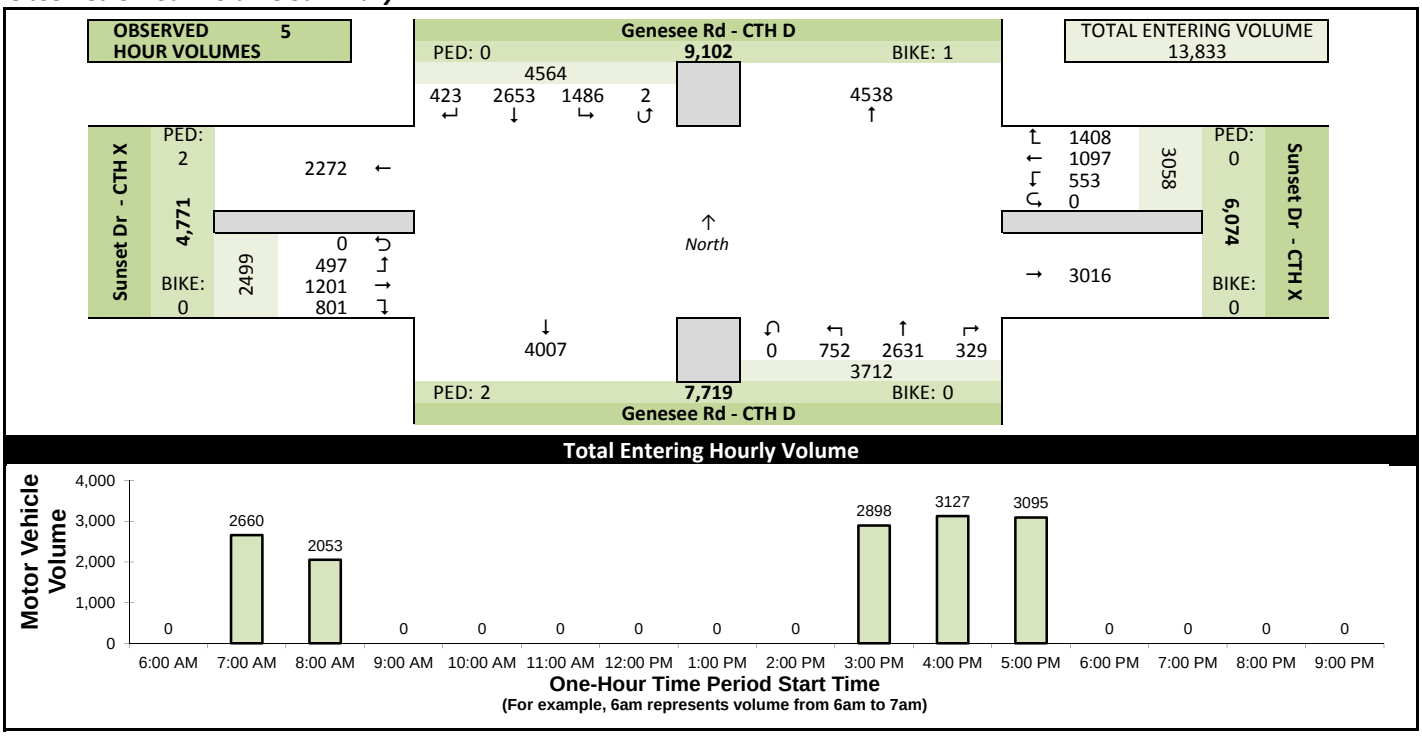
Site Information

Municipality	Waukesha		
County	Waukesha	WisDOT Region	SE
Traffic Control	Traffic Signal		
Roadway Names		North Direction	↑
North Leg	Genesee Rd - CTH D		
East Leg	Sunset Dr - CTH X		
South Leg	Genesee Rd - CTH D		
West Leg	Sunset Dr - CTH X		
Special Considerations			
Schools	In Session		
Holidays	None		
Special Events	None		
Special Pedestrians Observed			
Pre-school children	None		
Elementry school age children	None		
Visually impaired (white cane/helper dog)	None		
Elderly/disabled (except wheelchairs)	None		
Wheelchairs/electric scooters	None		
Other (describe)	None		

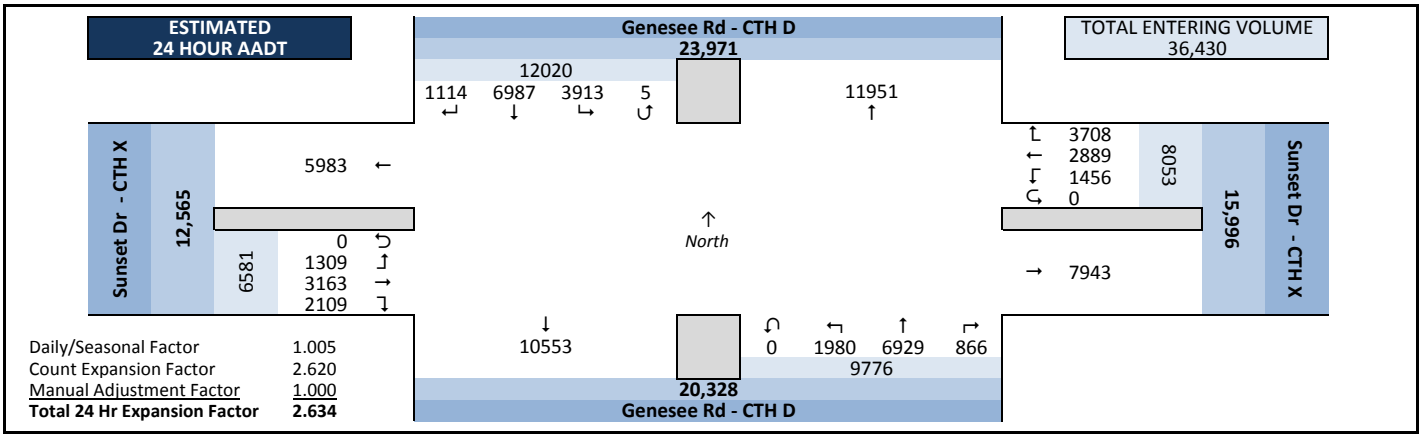
Count Information

Hrs Counted:	7:00 AM-9:00 AM and 3:00 PM-6:00 PM				
1st Day of Count	Monday, February 04, 2019			Weather	
AM Peak Period	Wednesday, February 13, 2019			Clear & Dry	
Midday Peak Period					
PM Peak Period	Monday, February 04, 2019			Clear & Dry	
Calculated Peak Hours					
AM	7:00-8:00am	MD		PM	4:30-5:30pm
Peak Hours Selected for Analysis					
AM	7:00-8:00am	MD		PM	4:30-5:30pm
Daily/Seasonal Adjustment Group	(2) Urban Arterials & Collectors				
Count Expansion Group	(2) Urban Arterials & Collectors				
Daily/Seasonal Adjustment Factor	1.005	Count Expansion Factor	2.620		
Company Name	TADi			Manual Adj.	1.000
Observers	AM Peak Period	Amy Scheuerlein, Wendy Picard			
	Midday Peak Period				
	PM Peak Period	Amy Scheuerlein, Wendy Picard			
Comments	2017 DOT Seasonal Factors				

Observed 5 Hour Volume Summary



Estimated 24 Hour AADT



Daily/Seasonal Factor	1.005
Count Expansion Factor	2.620
Manual Adjustment Factor	1.000
Total 24 Hr Expansion Factor	**2.634**

Intersection Traffic Volume Report

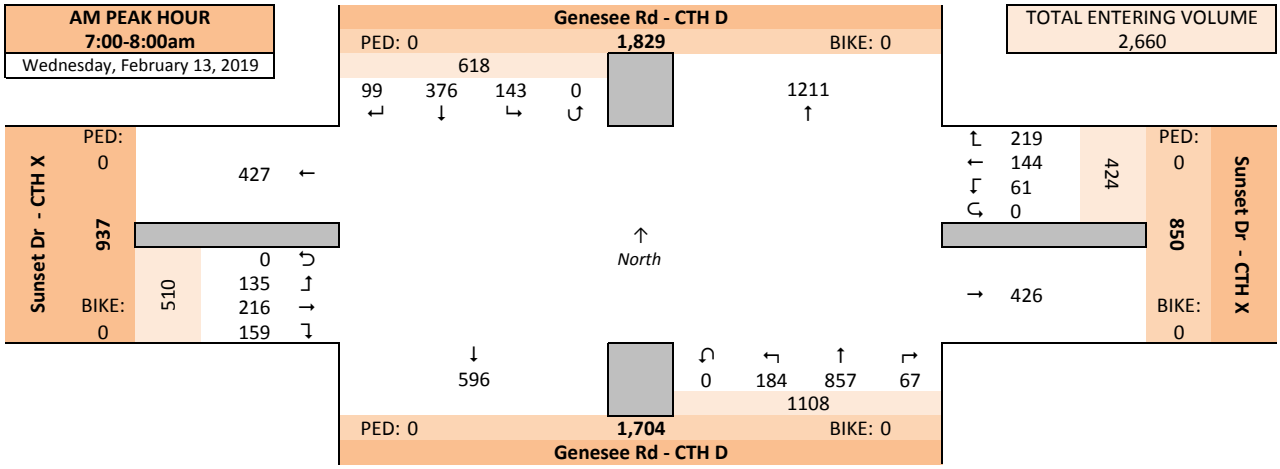
Count Basics			Page 2 of 13
Start Date:	Monday, February 04, 2019	Weekday	Schools in Session
Total Number of Hours Counted: 5		Non-Holiday	No Special Events

Peak Hour Volume Graphical Summary

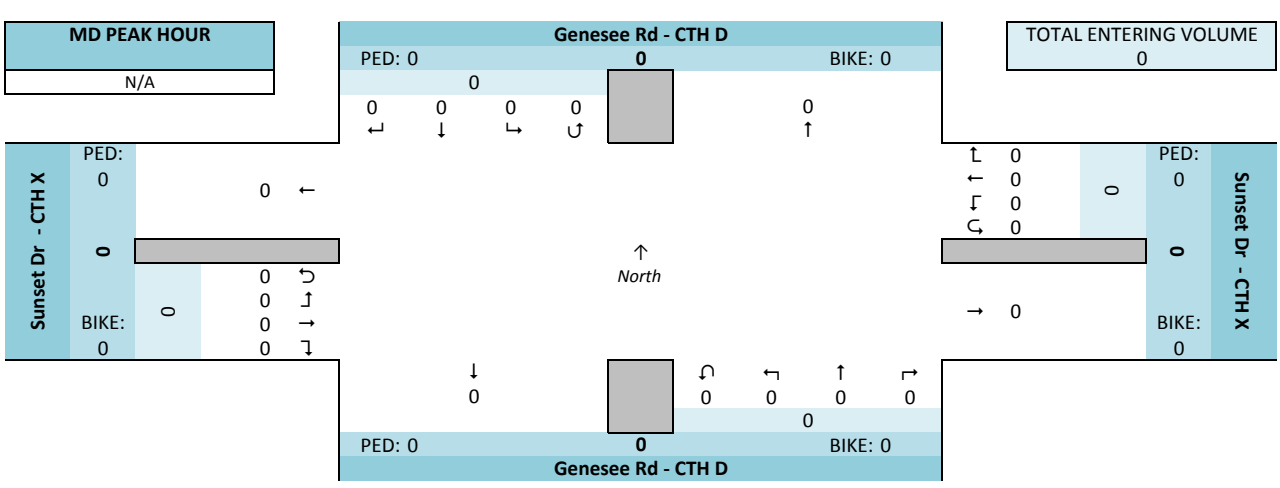
All Motor Vehicles

Genesee Rd - CTH D and Sunset Dr - CTH X

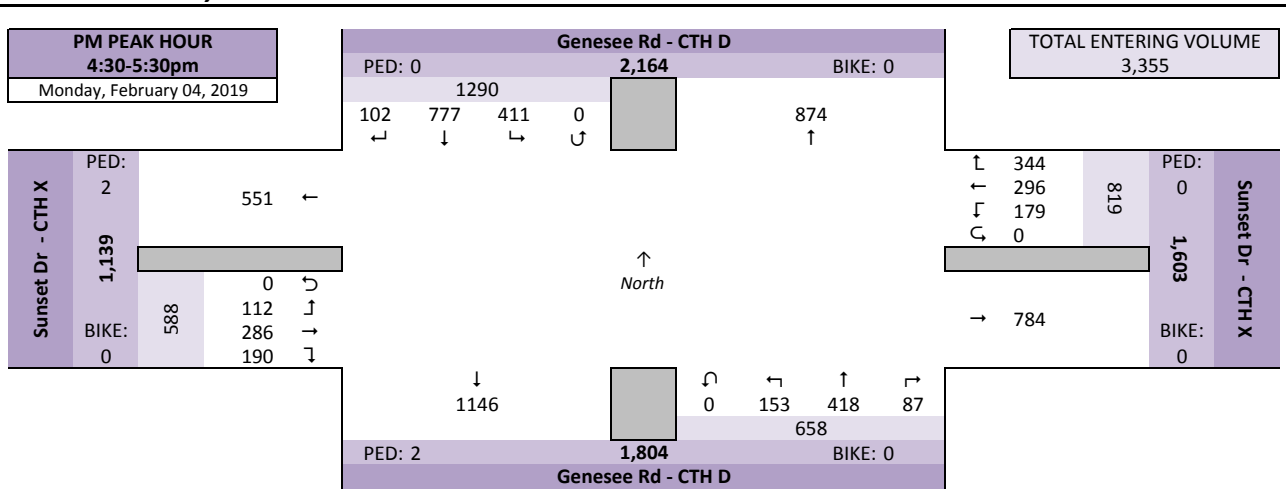
AM Peak Hour Summary



Midday (MD) Peak Hour Summary



PM Peak Hour Summary



Intersection Traffic Volume Report

Count Basics		*Page 3 of 13*
Start Date: Monday, February 04, 2019	Weekday	Schools in Session
Total Number of Hours Counted: 5	Non-Holiday	No Special Events

Peak Hour Volume Summary

Genesee Rd - CTH D and Sunset Dr - CTH X

All Motor Vehicles

Peak Hour Volumes, Truck Percentages, and PHFs

Wednesday, February 13, 2019		From North					From East					From South					From West					
	AM Peak Hour	Genesee Rd - CTH D					Sunset Dr - CTH X					Genesee Rd - CTH D					Sunset Dr - CTH X					
	Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Totals
AM Peak Hour	7:00 AM	29	66	26	0	121	55	38	18	0	111	16	189	25	0	230	42	52	37	0	131	593
	7:15 AM	30	93	28	0	151	46	29	16	0	91	16	206	60	0	282	43	60	45	0	148	672
	7:30 AM	18	90	45	0	153	63	41	14	0	118	18	248	49	0	315	34	62	33	0	129	715
	7:45 AM	22	127	44	0	193	55	36	13	0	104	17	214	50	0	281	40	42	20	0	102	680
	Peak Hour Volume	99	376	143	0	618	219	144	61	0	424	67	857	184	0	1108	159	216	135	0	510	2660
	Rounded Hourly Volume	100	375	145	0	620	220	145	60	0	425	65	855	185	0	1105	160	215	135	0	510	2660
	% Single Unit Trucks	8.1	4.0	2.8	0.0	4.4	5.0	4.9	4.9	0.0	5.0	6.0	2.0	4.3	0.0	2.6	5.0	2.3	14.1	0.0	6.3	4.1
	% Heavy Trucks	1.0	0.5	1.4	0.0	0.8	0.0	0.0	1.6	0.0	0.2	0.0	0.2	0.5	0.0	0.3	0.6	0.5	0.7	0.0	0.6	0.5
	% Trucks (Total)	9.1	4.5	4.2	0.0	5.2	5.0	4.9	6.6	0.0	5.2	6.0	2.2	4.9	0.0	2.9	5.7	2.8	14.8	0.0	6.9	4.5
	Peak Hour Factor (PHF)	0.82	0.74	0.79	0.00	0.80	0.87	0.88	0.85	0.00	0.90	0.93	0.86	0.77	0.00	0.88	0.92	0.87	0.75	0.00	0.86	0.93

N/A		From North					From East					From South					From West					
	MD Peak Hour	Genesee Rd - CTH D					Sunset Dr - CTH X					Genesee Rd - CTH D					Sunset Dr - CTH X					
	Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Totals
Midday (MD) Peak Hour	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Peak Hour Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Rounded Hourly Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	% Single Unit Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	% Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	% Trucks (Total)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Peak Hour Factor (PHF)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Monday, February 04, 2019		From North					From East					From South					From West					
	PM Peak Hour	Genesee Rd - CTH D					Sunset Dr - CTH X					Genesee Rd - CTH D					Sunset Dr - CTH X					
	Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Totals
PM Peak Hour	4:30 PM	25	188	80	0	293	82	88	50	0	220	16	99	25	0	140	44	70	16	0	130	783
	4:45 PM	28	197	109	0	334	83	61	30	0	174	37	111	35	0	183	41	69	26	0	136	827
	5:00 PM	28	185	102	0	315	81	82	53	0	216	13	101	48	0	162	54	74	33	0	161	854
	5:15 PM	21	207	120	0	348	98	65	46	0	209	21	107	45	0	173	51	73	37	0	161	891
	Peak Hour Volume	102	777	411	0	1290	344	296	179	0	819	87	418	153	0	658	190	286	112	0	588	3355
	Rounded Hourly Volume	100	775	410	0	1285	345	295	180	0	820	85	420	155	0	660	190	285	110	0	585	3350
	% Single Unit Trucks	4.9	0.5	0.0	0.0	0.7	1.7	1.0	1.1	0.0	1.3	2.3	1.0	1.3	0.0	1.2	5.3	1.7	1.8	0.0	2.9	1.3
	% Heavy Trucks	1.0	0.1	0.2	0.0	0.2	0.3	0.0	0.6	0.0	0.2	0.0	0.2	0.7	0.0	0.3	0.0	0.3	0.0	0.0	0.2	0.2
	% Trucks (Total)	5.9	0.6	0.2	0.0	0.9	2.0	1.0	1.7	0.0	1.6	2.3	1.2	2.0	0.0	1.5	5.3	2.1	1.8	0.0	3.1	1.6
	Peak Hour Factor (PHF)	0.91	0.94	0.86	0.00	0.93	0.88	0.84	0.84	0.00	0.93	0.59	0.94	0.80	0.00	0.90	0.88	0.97	0.76	0.00	0.91	0.94

Peak Hour Pedestrian and Bicyclist Volumes

Pedestrians and Bicyclists		Crossing North Approach			Crossing East Approach			Crossing South Approach			Crossing West Approach			Total Ped & Bike
		Genesee Rd - CTH D			Sunset Dr - CTH X			Genesee Rd - CTH D			Sunset Dr - CTH X			
	15-Minute Start Time	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Volume
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0	0
MD	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:30 PM	0	0	0	0	0	0	1	0	1	1	0	1	2
	4:45 PM	0	0	0	0	0	0	1	0	1	1	0	1	2
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	2	0	2	2	0	2	4

Intersection Traffic Volume Report

Count Basics		*Page 5 of 13*
Start Date: Monday, February 04, 2019	Weekday	Schools in Session
Total Number of Hours Counted: 5	Non-Holiday	No Special Events

15-Minute Motor Vehicle Data

All Motor Vehicles

Genesee Rd - CTH D and Sunset Dr - CTH X

15-Minute Motor Vehicle Data

15-Minute Time Period		From North (↓) Genesee Rd - CTH D					From East (←) Sunset Dr - CTH X					From South (↑) Genesee Rd - CTH D					From West (→) Sunset Dr - CTH X					15-Min	Hourly	
	Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Totals	Sum	PHF
AM Peak Period	6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	7:00 AM	29	66	26	0	121	55	38	18	0	111	16	189	25	0	230	42	52	37	0	131	593	2660	0.93
	7:15 AM	30	93	28	0	151	46	29	16	0	91	16	206	60	0	282	43	60	45	0	148	672	2625	0.92
	7:30 AM	18	90	45	0	153	63	41	14	0	118	18	248	49	0	315	34	62	33	0	129	715	2452	0.86
	7:45 AM	22	127	44	0	193	55	36	13	0	104	17	214	50	0	281	40	42	20	0	102	680	2242	0.82
	8:00 AM	14	77	31	0	122	50	30	11	0	91	13	188	39	0	240	38	39	28	0	105	558	2053	0.92
	8:15 AM	16	71	42	0	129	55	35	6	0	96	12	136	50	0	198	16	36	24	0	76	499		
	8:30 AM	15	69	54	0	138	34	30	7	0	71	15	142	24	0	181	33	65	17	0	115	505		
	8:45 AM	20	60	50	0	130	61	31	3	0	95	11	137	26	0	174	28	47	17	0	92	491		
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Midday Peak Period	10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
PM Peak Period	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	3:00 PM	20	115	70	1	206	86	81	30	0	197	10	96	35	0	141	54	67	35	0	156	700	2898	0.95
	3:15 PM	12	121	80	0	213	93	62	35	0	190	21	114	39	0	174	41	56	23	0	120	697	2949	0.97
	3:30 PM	23	182	106	0	311	87	69	35	0	191	11	96	31	0	138	35	45	21	0	101	741	3018	0.98
	3:45 PM	19	170	114	1	304	76	62	36	0	174	16	87	38	0	141	30	97	14	0	141	760	3060	0.98
	4:00 PM	22	173	94	0	289	87	77	32	0	196	16	85	37	0	138	48	59	21	0	128	751	3127	0.95
	4:15 PM	30	185	98	0	313	84	53	48	0	185	17	85	35	0	137	43	68	20	0	131	766	3230	0.95
	4:30 PM	25	188	80	0	293	82	88	50	0	220	16	99	25	0	140	44	70	16	0	130	783	3355	0.94
	4:45 PM	28	197	109	0	334	83	61	30	0	174	37	111	35	0	183	41	69	26	0	136	827	3259	0.91
	5:00 PM	28	185	102	0	315	81	82	53	0	216	13	101	48	0	162	54	74	33	0	161	854	3095	0.87
	5:15 PM	21	207	120	0	348	98	65	46	0	209	21	107	45	0	173	51	73	37	0	161	891		
	5:30 PM	20	141	86	0	247	66	65	34	0	165	21	95	34	0	150	48	63	14	0	125	687		
	5:45 PM	11	136	107	0	254	66	62	36	0	164	12	95	27	0	134	38	57	16	0	111	663		
	6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Totals		423	2653	1486	2	4564	1408	1097	553	0	3058	329	2631	752	0	3712	801	1201	497	0	2499	13833		

Peak Hour All Vehicle Volume Summary

Hourly Time Period		From North (↓) Genesee Rd - CTH D					From East (←) Sunset Dr - CTH X					From South (↑) Genesee Rd - CTH D					From West (→) Sunset Dr - CTH X					Total Hourly	
	Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Volume	PHF
AM	7:00 AM	99	376	143	0	618	219	144	61	0	424	67	857	184	0	1108	159	216	135	0	510	2660	0.93
MD	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
PM	4:30 PM	102	777	411	0	1290	344	296	179	0	819	87	418	153	0	658	190	286	112	0	588	3355	0.94

Intersection Traffic Volume Report

Count Basics			*Page 9 of 13*
Start Date:	Monday, February 04, 2019	Weekday	Schools in Session
Total Number of Hours Counted: 5		Non-Holiday	No Special Events

15-Minute Heavy Vehicle Data

Heavy Vehicles (Single-Unit Trucks, Buses & Semi-Trucks)

Genesee Rd - CTH D and Sunset Dr - CTH X

15-Minute Heavy Vehicle Data

15-Minute Time Period Start Time		From North (↓) Genesee Rd - CTH D					From East (←) Sunset Dr - CTH X					From South (↑) Genesee Rd - CTH D					From West (→) Sunset Dr - CTH X					15-Min Totals	Hourly Sum
		Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total		
AM Peak Period	6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	7:00 AM	2	5	2	0	9	1	2	1	0	4	2	7	1	0	10	5	3	2	0	10	33	121
	7:15 AM	2	3	0	0	5	4	1	1	0	6	1	7	3	0	11	2	1	4	0	7	29	130
	7:30 AM	3	5	1	0	9	3	1	0	0	4	0	3	3	0	6	1	2	10	0	13	32	125
	7:45 AM	2	4	3	0	9	3	3	2	0	8	1	2	2	0	5	1	0	4	0	5	27	114
	8:00 AM	1	8	2	0	11	5	3	0	0	8	2	15	3	0	20	1	1	1	0	3	42	108
	8:15 AM	1	2	4	0	7	6	1	1	0	8	0	1	2	0	3	4	0	2	0	6	24	
	8:30 AM	1	1	2	0	4	0	3	1	0	4	1	5	0	0	6	4	3	0	0	7	21	
	8:45 AM	4	3	0	0	7	0	0	1	0	1	1	3	2	0	6	3	4	0	0	7	21	
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Midday Peak Period	10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
PM Peak Period	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	3:00 PM	1	3	0	0	4	5	3	0	0	8	1	6	4	0	11	0	3	4	0	7	30	123
	3:15 PM	1	10	1	0	12	0	1	0	0	1	1	6	4	0	11	6	2	2	0	10	34	111
	3:30 PM	2	5	1	0	8	3	1	0	0	4	1	5	2	0	8	5	2	1	0	8	28	109
	3:45 PM	3	7	5	0	15	1	4	1	0	6	1	2	2	0	5	2	3	0	0	5	31	102
	4:00 PM	1	3	0	0	4	0	1	0	0	1	1	1	2	0	4	6	2	1	0	9	18	85
	4:15 PM	2	3	2	0	7	1	3	1	0	5	2	3	5	0	10	3	3	4	0	10	32	76
	4:30 PM	2	2	0	0	4	3	3	2	0	8	0	1	1	0	2	5	1	1	0	7	21	53
	4:45 PM	3	2	0	0	5	2	0	0	0	2	1	1	1	0	3	1	2	1	0	4	14	41
	5:00 PM	1	1	0	0	2	1	0	1	0	2	0	1	0	0	1	3	1	0	0	4	9	35
	5:15 PM	0	0	1	0	1	1	0	0	0	1	1	2	1	0	4	1	2	0	0	3	9	
	5:30 PM	0	3	1	0	4	0	0	0	0	0	1	1	2	0	4	0	1	0	0	1	9	
	5:45 PM	2	0	0	0	2	1	0	0	0	1	0	1	0	0	1	1	2	1	0	4	8	
	6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Totals		34	70	25	0	129	40	30	12	0	82	18	73	40	0	131	54	38	38	0	130	472	

Peak Hour Heavy Vehicle Volume Summary

Hourly Time Period	Start Time	From North (↓) Genesee Rd - CTH D					From East (←) Sunset Dr - CTH X					From South (↑) Genesee Rd - CTH D					From West (→) Sunset Dr - CTH X					Total Hourly Volume
		Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	
AM	7:00 AM	9	17	6	0	32	11	7	4	0	22	4	19	9	0	32	9	6	20	0	35	121
MD	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:30 PM	6	5	1	0	12	7	3	3	0	13	2	5	3	0	10	10	6	2	0	18	53

Intersection Traffic Volume Report

Count Basics	Version 2013.J4.1		Page 1 of 13
Start Date:	Thursday, December 5, 2019	Weekday	Schools in Session
Total Number of Hours Counted: 5		Non-Holiday	No Special Events

Base Information, Observed (5) Hour and Estimated (24) Hour Volume Summaries

Intersection of: Fox Run Driveway and Sunset Drive

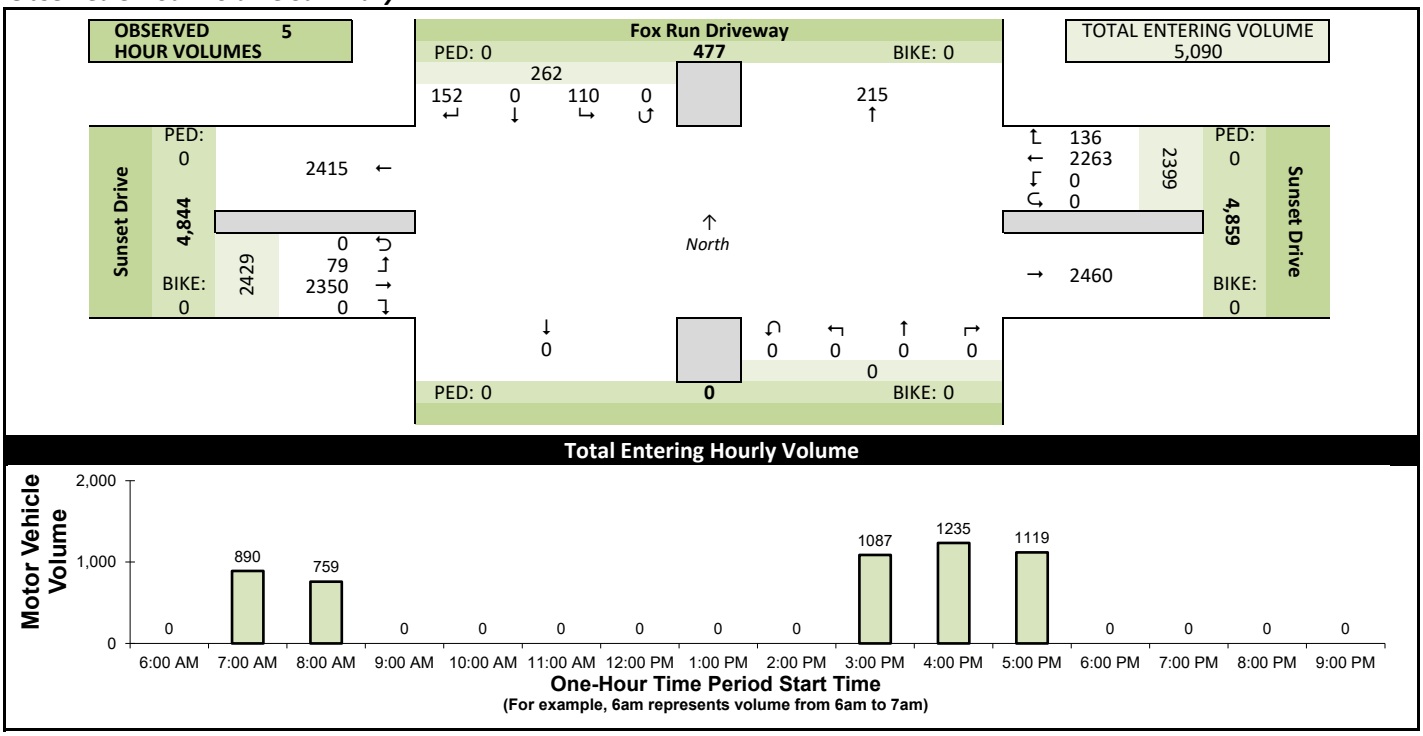
Site Information

Municipality	City of Waukesha		
County	Waukesha	WisDOT Region	SE
Traffic Control	Partial Stop Control		
Roadway Names		North Direction	↑
North Leg	Fox Run Driveway		
East Leg	Sunset Drive		
South Leg			
West Leg	Sunset Drive		
Special Considerations			
Schools	In Session		
Holidays	None		
Special Events	None		
Special Pedestrians Observed			
Pre-school children	None		
Elementry school age children	None		
Visually impaired (white cane/helper dog)	None		
Elderly/disabled (except wheelchairs)	None		
Wheelchairs/electric scooters	None		
Other (describe)	None		

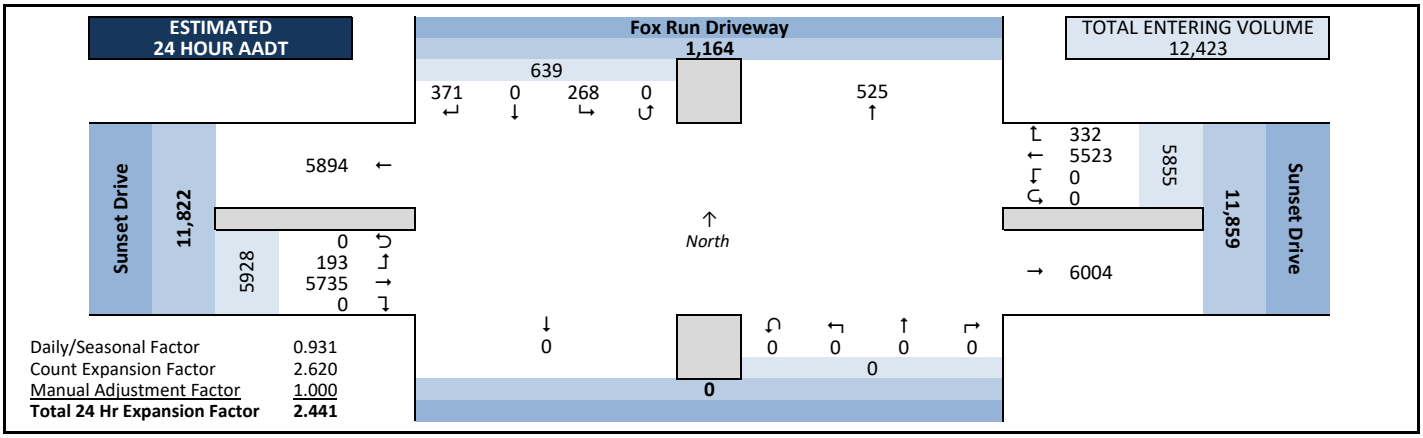
Count Information

Hrs Counted:	7:00 AM-9:00 AM and 3:00 PM-6:00 PM				
1st Day of Count	Thursday, December 5, 2019			Weather	
AM Peak Period	Thursday, December 5, 2019			Clear & Dry	
Midday Peak Period	Thursday, December 5, 2019			Clear & Dry	
PM Peak Period	Friday, December 6, 2019			Clear & Dry	
Calculated Peak Hours					
AM	7:15-8:15am	MD		PM	4:30-5:30pm
Peak Hours Selected for Analysis					
AM	7:00-8:00am	MD		PM	4:30-5:30pm
Daily/Seasonal Adjustment Group	(2) Urban Arterials & Collectors				
Count Expansion Group	(2) Urban Arterials & Collectors				
Daily/Seasonal Adjustment Factor	0.931	Count Expansion Factor	2.620		
Company Name	TADI, Inc			Manual Adj.	1.000
Observers	AM Peak Period	Amy Scheuerlein			
	Midday Peak Period	None			
	PM Peak Period	Amy Scheuerlein			
Comments	2017 DOT Seasonal Factors				

Observed 5 Hour Volume Summary



Estimated 24 Hour AADT



Intersection Traffic Volume Report

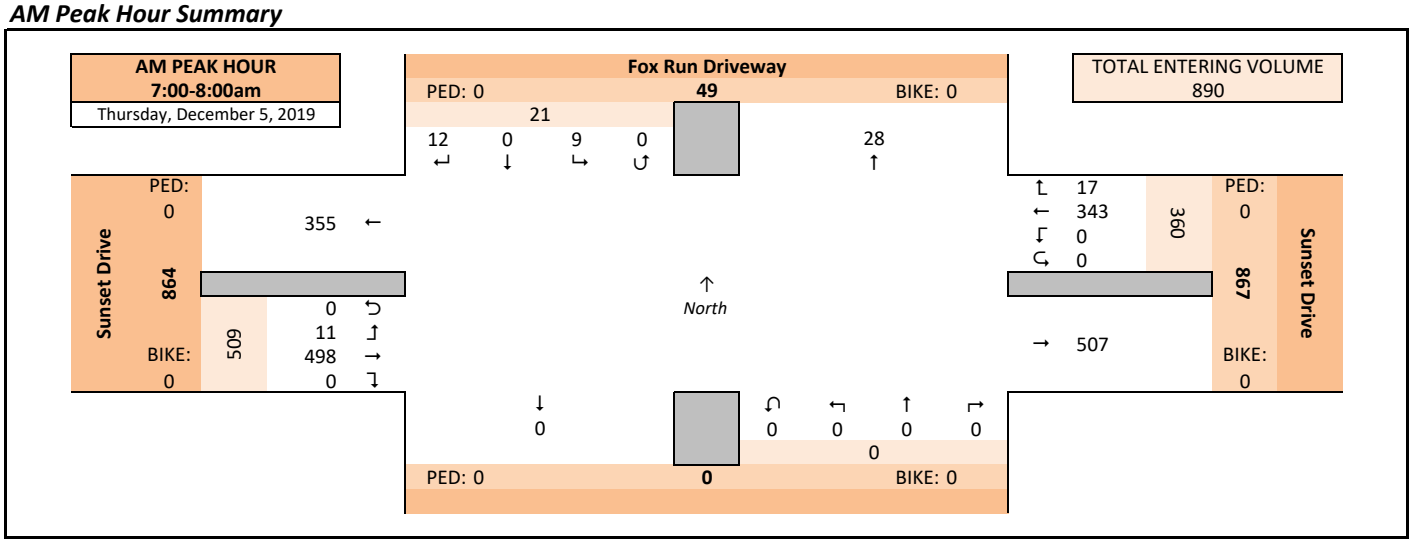
Count Basics			Page 2 of 13
Start Date:	Thursday, December 5, 2019	Weekday	Schools in Session
Total Number of Hours Counted: 5		Non-Holiday	No Special Events

Peak Hour Volume Graphical Summary

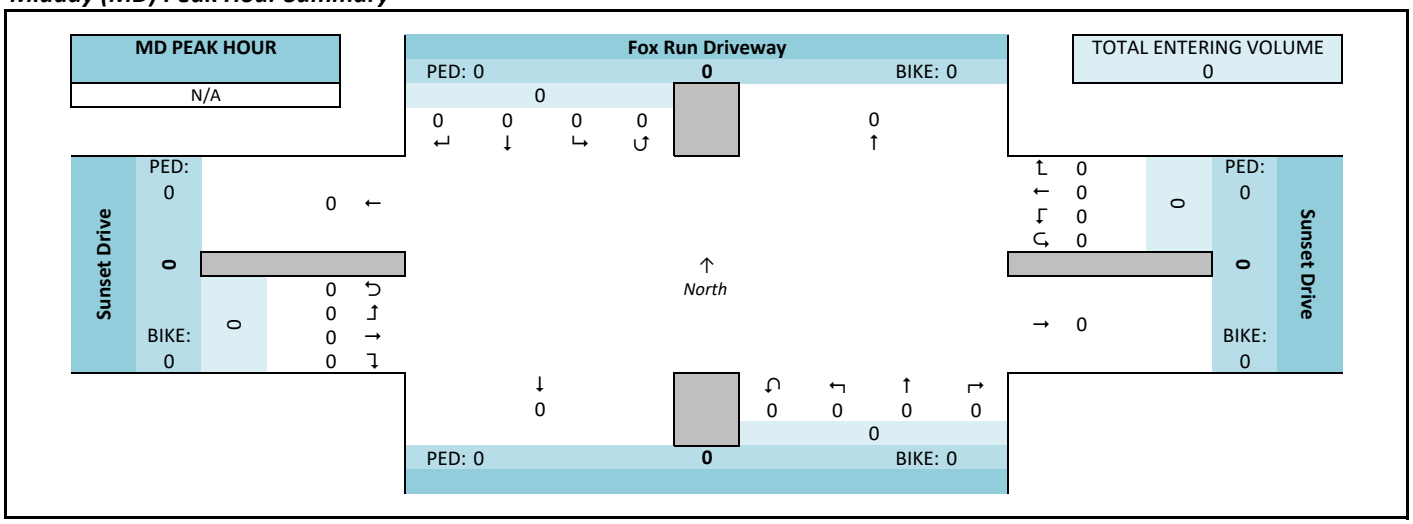
All Motor Vehicles

Fox Run Driveway and Sunset Drive

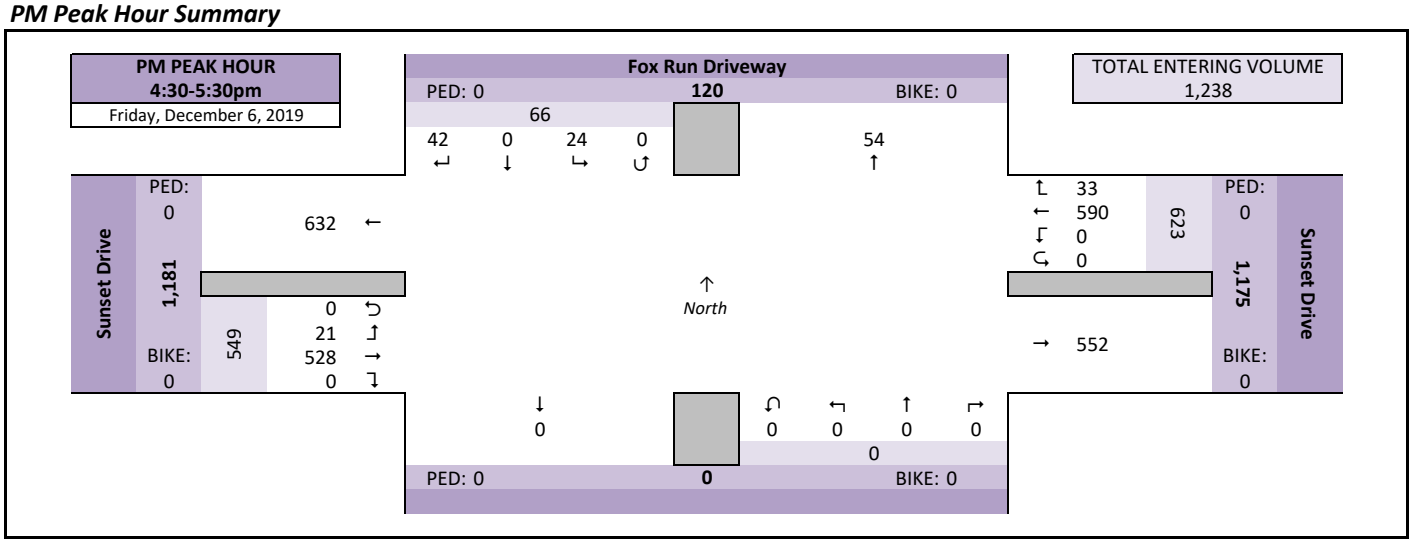
AM Peak Hour Summary



Midday (MD) Peak Hour Summary



PM Peak Hour Summary



Intersection Traffic Volume Report

Count Basics			*Page 3 of 13*
Start Date:	Thursday, December 5, 2019	Weekday	Schools in Session
Total Number of Hours Counted: 5		Non-Holiday	No Special Events

Peak Hour Volume Summary

Fox Run Driveway and Sunset Drive

All Motor Vehicles

Peak Hour Volumes, Truck Percentages, and PHFs

Thursday, December 5, 2019		From North					From East					From South					From West					
	AM Peak Hour	Fox Run Driveway					Sunset Drive										Sunset Drive					
	Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Totals
AM Peak Hour	7:00 AM	3	0	1	0	4	1	82	0	0	83	0	0	0	0	0	0	123	3	0	126	213
	7:15 AM	2	0	3	0	5	3	75	0	0	78	0	0	0	0	0	0	126	1	0	127	210
	7:30 AM	5	0	4	0	9	6	95	0	0	101	0	0	0	0	0	0	128	3	0	131	241
	7:45 AM	2	0	1	0	3	7	91	0	0	98	0	0	0	0	0	0	121	4	0	125	226
	Peak Hour Volume	12	0	9	0	21	17	343	0	0	360	0	0	0	0	0	0	498	11	0	509	890
	Rounded Hourly Volume	10	0	10	0	20	15	345	0	0	360	0	0	0	0	0	0	500	10	0	510	890
	% Single Unit Trucks	0.0	0.0	11.1	0.0	4.8	5.9	5.0	0.0	0.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	8.0	9.1	0.0	8.1	6.7
	% Heavy Trucks	0.0	0.0	11.1	0.0	4.8	0.0	0.9	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.2	0.6
	% Trucks (Total)	0.0	0.0	22.2	0.0	9.5	5.9	5.8	0.0	0.0	5.8	0.0	0.0	0.0	0.0	0.0	0.0	8.2	9.1	0.0	8.3	7.3
	Peak Hour Factor (PHF)	0.60	0.00	0.56	0.00	0.58	0.61	0.90	0.00	0.00	0.89	0.00	0.00	0.00	0.00	0.00	0.00	0.97	0.69	0.00	0.97	0.92

N/A		From North					From East					From South					From West					
	MD Peak Hour	Fox Run Driveway					Sunset Drive										Sunset Drive					
	Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Totals
Midday (MD) Peak Hour	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Peak Hour Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Rounded Hourly Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	% Single Unit Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	% Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	% Trucks (Total)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Peak Hour Factor (PHF)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Friday, December 6, 2019		From North					From East					From South					From West					
	PM Peak Hour	Fox Run Driveway					Sunset Drive										Sunset Drive					
	Start Time	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Totals
PM Peak Hour	4:30 PM	13	0	6	0	19	9	156	0	0	165	0	0	0	0	0	0	138	5	0	143	327
	4:45 PM	12	0	5	0	17	6	142	0	0	148	0	0	0	0	0	0	116	6	0	122	287
	5:00 PM	7	0	7	0	14	9	147	0	0	156	0	0	0	0	0	0	132	8	0	140	310
	5:15 PM	10	0	6	0	16	9	145	0	0	154	0	0	0	0	0	0	142	2	0	144	314
	Peak Hour Volume	42	0	24	0	66	33	590	0	0	623	0	0	0	0	0	0	528	21	0	549	1238
	Rounded Hourly Volume	40	0	25	0	65	35	590	0	0	625	0	0	0	0	0	0	530	20	0	550	1240
	% Single Unit Trucks	2.4	0.0	4.2	0.0	3.0	3.0	4.2	0.0	0.0	4.2	0.0	0.0	0.0	0.0	0.0	0.0	2.7	0.0	0.0	2.6	3.4
	% Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.5	0.5
	% Trucks (Total)	2.4	0.0	4.2	0.0	3.0	3.0	4.7	0.0	0.0	4.7	0.0	0.0	0.0	0.0	0.0	0.0	3.2	0.0	0.0	3.1	3.9
	Peak Hour Factor (PHF)	0.81	0.00	0.86	0.00	0.87	0.92	0.95	0.00	0.00	0.94	0.00	0.00	0.00	0.00	0.00	0.00	0.93	0.66	0.00	0.95	0.95

Peak Hour Pedestrian and Bicyclist Volumes

Pedestrians and Bicyclists		Crossing North Approach			Crossing East Approach			Crossing South Approach			Crossing West Approach			Total Ped & Bike Volume
		Fox Run Driveway			Sunset Drive						Sunset Drive			
	15-Minute Start Time	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	Pedestrian	Bicyclist	Total	
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0	0
MD	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0	0

Intersection Traffic Volume Report

Count Basics		*Page 5 of 13*
Start Date: Thursday, December 5, 2019	Weekday	Schools in Session
Total Number of Hours Counted: 5	Non-Holiday	No Special Events

15-Minute Motor Vehicle Data

All Motor Vehicles

Fox Run Driveway and Sunset Drive

15-Minute Motor Vehicle Data

15-Minute Time Period Start Time		From North (↓) Fox Run Driveway					From East (←) Sunset Drive					From South (↑)					From West (→) Sunset Drive					15-Min Totals	Hourly Sum	PHF
		Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total			
AM Peak Period	6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	7:00 AM	3	0	1	0	4	1	82	0	0	83	0	0	0	0	0	0	123	3	0	126	213	890	0.92
	7:15 AM	2	0	3	0	5	3	75	0	0	78	0	0	0	0	0	0	126	1	0	127	210	900	0.93
	7:30 AM	5	0	4	0	9	6	95	0	0	101	0	0	0	0	0	0	128	3	0	131	241	879	0.91
	7:45 AM	2	0	1	0	3	7	91	0	0	98	0	0	0	0	0	0	121	4	0	125	226	829	0.92
	8:00 AM	1	0	2	0	3	3	99	0	0	102	0	0	0	0	0	0	115	3	0	118	223	759	0.85
	8:15 AM	1	0	3	0	4	6	90	0	0	96	0	0	0	0	0	0	84	5	0	89	189		
	8:30 AM	2	0	3	0	5	2	84	0	0	86	0	0	0	0	0	0	97	3	0	100	191		
	8:45 AM	5	0	0	0	5	7	39	0	0	46	0	0	0	0	0	0	100	5	0	105	156		
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Midday Peak Period	10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
PM Peak Period	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	3:00 PM	12	0	7	0	19	8	97	0	0	105	0	0	0	0	0	0	137	3	0	140	264	1087	0.97
	3:15 PM	9	0	14	0	23	6	117	0	0	123	0	0	0	0	0	0	117	3	0	120	266	1161	0.86
	3:30 PM	13	0	10	0	23	10	130	0	0	140	0	0	0	0	0	0	113	4	0	117	280	1178	0.87
	3:45 PM	8	0	9	0	17	9	140	0	0	149	0	0	0	0	0	0	107	4	0	111	277	1225	0.91
	4:00 PM	20	0	15	0	35	6	162	0	0	168	0	0	0	0	0	0	129	6	0	135	338	1235	0.91
	4:15 PM	12	0	2	0	14	6	125	0	0	131	0	0	0	0	0	0	132	6	0	138	283	1207	0.92
	4:30 PM	13	0	6	0	19	9	156	0	0	165	0	0	0	0	0	0	138	5	0	143	327	1238	0.95
	4:45 PM	12	0	5	0	17	6	142	0	0	148	0	0	0	0	0	0	116	6	0	122	287	1210	0.96
	5:00 PM	7	0	7	0	14	9	147	0	0	156	0	0	0	0	0	0	132	8	0	140	310	1119	0.89
	5:15 PM	10	0	6	0	16	9	145	0	0	154	0	0	0	0	0	0	142	2	0	144	314		
	5:30 PM	10	0	10	0	20	11	155	0	0	166	0	0	0	0	0	0	111	2	0	113	299		
	5:45 PM	5	0	2	0	7	12	92	0	0	104	0	0	0	0	0	0	82	3	0	85	196		
	6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Totals		152	0	110	0	262	136	2263	0	0	2399	0	0	0	0	0	0	2350	79	0	2429	5090		

Peak Hour All Vehicle Volume Summary

Hourly Time Period Start Time		From North (↓) Fox Run Driveway					From East (←) Sunset Drive					From South (↑)					From West (→) Sunset Drive					Total Hourly Volume	PHF
		Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total		
AM	7:00 AM	12	0	9	0	21	17	343	0	0	360	0	0	0	0	0	0	498	11	0	509	890	0.92
MD	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
PM	4:30 PM	42	0	24	0	66	33	590	0	0	623	0	0	0	0	0	0	528	21	0	549	1238	0.95

Intersection Traffic Volume Report

Count Basics			*Page 9 of 13*
Start Date:	Thursday, December 5, 2019	Weekday	Schools in Session
Total Number of Hours Counted: 5		Non-Holiday	No Special Events

15-Minute Heavy Vehicle Data

Heavy Vehicles (Single-Unit Trucks, Buses & Semi-Trucks)

Fox Run Driveway and Sunset Drive

15-Minute Heavy Vehicle Data

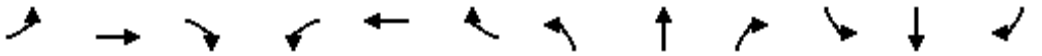
15-Minute Time Period Start Time		From North (↓) Fox Run Driveway					From East (←) Sunset Drive					From South (↑)					From West (→) Sunset Drive					15-Min Totals	Hourly Sum
		Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total		
AM Peak Period	6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	7:00 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	9	0	0	9	12	65
	7:15 AM	0	0	1	0	1	0	6	0	0	6	0	0	0	0	0	0	11	0	0	11	18	71
	7:30 AM	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	0	8	1	0	9	16	76
	7:45 AM	0	0	1	0	1	1	4	0	0	5	0	0	0	0	0	0	13	0	0	13	19	80
	8:00 AM	1	0	0	0	1	0	5	0	0	5	0	0	0	0	0	0	12	0	0	12	18	79
	8:15 AM	0	0	0	0	0	0	15	0	0	15	0	0	0	0	0	0	8	0	0	8	23	
	8:30 AM	0	0	1	0	1	0	8	0	0	8	0	0	0	0	0	0	11	0	0	11	20	
	8:45 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	15	0	0	15	18	
	9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Midday Peak Period	10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
PM Peak Period	2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	3:00 PM	0	0	1	0	1	1	6	0	0	7	0	0	0	0	0	0	5	0	0	5	13	71
	3:15 PM	1	0	1	0	2	1	12	0	0	13	0	0	0	0	0	0	7	0	0	7	22	81
	3:30 PM	1	0	0	0	1	0	10	0	0	10	0	0	0	0	0	0	10	0	0	10	21	79
	3:45 PM	0	0	1	0	1	0	9	0	0	9	0	0	0	0	0	0	4	1	0	5	15	80
	4:00 PM	1	0	0	0	1	0	13	0	0	13	0	0	0	0	0	0	9	0	0	9	23	74
	4:15 PM	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	0	13	0	0	13	20	60
	4:30 PM	1	0	0	0	1	0	15	0	0	15	0	0	0	0	0	0	6	0	0	6	22	48
	4:45 PM	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	3	0	0	3	9	31
	5:00 PM	0	0	1	0	1	1	5	0	0	6	0	0	0	0	0	0	2	0	0	2	9	26
	5:15 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	6	0	0	6	8	
	5:30 PM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0	3	0	0	3	5	
	5:45 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	4	
	6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	7:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	7:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	8:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	8:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	8:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	9:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Totals		6	0	7	0	13	5	138	0	0	143	0	0	0	0	0	0	157	2	0	159	315	

Peak Hour Heavy Vehicle Volume Summary

Hourly Time Period Start Time		From North (↓) Fox Run Driveway					From East (←) Sunset Drive					From South (↑)					From West (→) Sunset Drive					Total Hourly Volume
		Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	Right	Thru	Left	U-Tn	Total	
AM	7:00 AM	0	0	2	0	2	1	20	0	0	21	0	0	0	0	0	0	41	1	0	42	65
MD	12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:30 PM	1	0	1	0	2	1	28	0	0	29	0	0	0	0	0	0	17	0	0	17	48

APPENDIX B

Peak Hour Capacity Analysis
Synchro Worksheets



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	135	215	160	60	120	220	185	855	65	145	375	100
Future Volume (vph)	135	215	160	60	120	220	185	855	65	145	375	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	150		275	150		275	315		75	315		125
Storage Lanes	1		1	1		1	2		1	2		1
Taper Length (ft)	75			75			75			75		
Right Turn on Red			No			No			No			No
Link Speed (mph)		35			35			45			35	
Link Distance (ft)		421			990			1251			912	
Travel Time (s)		8.2			19.3			19.0			17.8	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	62%	100%	100%	62%	100%	100%	62%	100%	100%	62%
Heavy Vehicles (%)	7%	7%	7%	5%	5%	5%	3%	3%	3%	5%	5%	5%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	145	231	107	65	129	147	199	919	43	156	403	67
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pt+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	8 5	1	6		5	2	
Permitted Phases	4		4	8					6			2
Detector Phase	7	4	4	3	8	8 5	1	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	6.0	12.0	12.0	6.0	12.0		8.0	12.0	12.0	8.0	12.0	12.0
Minimum Split (s)	10.5	18.1	18.1	10.5	18.1		12.5	18.5	18.5	12.5	18.5	18.5
Total Split (s)	13.0	20.0	20.0	13.0	20.0		15.0	32.0	32.0	15.0	32.0	32.0
Total Split (%)	16.3%	25.0%	25.0%	16.3%	25.0%		18.8%	40.0%	40.0%	18.8%	40.0%	40.0%
Maximum Green (s)	8.5	13.9	13.9	8.5	13.9		10.5	25.5	25.5	10.5	25.5	25.5
Yellow Time (s)	3.5	3.6	3.6	3.5	3.6		3.5	4.5	4.5	3.5	4.5	4.5
All-Red Time (s)	1.0	2.5	2.5	1.0	2.5		1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.1	6.1	4.5	6.1		4.5	6.5	6.5	4.5	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Minimum Gap (s)	0.2	0.2	0.2	0.2	0.2		0.2	0.2	0.2	0.2	0.2	0.2
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None		None	C-Max	C-Max	Min	C-Max	C-Max
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.39	0.35	0.37	0.19	0.24	0.30	0.51	0.72	0.07	0.43	0.32	0.12
Control Delay	22.8	30.7	33.6	19.8	30.8	21.9	38.1	26.4	18.2	36.9	20.0	19.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.8	30.7	33.6	19.8	30.8	21.9	38.1	26.4	18.2	36.9	20.0	19.0
Queue Length 50th (ft)	52	54	48	22	30	56	48	201	14	38	75	22
Queue Length 95th (ft)	93	88	96	48	54	95	80	#300	38	65	119	52
Internal Link Dist (ft)		341			910			1171			832	
Turn Bay Length (ft)	150		275	150		275	315		75	315		125
Base Capacity (vph)	376	662	296	375	597	461	446	1284	574	437	1242	555
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.35	0.36	0.17	0.22	0.32	0.45	0.72	0.07	0.36	0.32	0.12

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 80

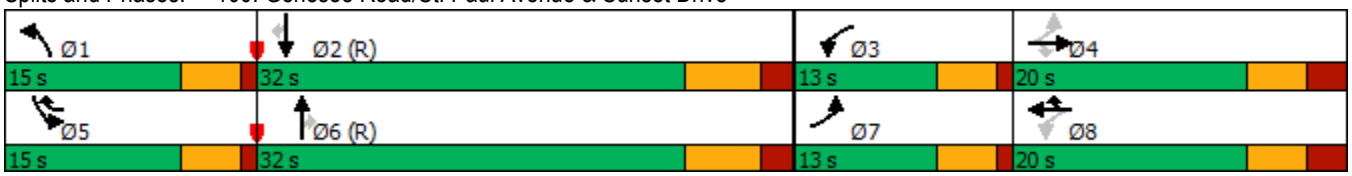
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of 1st Green

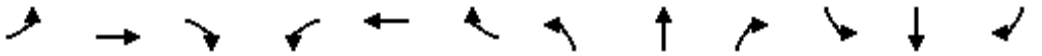
Natural Cycle: 65

Control Type: Actuated-Coordinated

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 100: Genesee Road/St. Paul Avenue & Sunset Drive

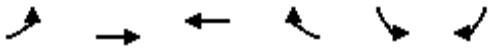




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	135	215	160	60	120	220	185	855	65	145	375	100
Future Volume (veh/h)	135	215	160	60	120	220	185	855	65	145	375	100
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1796	1796	1796	1826	1826	1826	1856	1856	1856	1826	1826	1826
Adj Flow Rate, veh/h	145	231	107	65	129	147	199	919	43	156	403	67
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	7	7	7	5	5	5	3	3	3	5	5	5
Cap, veh/h	371	628	280	317	520	387	339	1370	611	337	1352	603
Arrive On Green	0.09	0.18	0.18	0.06	0.15	0.15	0.10	0.39	0.39	0.10	0.39	0.39
Sat Flow, veh/h	1711	3413	1522	1739	3469	1547	3428	3526	1572	3374	3469	1547
Grp Volume(v), veh/h	145	231	107	65	129	147	199	919	43	156	403	67
Grp Sat Flow(s),veh/h/ln	1711	1706	1522	1739	1735	1547	1714	1763	1572	1687	1735	1547
Q Serve(g_s), s	5.6	4.7	4.9	2.5	2.6	6.3	4.4	17.2	1.4	3.5	6.4	2.2
Cycle Q Clear(g_c), s	5.6	4.7	4.9	2.5	2.6	6.3	4.4	17.2	1.4	3.5	6.4	2.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	371	628	280	317	520	387	339	1370	611	337	1352	603
V/C Ratio(X)	0.39	0.37	0.38	0.21	0.25	0.38	0.59	0.67	0.07	0.46	0.30	0.11
Avail Cap(c_a), veh/h	396	628	280	402	603	424	450	1370	611	443	1352	603
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.0	28.6	28.6	26.1	30.0	24.9	34.5	20.2	15.4	34.0	16.9	15.6
Incr Delay (d2), s/veh	0.3	0.1	0.3	0.1	0.1	0.2	0.6	2.6	0.2	0.4	0.6	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.9	3.4	3.1	1.8	1.9	4.0	3.2	11.0	0.9	2.5	4.5	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.3	28.7	29.0	26.3	30.1	25.1	35.1	22.9	15.6	34.3	17.4	15.9
LnGrp LOS	C	C	C	C	C	C	D	C	B	C	B	B
Approach Vol, veh/h		483			341			1161			626	
Approach Delay, s/veh		27.7			27.2			24.7			21.5	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.4	37.7	9.1	20.8	12.5	37.6	11.8	18.1
Change Period (Y+Rc), s	4.5	6.5	4.5	6.1	4.5	6.5	4.5	6.1
Max Green Setting (Gmax), s	10.5	25.5	8.5	13.9	10.5	25.5	8.5	13.9
Max Q Clear Time (g_c+I1), s	6.4	8.4	4.5	6.9	5.5	19.2	7.6	8.3
Green Ext Time (p_c), s	0.1	1.7	0.0	0.6	0.1	2.3	0.0	0.4

Intersection Summary	
HCM 6th Ctrl Delay	24.8
HCM 6th LOS	C



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	10	500	390	15	10	10
Future Volume (vph)	10	500	390	15	10	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	75				75	
Link Speed (mph)		35	35		30	
Link Distance (ft)		515	399		270	
Travel Time (s)		10.0	7.8		6.1	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	8%	8%	6%	6%	10%	10%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	554	440	0	22	0
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	500	390	15	10	10
Future Vol, veh/h	10	500	390	15	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	8	8	6	6	10	10
Mvmt Flow	11	543	424	16	11	11

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	440	0	-	0	997	432
Stage 1	-	-	-	-	432	-
Stage 2	-	-	-	-	565	-
Critical Hdwy	4.18	-	-	-	6.5	6.3
Critical Hdwy Stg 1	-	-	-	-	5.5	-
Critical Hdwy Stg 2	-	-	-	-	5.5	-
Follow-up Hdwy	2.272	-	-	-	3.59	3.39
Pot Cap-1 Maneuver	1089	-	-	-	262	607
Stage 1	-	-	-	-	638	-
Stage 2	-	-	-	-	553	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1089	-	-	-	258	607
Mov Cap-2 Maneuver	-	-	-	-	258	-
Stage 1	-	-	-	-	629	-
Stage 2	-	-	-	-	553	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	15.6
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1089	-	-	-	362
HCM Lane V/C Ratio	0.01	-	-	-	0.06
HCM Control Delay (s)	8.3	0	-	-	15.6
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.2

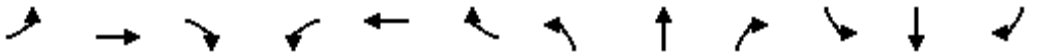
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	270	190	180	335	345	155	420	85	410	775	100
Future Volume (vph)	110	270	190	180	335	345	155	420	85	410	775	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	150		275	150		275	315		75	315		125
Storage Lanes	1		1	1		1	2		0	2		2
Taper Length (ft)	75			75			75			75		
Right Turn on Red			No			No			No			No
Link Speed (mph)		35			35			45			35	
Link Distance (ft)		421			990			1251			912	
Travel Time (s)		8.2			19.3			19.0			17.8	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor	100%	100%	62%	100%	100%	62%	100%	100%	62%	100%	100%	62%
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	2%	2%	2%	1%	1%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	117	287	125	191	356	228	165	447	56	436	824	66
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pt+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	8 5	1	6		5	2	
Permitted Phases	4		4	8					6			2
Detector Phase	7	4	4	3	8	8 5	1	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	6.0	12.0	12.0	6.0	12.0		8.0	12.0	12.0	8.0	12.0	12.0
Minimum Split (s)	10.5	18.1	18.1	10.5	18.1		12.5	18.5	18.5	12.5	18.5	18.5
Total Split (s)	13.0	24.0	24.0	13.0	24.0		15.0	27.0	27.0	21.0	33.0	33.0
Total Split (%)	15.3%	28.2%	28.2%	15.3%	28.2%		17.6%	31.8%	31.8%	24.7%	38.8%	38.8%
Maximum Green (s)	8.5	17.9	17.9	8.5	17.9		10.5	20.5	20.5	16.5	26.5	26.5
Yellow Time (s)	3.5	3.6	3.6	3.5	3.6		3.5	4.5	4.5	3.5	4.5	4.5
All-Red Time (s)	1.0	2.5	2.5	1.0	2.5		1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.1	6.1	4.5	6.1		4.5	6.5	6.5	4.5	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Minimum Gap (s)	0.2	0.2	0.2	0.2	0.2		0.2	0.2	0.2	0.2	0.2	0.2
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None		None	C-Max	C-Max	Min	C-Max	C-Max
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.34	0.49	0.48	0.53	0.51	0.34	0.46	0.40	0.11	0.74	0.61	0.11
Control Delay	22.3	34.6	37.7	26.6	33.8	18.4	40.0	25.6	24.3	41.7	24.7	19.7

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.3	34.6	37.7	26.6	33.8	18.4	40.0	25.6	24.3	41.7	24.7	19.7
Queue Length 50th (ft)	44	74	62	76	94	85	43	97	21	114	180	22
Queue Length 95th (ft)	77	106	109	119	130	126	72	156	54	160	273	55
Internal Link Dist (ft)		341			910			1171			832	
Turn Bay Length (ft)	150		275	150		275	315		75	315		125
Base Capacity (vph)	358	738	330	362	792	677	424	1104	494	673	1347	602
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.39	0.38	0.53	0.45	0.34	0.39	0.40	0.11	0.65	0.61	0.11

Intersection Summary

Area Type: Other
Cycle Length: 85
Actuated Cycle Length: 85
Offset: 79 (93%), Referenced to phase 2:SBT and 6:NBT, Start of 1st Green
Natural Cycle: 65
Control Type: Actuated-Coordinated

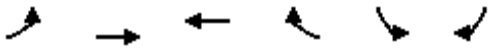
Splits and Phases: 100: Genesee Road/St. Paul Avenue & Sunset Drive



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	270	190	180	335	345	155	420	85	410	775	100
Future Volume (veh/h)	110	270	190	180	335	345	155	420	85	410	775	100
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1870	1870	1870	1870	1870	1870	1885	1885	1885
Adj Flow Rate, veh/h	117	287	125	191	356	228	165	447	56	436	824	66
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	2	2	2	2	2	2	1	1	1
Cap, veh/h	277	498	222	326	593	502	319	1261	562	522	1478	659
Arrive On Green	0.07	0.14	0.14	0.10	0.17	0.17	0.09	0.35	0.35	0.15	0.41	0.41
Sat Flow, veh/h	1767	3526	1572	1781	3554	1585	3456	3554	1585	3483	3582	1598
Grp Volume(v), veh/h	117	287	125	191	356	228	165	447	56	436	824	66
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1781	1777	1585	1728	1777	1585	1742	1791	1598
Q Serve(g_s), s	4.7	6.5	6.3	7.7	7.9	9.8	3.9	7.9	2.0	10.3	14.9	2.2
Cycle Q Clear(g_c), s	4.7	6.5	6.3	7.7	7.9	9.8	3.9	7.9	2.0	10.3	14.9	2.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	277	498	222	326	593	502	319	1261	562	522	1478	659
V/C Ratio(X)	0.42	0.58	0.56	0.59	0.60	0.45	0.52	0.35	0.10	0.84	0.56	0.10
Avail Cap(c_a), veh/h	322	742	331	326	748	571	427	1261	562	676	1478	659
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.2	34.1	34.1	27.7	32.8	23.2	36.8	20.2	18.3	35.1	19.1	15.3
Incr Delay (d2), s/veh	0.4	0.4	0.8	1.8	0.4	0.2	0.5	0.8	0.4	5.6	1.5	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.5	4.9	4.3	6.0	6.0	6.3	2.8	5.6	1.4	8.2	10.1	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.6	34.5	34.9	29.6	33.2	23.4	37.3	21.0	18.7	40.8	20.6	15.6
LnGrp LOS	C	C	C	C	C	C	D	C	B	D	C	B
Approach Vol, veh/h		529			775			668			1326	
Approach Delay, s/veh		33.3			29.4			24.8			27.0	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.3	41.6	13.0	18.1	17.2	36.7	10.8	20.3
Change Period (Y+Rc), s	4.5	6.5	4.5	6.1	4.5	6.5	4.5	6.1
Max Green Setting (Gmax), s	10.5	26.5	8.5	17.9	16.5	20.5	8.5	17.9
Max Q Clear Time (g_c+I1), s	5.9	16.9	9.7	8.5	12.3	9.9	6.7	11.8
Green Ext Time (p_c), s	0.1	2.8	0.0	1.0	0.4	1.4	0.0	1.1

Intersection Summary	
HCM 6th Ctrl Delay	28.1
HCM 6th LOS	C



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	20	545	555	35	25	40
Future Volume (vph)	20	545	555	35	25	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	75				75	
Link Speed (mph)		35	35		30	
Link Distance (ft)		525	399		270	
Travel Time (s)		10.2	7.8		6.1	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	3%	5%	5%	3%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	595	621	0	68	0
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

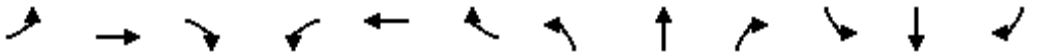
Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	20	545	555	35	25	40
Future Vol, veh/h	20	545	555	35	25	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	3	3	5	5	3	3
Mvmt Flow	21	574	584	37	26	42

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	621	0	-	0	1219	603
Stage 1	-	-	-	-	603	-
Stage 2	-	-	-	-	616	-
Critical Hdwy	4.13	-	-	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.227	-	-	-	3.527	3.327
Pot Cap-1 Maneuver	955	-	-	-	198	497
Stage 1	-	-	-	-	544	-
Stage 2	-	-	-	-	537	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	955	-	-	-	192	497
Mov Cap-2 Maneuver	-	-	-	-	192	-
Stage 1	-	-	-	-	527	-
Stage 2	-	-	-	-	537	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	19.9
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	955	-	-	-	309
HCM Lane V/C Ratio	0.022	-	-	-	0.221
HCM Control Delay (s)	8.9	0	-	-	19.9
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.8



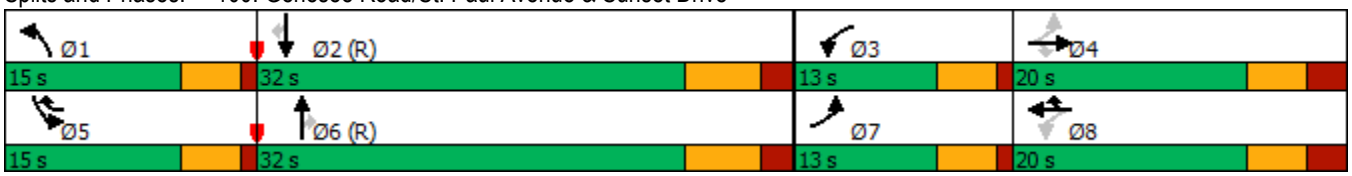
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	135	215	155	60	135	220	195	870	65	140	370	100
Future Volume (vph)	135	215	155	60	135	220	195	870	65	140	370	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	150		275	150		275	315		75	315		125
Storage Lanes	1		1	1		1	2		1	2		1
Taper Length (ft)	75			75			75			75		
Right Turn on Red			No			No			No			No
Link Speed (mph)		35			35			45			35	
Link Distance (ft)		421			990			1251			912	
Travel Time (s)		8.2			19.3			19.0			17.8	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	62%	100%	100%	62%	100%	100%	62%	100%	100%	62%
Heavy Vehicles (%)	7%	7%	7%	5%	5%	5%	3%	3%	3%	5%	5%	5%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	145	231	103	65	145	147	210	935	43	151	398	67
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pt+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	8 5	1	6		5	2	
Permitted Phases	4		4	8					6			2
Detector Phase	7	4	4	3	8	8 5	1	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	6.0	12.0	12.0	6.0	12.0		8.0	12.0	12.0	8.0	12.0	12.0
Minimum Split (s)	10.5	18.1	18.1	10.5	18.1		12.5	18.5	18.5	12.5	18.5	18.5
Total Split (s)	13.0	20.0	20.0	13.0	20.0		15.0	32.0	32.0	15.0	32.0	32.0
Total Split (%)	16.3%	25.0%	25.0%	16.3%	25.0%		18.8%	40.0%	40.0%	18.8%	40.0%	40.0%
Maximum Green (s)	8.5	13.9	13.9	8.5	13.9		10.5	25.5	25.5	10.5	25.5	25.5
Yellow Time (s)	3.5	3.6	3.6	3.5	3.6		3.5	4.5	4.5	3.5	4.5	4.5
All-Red Time (s)	1.0	2.5	2.5	1.0	2.5		1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.1	6.1	4.5	6.1		4.5	6.5	6.5	4.5	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Minimum Gap (s)	0.2	0.2	0.2	0.2	0.2		0.2	0.2	0.2	0.2	0.2	0.2
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None		None	C-Max	C-Max	Min	C-Max	C-Max
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.40	0.35	0.35	0.19	0.27	0.30	0.53	0.73	0.07	0.42	0.32	0.12
Control Delay	22.9	30.7	33.3	19.8	31.1	22.0	38.4	26.7	18.2	36.8	20.0	19.1

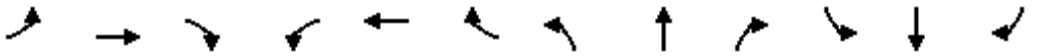
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.9	30.7	33.3	19.8	31.1	22.0	38.4	26.7	18.2	36.8	20.0	19.1
Queue Length 50th (ft)	52	54	46	22	34	56	52	205	14	37	74	22
Queue Length 95th (ft)	93	88	93	48	58	95	84	#312	38	63	117	52
Internal Link Dist (ft)		341			910			1171			832	
Turn Bay Length (ft)	150		275	150		275	315		75	315		125
Base Capacity (vph)	373	662	296	375	597	461	446	1286	575	437	1237	553
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.35	0.35	0.17	0.24	0.32	0.47	0.73	0.07	0.35	0.32	0.12

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of 1st Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 100: Genesee Road/St. Paul Avenue & Sunset Drive

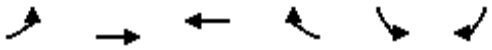




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	135	215	155	60	135	220	195	870	65	140	370	100
Future Volume (veh/h)	135	215	155	60	135	220	195	870	65	140	370	100
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1796	1796	1796	1826	1826	1826	1856	1856	1856	1826	1826	1826
Adj Flow Rate, veh/h	145	231	103	65	145	147	210	935	43	151	398	67
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	7	7	7	5	5	5	3	3	3	5	5	5
Cap, veh/h	364	628	280	317	520	387	340	1370	611	337	1351	603
Arrive On Green	0.09	0.18	0.18	0.06	0.15	0.15	0.10	0.39	0.39	0.10	0.39	0.39
Sat Flow, veh/h	1711	3413	1522	1739	3469	1547	3428	3526	1572	3374	3469	1547
Grp Volume(v), veh/h	145	231	103	65	145	147	210	935	43	151	398	67
Grp Sat Flow(s),veh/h/ln	1711	1706	1522	1739	1735	1547	1714	1763	1572	1687	1735	1547
Q Serve(g_s), s	5.6	4.7	4.7	2.5	3.0	6.3	4.7	17.7	1.4	3.4	6.3	2.2
Cycle Q Clear(g_c), s	5.6	4.7	4.7	2.5	3.0	6.3	4.7	17.7	1.4	3.4	6.3	2.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	364	628	280	317	520	387	340	1370	611	337	1351	603
V/C Ratio(X)	0.40	0.37	0.37	0.20	0.28	0.38	0.62	0.68	0.07	0.45	0.29	0.11
Avail Cap(c_a), veh/h	390	628	280	402	603	424	450	1370	611	443	1351	603
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.0	28.6	28.6	26.1	30.2	24.9	34.6	20.3	15.4	33.9	16.8	15.6
Incr Delay (d2), s/veh	0.3	0.1	0.3	0.1	0.1	0.2	0.7	2.8	0.2	0.3	0.6	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.9	3.4	3.0	1.8	2.2	4.0	3.4	11.2	0.9	2.4	4.4	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.3	28.7	28.9	26.3	30.3	25.1	35.3	23.1	15.6	34.3	17.4	16.0
LnGrp LOS	C	C	C	C	C	C	D	C	B	C	B	B
Approach Vol, veh/h		479			357			1188			616	
Approach Delay, s/veh		27.7			27.4			25.0			21.4	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.4	37.7	9.1	20.8	12.5	37.6	11.8	18.1
Change Period (Y+Rc), s	4.5	6.5	4.5	6.1	4.5	6.5	4.5	6.1
Max Green Setting (Gmax), s	10.5	25.5	8.5	13.9	10.5	25.5	8.5	13.9
Max Q Clear Time (g_c+I1), s	6.7	8.3	4.5	6.7	5.4	19.7	7.6	8.3
Green Ext Time (p_c), s	0.1	1.6	0.0	0.7	0.1	2.2	0.0	0.4

Intersection Summary	
HCM 6th Ctrl Delay	25.0
HCM 6th LOS	C



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	20	500	390	20	5	5
Future Volume (vph)	20	500	390	20	5	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	75				75	
Link Speed (mph)		35	35		30	
Link Distance (ft)		515	440		270	
Travel Time (s)		10.0	8.6		6.1	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	8%	8%	6%	6%	10%	10%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	565	446	0	10	0
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

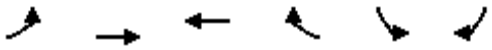
Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	20	500	390	20	5	5
Future Vol, veh/h	20	500	390	20	5	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	8	8	6	6	10	10
Mvmt Flow	22	543	424	22	5	5

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	446	0	-	0	1022	435
Stage 1	-	-	-	-	435	-
Stage 2	-	-	-	-	587	-
Critical Hdwy	4.18	-	-	-	6.5	6.3
Critical Hdwy Stg 1	-	-	-	-	5.5	-
Critical Hdwy Stg 2	-	-	-	-	5.5	-
Follow-up Hdwy	2.272	-	-	-	3.59	3.39
Pot Cap-1 Maneuver	1083	-	-	-	253	605
Stage 1	-	-	-	-	636	-
Stage 2	-	-	-	-	540	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1083	-	-	-	246	605
Mov Cap-2 Maneuver	-	-	-	-	246	-
Stage 1	-	-	-	-	618	-
Stage 2	-	-	-	-	540	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	15.6
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1083	-	-	-	350
HCM Lane V/C Ratio	0.02	-	-	-	0.031
HCM Control Delay (s)	8.4	0	-	-	15.6
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	505	405	25	0	5
Future Volume (vph)	0	505	405	25	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	0	1
Taper Length (ft)	75				75	
Link Speed (mph)		35	35		30	
Link Distance (ft)		440	81		313	
Travel Time (s)		8.6	1.6		7.1	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	8%	8%	6%	6%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	549	467	0	0	5
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

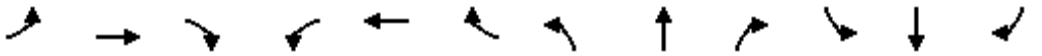
Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	505	405	25	0	5
Future Vol, veh/h	0	505	405	25	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	8	8	6	6	2	2
Mvmt Flow	0	549	440	27	0	5

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	454
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	0	-	-	-	0	606
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	606
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	11
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	606
HCM Lane V/C Ratio	-	-	-	0.009
HCM Control Delay (s)	-	-	-	11
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0



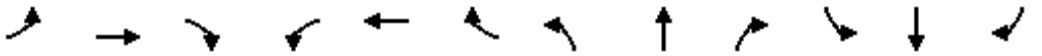
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	270	195	180	350	345	165	435	85	415	780	100
Future Volume (vph)	110	270	195	180	350	345	165	435	85	415	780	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	150		275	150		275	315		75	315		125
Storage Lanes	1		1	1		1	2		0	2		2
Taper Length (ft)	75			75			75			75		
Right Turn on Red			No			No			No			No
Link Speed (mph)		35			35			45			35	
Link Distance (ft)		421			990			1251			912	
Travel Time (s)		8.2			19.3			19.0			17.8	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor	100%	100%	62%	100%	100%	62%	100%	100%	62%	100%	100%	62%
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	2%	2%	2%	1%	1%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	117	287	129	191	372	228	176	463	56	441	830	66
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pt+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	8 5	1	6		5	2	
Permitted Phases	4		4	8					6			2
Detector Phase	7	4	4	3	8	8 5	1	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	6.0	12.0	12.0	6.0	12.0		8.0	12.0	12.0	8.0	12.0	12.0
Minimum Split (s)	10.5	18.1	18.1	10.5	18.1		12.5	18.5	18.5	12.5	18.5	18.5
Total Split (s)	13.0	24.0	24.0	13.0	24.0		15.0	27.0	27.0	21.0	33.0	33.0
Total Split (%)	15.3%	28.2%	28.2%	15.3%	28.2%		17.6%	31.8%	31.8%	24.7%	38.8%	38.8%
Maximum Green (s)	8.5	17.9	17.9	8.5	17.9		10.5	20.5	20.5	16.5	26.5	26.5
Yellow Time (s)	3.5	3.6	3.6	3.5	3.6		3.5	4.5	4.5	3.5	4.5	4.5
All-Red Time (s)	1.0	2.5	2.5	1.0	2.5		1.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	6.1	6.1	4.5	6.1		4.5	6.5	6.5	4.5	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Minimum Gap (s)	0.2	0.2	0.2	0.2	0.2		0.2	0.2	0.2	0.2	0.2	0.2
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None	None	None	None	None		None	C-Max	C-Max	Min	C-Max	C-Max
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio	0.35	0.49	0.49	0.53	0.53	0.34	0.48	0.42	0.11	0.75	0.62	0.11
Control Delay	22.5	34.6	38.2	26.7	34.2	18.3	40.3	25.9	24.3	41.9	24.9	19.8

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.5	34.6	38.2	26.7	34.2	18.3	40.3	25.9	24.3	41.9	24.9	19.8
Queue Length 50th (ft)	44	74	64	76	100	85	46	102	21	115	182	22
Queue Length 95th (ft)	77	106	112	119	136	126	76	162	54	162	275	55
Internal Link Dist (ft)		341			910			1171			832	
Turn Bay Length (ft)	150		275	150		275	315		75	315		125
Base Capacity (vph)	351	738	330	362	792	677	424	1103	493	673	1343	600
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.39	0.39	0.53	0.47	0.34	0.42	0.42	0.11	0.66	0.62	0.11

Intersection Summary

Area Type: Other
Cycle Length: 85
Actuated Cycle Length: 85
Offset: 79 (93%), Referenced to phase 2:SBT and 6:NBT, Start of 1st Green
Natural Cycle: 65
Control Type: Actuated-Coordinated

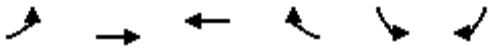
Splits and Phases: 100: Genesee Road/St. Paul Avenue & Sunset Drive



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	270	195	180	350	345	165	435	85	415	780	100
Future Volume (veh/h)	110	270	195	180	350	345	165	435	85	415	780	100
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1870	1870	1870	1870	1870	1870	1885	1885	1885
Adj Flow Rate, veh/h	117	287	129	191	372	228	176	463	56	441	830	66
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	2	2	2	2	2	2	1	1	1
Cap, veh/h	273	498	222	326	593	504	320	1256	560	527	1476	658
Arrive On Green	0.07	0.14	0.14	0.10	0.17	0.17	0.09	0.35	0.35	0.15	0.41	0.41
Sat Flow, veh/h	1767	3526	1572	1781	3554	1585	3456	3554	1585	3483	3582	1598
Grp Volume(v), veh/h	117	287	129	191	372	228	176	463	56	441	830	66
Grp Sat Flow(s),veh/h/ln	1767	1763	1572	1781	1777	1585	1728	1777	1585	1742	1791	1598
Q Serve(g_s), s	4.7	6.5	6.5	7.7	8.3	9.7	4.1	8.2	2.0	10.5	15.1	2.2
Cycle Q Clear(g_c), s	4.7	6.5	6.5	7.7	8.3	9.7	4.1	8.2	2.0	10.5	15.1	2.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	273	498	222	326	593	504	320	1256	560	527	1476	658
V/C Ratio(X)	0.43	0.58	0.58	0.59	0.63	0.45	0.55	0.37	0.10	0.84	0.56	0.10
Avail Cap(c_a), veh/h	318	742	331	326	748	573	427	1256	560	676	1476	658
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.3	34.1	34.1	27.7	33.0	23.1	36.9	20.4	18.4	35.1	19.1	15.3
Incr Delay (d2), s/veh	0.4	0.4	0.9	1.8	0.4	0.2	0.5	0.8	0.4	5.9	1.6	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.5	4.9	4.4	6.0	6.3	6.3	3.0	5.9	1.4	8.3	10.2	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.7	34.5	35.0	29.6	33.4	23.3	37.4	21.3	18.8	40.9	20.7	15.6
LnGrp LOS	C	C	D	C	C	C	D	C	B	D	C	B
Approach Vol, veh/h		533			791			695			1337	
Approach Delay, s/veh		33.4			29.6			25.2			27.1	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.4	41.5	13.0	18.1	17.4	36.5	10.8	20.3
Change Period (Y+Rc), s	4.5	6.5	4.5	6.1	4.5	6.5	4.5	6.1
Max Green Setting (Gmax), s	10.5	26.5	8.5	17.9	16.5	20.5	8.5	17.9
Max Q Clear Time (g_c+I1), s	6.1	17.1	9.7	8.5	12.5	10.2	6.7	11.7
Green Ext Time (p_c), s	0.1	2.8	0.0	1.0	0.4	1.4	0.0	1.1

Intersection Summary	
HCM 6th Ctrl Delay	28.3
HCM 6th LOS	C



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	35	540	555	40	35	45
Future Volume (vph)	35	540	555	40	35	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	75				75	
Link Speed (mph)		35	35		30	
Link Distance (ft)		525	440		270	
Travel Time (s)		10.2	8.6		6.1	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	3%	5%	5%	3%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	605	626	0	84	0
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

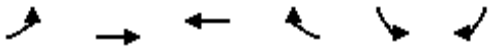
Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	35	540	555	40	35	45
Future Vol, veh/h	35	540	555	40	35	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	3	3	5	5	3	3
Mvmt Flow	37	568	584	42	37	47

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	626	0	-	0	1247	605
Stage 1	-	-	-	-	605	-
Stage 2	-	-	-	-	642	-
Critical Hdwy	4.13	-	-	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.227	-	-	-	3.527	3.327
Pot Cap-1 Maneuver	951	-	-	-	191	496
Stage 1	-	-	-	-	543	-
Stage 2	-	-	-	-	522	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	951	-	-	-	180	496
Mov Cap-2 Maneuver	-	-	-	-	180	-
Stage 1	-	-	-	-	512	-
Stage 2	-	-	-	-	522	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	23.2
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	951	-	-	-	281
HCM Lane V/C Ratio	0.039	-	-	-	0.3
HCM Control Delay (s)	8.9	0	-	-	23.2
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	1.2



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	575	590	25	0	5
Future Volume (vph)	0	575	590	25	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	0	1
Taper Length (ft)	75				75	
Link Speed (mph)		35	35		30	
Link Distance (ft)		440	81		313	
Travel Time (s)		8.6	1.6		7.1	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	3%	5%	5%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	605	647	0	0	5
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	575	590	25	0	5
Future Vol, veh/h	0	575	590	25	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	3	3	5	5	2	2
Mvmt Flow	0	605	621	26	0	5

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	634
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	0	-	-	-	0	479
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	479
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	12.6
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	479
HCM Lane V/C Ratio	-	-	-	0.011
HCM Control Delay (s)	-	-	-	12.6
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0

Figure 2 - 6. Guideline for determining the need for a major-road right-turn bay at a two-way stop-controlled intersection.

INPUT

Roadway geometry:	2-lane roadway

Variable	Value
Major-road speed, mph:	35
Major-road volume (one direction), veh/h:	615
Right-turn volume, veh/h:	25

OUTPUT

Variable	Value
Limiting right-turn volume, veh/h:	97
Guidance for determining the need for a major-road right-turn bay for a 2-lane roadway:	
Do NOT add right-turn bay.