



Appendix G.

Traffic Study

TRENTON-MERCER AIRPORT

REPLACEMENT TERMINAL

TRAFFIC ENGINEERING REPORT



August 2019
Revised September 2020



Prepared for
Mercer County
and
Trenton-Mercer Airport

Prepared by
Urban Engineers, Inc.
URBAN
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I. Traffic Analysis

Urban performed a traffic analysis to determine the anticipated traffic impacts at study area intersections as a result of the proposed project and the anticipated increase in vehicular traffic to and from the airport.

II. Study Area and Data Collection

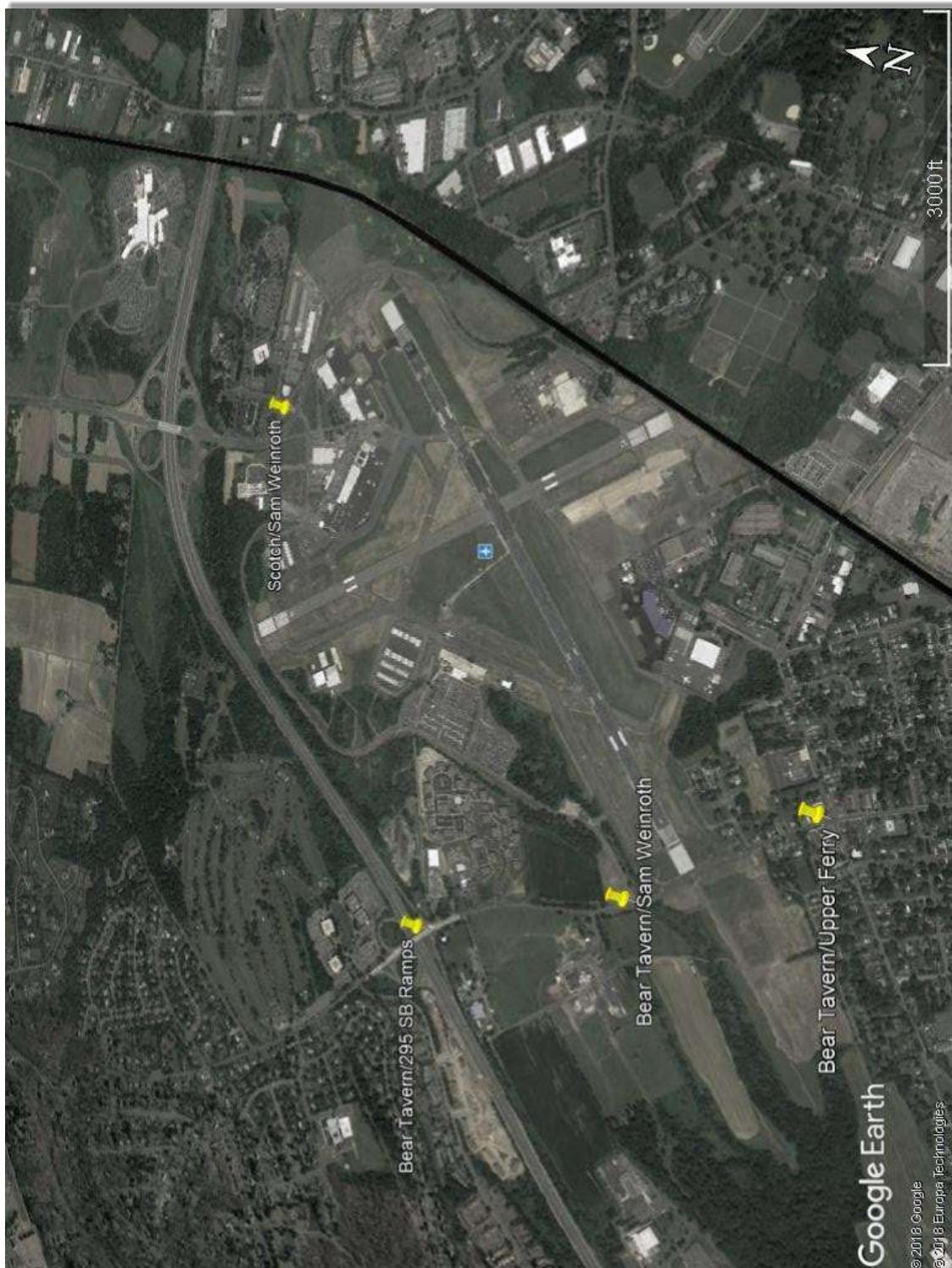
The airport's passenger terminal has two ingress and egress points from the main roadway within the airport, Sam Weinroth Road. These access points are the intersections of Sam Weinroth with Bear Tavern Road in the south and Scotch Road in the north.

The study area consists of the following six (6) intersections:

- Bear Tavern Road & I-295 Southbound Ramps (signalized)
- Bear Tavern Road & Sam Weinroth Road (unsignalized)
- Bear Tavern Road/Grand Avenue & Upper Ferry Road (signalized)
- Scotch Road & Sam Weinroth Road (signalized)
- Lockheed Avenue/Scotch Road Ramp & Sam Weinroth Road (unsignalized)
- Scotch Road Ramp & Sam Weinroth Road (unsignalized)

Weekday turning movement counts were performed at these locations on Wednesday, November 14, 2018 between the hours of 7:00 AM – 9:00 AM and 4:00 PM – 6:00 PM. Saturday counts were performed at the same locations on Saturday, November 17, 2019 between the hours of 12:00 PM - 2:00 PM. Cars, Heavy Trucks and Pedestrians were counted at each location during 15 minute intervals. In addition, portable Automatic Traffic Recorder (ATR) counts were performed at four locations, three on Bear Tavern Road and one on Sam Weinroth Road. The count data was used to determine peak hour volumes for all locations. **Figure 1** shows the project study area.

Figure 1: Study Area



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III. Existing Conditions

2018 Traffic Count Volumes

The count data for the study intersections was examined in order to determine the existing weekday morning and afternoon peak hour traffic volumes, as well as the Saturday midday peak hour. Based on 15-minute count periods, the weekday morning peak hour was determined to occur between 8:00 AM – 9:00 AM. The weekday afternoon peak hour was determined to occur between 4:30 PM – 5:30 PM. Lastly, the Saturday midday peak hour was determined to occur between 12:45 PM – 1:45 PM for all the intersections located on Bear Tavern Road, and between 12:30 PM – 1:30 PM for the remaining locations. **Figures X1-1, X1-2 & X1-3** show volume figures for the 2018 existing weekday morning, weekday afternoon and Saturday midday peak hours respectively. The count data is included in **Appendix X2**.

IV. Future without Airport Development Conditions

In order to study the design year (2035) without development conditions, the future without development volumes were determined.

A general background growth rate of 5% was applied to all non-airport traffic in the network based on demographic forecasts, and represents the organic growth in traffic between 2018 and 2035.

In discussions with Mercer County Public Works, it was noted that there is a substantial amount of new/anticipated development near the airport that would likely impact study area intersections. However, calculating trips for each new trip generator was deemed not practical. Instead it was decided to add 100 vehicles for each peak hour to the northbound and southbound through traffic at all the intersections along Bear Tavern Avenue and also along Scotch Road. **Figure X1-4** shows these additional new development volumes. **Figures X1-5, X1-6 & X1-7** (2035 Without Airport Development traffic volumes) show the 2018 non-airport traffic volumes grown by 5% total and with the new development traffic from Figure 5 included for the weekday morning, weekday afternoon and Saturday midday peak hours respectively.

V. Future with Airport Development Conditions

In order to study the design year (2035) future with development conditions, the future with development volumes were determined. This was done by adding the trips generated by the proposed development to the future without development volumes.

Trip Generation

To determine the growth in trips to the airport between 2018 and 2035, the projected yearly enplanements for the airport were analyzed. Data from Table 2-13 (contained in section 2.9) of the Trenton-Mercer Airport Master Plan (shown below) was used to extrapolate a growth rate that could be applied to the existing 2018 airport traffic to give us projected 2035 traffic volumes for the airport. **Table 1** shows the steps taken to calculate the overall growth in enplanements between 2018 and 2035.

Table 2-13: Aviation Demand Forecast Summary				
	Actual 2014	FORECAST		
		2020	2025	2035
ENPLANEMENTS				
Airline	377,544	358,728	396,358	476,507

Table 1: Airport Traffic Growth Rates

2014 Enplanements	377,544
2020 Enplanements	358,728
Growth Rate	-0.85%/Yr
2018 Calculated Enplanements	364,893
2035 Forecasted Enplanements	476,507
Overall Growth between 2018 & 2035	30.59%

Trip Distribution & Assignment

The calculated overall growth rate of 30.59% was applied to the airport traffic for all three peak periods to calculate the “new” trips to and from the airport. This growth rate equates to a 1.8% per year growth and is directly proportional to the approved forecast of enplanements over the same period. These trips were then distributed throughout the network based on existing traffic patterns, a review of zip codes for airport users and engineering judgement. **Figures X1-8, X1-9 & X1-10** show these new trips for the weekday morning, weekday afternoon and Saturday midday peak hours respectively.

Future Volumes with Airport Development

The trips generated by the development at the airport were added to the future without development volumes giving the future with development volumes.

Figures X1-11, X1-12 & X1-13 show the 2035 “With Development” volumes for the weekday morning, weekday afternoon and Saturday midday peak hours respectively.

VI. Capacity & Queuing Analysis

Capacity analysis was conducted for the study area intersections using SYNCHRO software (Version 10). SYNCHRO takes into account the geometry, speed limits, turning-lane lengths, peak hour factors, volumes, heavy vehicle percentages, and signal phasing and timings. The SYNCHRO program analyzes the information with equations to determine the level of service (LOS) for the intersections numerically.

In order to consider the impact of new trips to the study network, the most desirable scenario would be that the intersection overall operates as closely as possible under “with development” conditions to “without development” conditions. In addition, it is desirable that individual lane groups operate as closely as possible under “with development” conditions to “without development” conditions.

Matrix Tables detailing the delay per vehicle and Level-of-Service (LOS) overall and for each lane group at each intersection are shown in the following sections, queue information is also included. Copies of the SYNCHRO analysis worksheets are included in **Appendix X3**.

Bear Tavern Road & I-295 Southbound Ramps

Overall, this signalized intersection operates at an acceptable level of service (LOS D or better) under existing, future “without development” and future “with development” scenarios. The eastbound left/through movement experiences delay (LOS E) under all three scenarios during the weekday morning peak period. In addition, the southbound left-turn movement suffers from delay during the weekday morning peak period during both future scenarios.

Signalized		Bear Tavern Road & I-295 Southbound Ramps									
Approach	Lane Group	Weekday Morning Peak Hour			Weekday Afternoon Peak Hour			Weekend Saturday Peak Hour			
		2019		2035	2019		2035		2019		
		Existing	w/o Dev	w/Dev	Existing	w/o Dev	w/Dev	Existing	w/o Dev	w/Dev	
EB (I-295)	Left, Thru	E	E	E	D	D	D	D	D	D	
		61.5	66.0	66.0	46.7	46.7	46.7	48.6	49.4	49.4	
	Right	A	A	A	A	A	A	A	A	A	
		0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	
NB	Thru	C	D	D	C	C	C	B	B	B	
		23.2	42.8	48.2	25.0	32.1	33.0	12.9	15.8	16.2	
SB	Left	B	E	E	B	C	D	A	A	A	
		14.5	57.1	70.7	11.3	34.3	42.4	4.9	5.8	5.9	
	Thru	B	B	B	A	A	A	A	A	A	
		11.7	15.1	15.8	6.4	7.8	8.0	6.0	6.8	6.9	
Overall		C	D	D	B	C	C	B	B	B	
		22.8	35.3	38.7	17.1	23.7	25.3	15.6	16.3	16.4	

Bear Tavern Road & Sam Weinroth Road

Overall, this unsignalized intersection operates at an acceptable level (LOS C or better) under existing, future “without development” and future “with development” scenarios for all three study periods, with the exception of the weekday afternoon peak hour, which operates with heavy delay (LOS F) for the existing 2019 as well as the 2035 “without-“ and “with development” scenarios. In addition, the westbound approach shows heavy delay (LOS E or worse) during most of the peak periods and scenarios. This westbound approach is one of the main egress points for the airport, but Bear Tavern Road is also a critical link in the county’s transportation linking the interstate highway to Ewing Twp and the western edge of the Capital region. As such, left-turning traffic from Sam Weinroth has to find acceptable gaps in traffic travelling in both directions on Bear Tavern Road. Preliminary analysis show that signalizing this location may provide a non-failing LOS for Sam Weinroth road users where the analysis

shows extremely heavy delay during the weekday afternoon peak period under the 2019 existing, and 2035 “without-“ and “with development” scenarios. In addition, a modern roundabout may also provide acceptable operations at this location for both scenarios.

Unsignalized		Bear Tavern Road & Sam Weinroth Road								
Approach	Lane Group	Weekday Morning Peak Hour			Weekday Afternoon Peak Hour			Weekend Saturday Peak Hour		
		2019	2035		2019	2035		2019	2035	
		Existing	w/o Dev	w/Dev	Existing	w/o Dev	w/Dev	Existing	w/o Dev	w/Dev
WB	Left	F 129.5	F 321.9	F 588.4	F 184.2	F 432.7	F 862.6	C 22.5	D 32.6	E 38.2
	Right	B 15.0	C 17.7	C 19.7	C 19.6	D 25.2	D 32.2	B 12.2	B 13.8	B 14.4
NB	Thru, Right	-	-	-	-	-	-	-	-	-
SB	Left	A 9.6	B 10.3	B 10.7	B 10.2	B 11.0	B 11.5	A 8.6	A 9.1	A 9.2
	Thru	-	-	-	-	-	-	-	-	-
Overall		A 5.5	B 10.3	C 22.1	B 13.2	C 24.4	F 57.4	A 2.0	A 2.0	A 2.6

Bear Tavern Road/Grand Avenue & Upper Ferry Road

Overall, this signalized intersection operates with delay (LOS E or worse) under future “without development” and future “with development” scenarios for the weekday morning and afternoon peak hours. In addition, the westbound, northbound and southbound approaches all show delay (LOS E or worse) during the weekday morning or afternoon peak hours for the existing, future “without development” and future “with development” scenarios. This delay generally seems to be related to background growth rather than airport traffic. Signal timing split modifications or other signal upgrades could potentially mitigate some of this delay, although a larger scale infrastructure project which is beyond the scope of this study (e.g., The West Trenton Bypass) is likely needed to mitigate the delay to a non-failing LOS.

Signalized		Bear Tavern Road/Grand Avenue & Upper Ferry Road								
Approach	Lane Group	Weekday Morning Peak Hour			Weekday Afternoon Peak Hour			Weekend Saturday Peak Hour		
		2019	2035		2019	2035		2019	2035	
		Existing	w/o Dev	w/Dev	Existing	w/o Dev	w/Dev	Existing	w/o Dev	w/Dev
EB	Left	C 33.3	C 34.0	D 35.4	C 28.9	C 28.9	C 30.4	C 29.6	C 29.4	C 30.0
	Thru, Right	C 25.4	C 25.6	C 25.5	C 24.8	C 24.5	C 24.4	C 25.1	C 24.9	C 24.7
WB	Left, Thru	C 31.7	C 31.9	C 31.7	C 32.7	C 32.5	C 32.3	C 33.7	C 33.5	C 33.2
	Right	E 56.2	E 59.6	E 60.4	D 47.3	D 48.0	D 48.3	D 39.2	D 39.3	D 39.2
NB	Left, Thru, Right	D 44.2	E 69.3	E 76.7	D 51.8	F 101.2	F 107.5	D 39.2	D 50.0	D 50.4
SB	Left	C 31.3	D 36.3	D 37.2	D 40.2	D 43.3	D 44.2	C 20.8	C 23.8	C 24.0
	Thru, Right	E 57.1	F 179.9	F 191.2	D 43.0	E 71.0	E 79.5	D 20.7	D 26.5	D 26.9
Overall		D 44.3	F 89.6	F 94.9	D 41.9	E 62.5	E 66.1	C 30.0	C 34.0	C 34.2

Scotch Road & Sam Weinroth Road

This signalized intersection operates acceptably (LOS C or better) overall for all existing and future scenarios, under all three study peak periods. All approaches operate acceptably also, with the exception of the westbound left movement during the weekday morning peak period, which operates at LOS E during the 2035 “with development” scenario.

Signalized		Scotch Road & Sam Weinroth Road								
Approach	Lane Group	Weekday Morning Peak Hour			Weekday Afternoon Peak Hour			Weekend Saturday Peak Hour		
		2019	2035		2019	2035		2019	2035	
		Existing	w/o Dev	w/Dev	Existing	w/o Dev	w/Dev	Existing	w/o Dev	w/Dev
EB	Left	C 23.5	C 23.5	B 18.7	D 37.2	D 35.6	D 41.6	D 42.8	D 42.8	D 43.6
	Thru, Right	D 37.4	D 37.4	C 31.9	B 16.8	B 16.2	B 19.1	B 18.7	B 18.7	B 17.3
WB	Left	D 51.0	D 54.6	D 46.4	D 44.9	D 44.0	D 47.0	D 36.2	D 36.2	C 34.9
	Through	C 20.8	C 20.8	B 15.9	C 27.4	C 26.6	C 27.0	D 36.2	D 36.2	D 35.6
	Right	A 4.8	A 4.8	A 6.5	A 9.9	C 21.6	C 21.0	A 2.9	A 3.4	A 3.2
NB	Thru	B 10.7	B 11.2	B 15.8	A 7.1	A 7.8	A 8.0	A 3.0	A 3.0	A 3.3
SB	Thru	B 10.8	B 11.3	B 16.0	A 7.2	A 7.9	A 8.1	A 3.0	A 3.1	A 3.4
Overall		B 19.5	B 18.7	C 20.5	B 14.5	B 16.0	B 17.4	A 8.3	A 6.9	A 8.0

Lockheed Avenue/Scotch Road Northbound Ramp & Sam Weinroth Road

This unsignalized intersection operates with very little delay (LOS B or better) overall for all existing and future scenarios, under all three study peak periods. In addition, all approaches operate acceptably (LOS C or better) for all existing and future scenarios, under all three study peak periods.

Unsignalized		Lockheed Avenue/Scotch Road Northbound Ramp & Sam Weinroth Road								
Approach	Lane Group	Weekday Morning Peak Hour			Weekday Afternoon Peak Hour			Weekend Saturday Peak Hour		
		2019	2035		2019	2035		2019	2035	
		Existing	w/o Dev	w/Dev	Existing	w/o Dev	w/Dev	Existing	w/o Dev	w/Dev
EB	Thru, Right	-	-	-	-	-	-	-	-	-
WB	Left, Thru	A 8.0	A 8.0	A 8.1	A 7.6	A 7.6	A 7.7	A 7.3	A 7.3	A 7.4
NB	Left, Thru, Right	B 10.4	B 10.4	B 11.0	A 9.6	A 9.6	B 10.1	A 8.6	A 8.6	A 8.7
SB	Left	B 13.7	B 13.7	C 19.9	B 10.8	B 10.8	B 11.9	A 9.1	A 9.1	A 9.3
	Through, Right	A 9.2	A 9.2	A 9.5	A 8.9	A 8.9	A 9.1	A 8.7	A 8.7	A 8.8
Overall		A 9.2	A 9.2	B 12.8	A 3.8	A 3.8	A 4.0	A 3.8	A 3.8	A 3.8

Scotch Road Southbound Ramp & Sam Weinroth Road

This unsignalized intersection operates with very little delay (LOS A) overall for all existing and future scenarios, under all three study peak periods. In addition, all approaches operate acceptably (LOS C or better) for all existing and future scenarios, under all three study peak periods.

Unsignalized		Scotch Road Southbound Ramp & Sam Weinroth Road								
Approach	Lane Group	Weekday Morning Peak Hour			Weekday Afternoon Peak Hour			Weekend Saturday Peak Hour		
		2019	2035		2019	2035		2019	2035	
		Existing	w/o Dev	w/Dev	Existing	w/o Dev	w/Dev	Existing	w/o Dev	w/Dev
EB	Thru	-	-	-	-	-	-	-	-	-
WB	Thru	-	-	-	-	-	-	-	-	-
NB	Left, Right	B 13.0	B 13.2	C 15.8	A 9.9	A 10.0	B 10.4	A 8.6	A 8.6	A 8.7
Overall		A 3.1	A 3.2	A 3.5	A 1.3	A 1.3	A 1.4	A 3.8	A 3.8	A 3.9

Queueing Analysis

The queueing analysis showed potential issues at two locations which may require mitigation measures. For the southbound left-turn movement at Bear Tavern Road & I-295 southbound ramps, the queue exceeds the storage area by 7-8 vehicles during the weekday afternoon peak period for both future scenarios. This is an existing issue in 2019, as well as 2035, however it is not worsened in the “with development” scenario. Also, at the westbound approach of Bear Tavern Road/Grand Avenue & Upper Ferry Road, the right-turn movement queue exceeds the very limited space available for right-turning vehicles.

Signalized		Bear Tavern Road & I-295 SB Ramps									
Approach	Lane Group	Storage Length (ft)	Weekday Morning Peak Hour			Weekday Afternoon Peak Hour			Weekend Saturday Peak Hour		
			2019	2035		2019	2035		2019	2035	
			Existing	w/o Dev	w/Dev	Existing	w/o Dev	w/Dev	Existing	w/o Dev	w/Dev
EB	Left, Thru	>1000	349	#373	#373	177	184	184	183	192	192
	Right	100	0	0	0	0	0	0	0	0	0
NB	Thru	>1000	285	404	#430	m372	m397	m413	184	265	274
SB	Left	150	107	#298	#320	110	#278	300	42	44	44
	Thru	>1000	305	426	450	186	263	280	118	165	171

Unsignalized		Bear Tavern Road & Sam Weinroth Road									
Approach	Lane Group	Storage Length (ft)	Weekday Morning Peak Hour			Weekday Afternoon Peak Hour			Weekend Saturday Peak Hour		
			2019	2035		2019	2035		2019	2035	
			Existing	w/o Dev	w/Dev	Existing	w/o Dev	w/Dev	Existing	w/o Dev	w/Dev
WB	Left	>1000	92.5	137.5	205	165	230	352.5	12.5	20	30
	Right	60	20	25	37.5	42.5	57.5	92.5	12.5	15	20
NB	Thru, Right	>1000	-	-	-	-	-	-	-	-	-
SB	Left	150	10	10	15	12.5	15	20	5	5	7.5
	Thru	>1000	-	-	-	-	-	-	-	-	-

Signalized		Bear Tavern Road/Grand Avenue & Upper Ferry Road									
Approach	Lane Group	Storage Length (ft)	Weekday Morning Peak Hour			Weekday Afternoon Peak Hour			Weekend Saturday Peak Hour		
			2019		2035	2019		2035		2019	
			Existing	w/o Dev	w/Dev	Existing	w/o Dev	w/Dev	Existing	w/o Dev	w/Dev
EB	Left	>1000	94	99	109	66	69	77	63	64	69
	Thru, Right	105	112	116	116	123	129	129	104	107	107
WB	Left, Thru	>1000	119	124	124	197	208	208	146	150	150
	Right	22	238	#256	#261	265	#303	#306	176	183	184
NB	Left, Thru, Right	>1000	328	#513	#534	#431	#614	628	167	#292	295
SB	Left	390	238	#259	#276	#248	#268	284	166	176	180
	Thru, Right	>1000	522	#692	#703	#338	#507	529	175	#273	286

Signalized		Scotch Road & Sam Weinroth Road									
Approach	Lane Group	Storage Length (ft)	Weekday Morning Peak Hour			Weekday Afternoon Peak Hour			Weekend Saturday Peak Hour		
			2019		2035	2019		2035		2019	
			Existing	w/o Dev	w/Dev	Existing	w/o Dev	w/Dev	Existing	w/o Dev	w/Dev
EB	Left	100	61	61	68	94	92	118	49	49	59
	Thru, Right	310	263	263	323	53	52	70	29	29	32
WB	Left	200	62	66	68	106	109	110	18	18	18
	Thru	>1000	32	32	34	41	40	48	26	26	31
	Right	>1000	24	25	22	41	102	101	0	1	1
NB	Thru	>1000	92	124	142	85	114	115	31	44	47
SB	Thru	>1000	107	138	159	99	131	132	28	41	44

Unsignalized		Lockheed Avenue/Scotch Road NB Ramp & Sam Weinroth Road									
Approach	Lane Group	Storage Length (ft)	Weekday Morning Peak Hour			Weekday Afternoon Peak Hour			Weekend Saturday Peak Hour		
			2019		2035	2019		2035	2019		2035
			Existing	w/o Dev	w/Dev	Existing	w/o Dev	w/Dev	Existing	w/o Dev	w/Dev
EB	Thru, Right	>1000	-	-	-	-	-	-	-	-	-
WB	Left, Thru	310	0	0	0	0	0	0	0	0	0
NB	Left, Thru, Right	>1000	0	0	0	2.5	2.5	2.5	0	0	0
SB	Left	660	65	65	132.5	7.5	7.5	10	2.5	2.5	2.5
	Thru, Right	172	7.5	7.5	10	5	5	7.5	5	5	5

Unsignalized		Scotch Road SB Ramp & Sam Weinroth Road									
Approach	Lane Group	Storage Length (ft)	Weekday Morning Peak Hour			Weekday Afternoon Peak Hour			Weekend Saturday Peak Hour		
			2019		2035	2019		2035	2019		2035
			Existing	w/o Dev	w/Dev	Existing	w/o Dev	w/Dev	Existing	w/o Dev	w/Dev
EB	Thru	200	0	-	-	-	-	-	-	-	-
WB	Thru	>1000	0	-	-	-	-	-	-	-	-
NB	Left, Right	428	32.5	35	47.5	10	10	12.5	2.5	2.5	2.5

VII. Conclusions

As can be seen from the results of the SYNCHRO analysis, the network operates well overall, but with some capacity/queuing issues at certain approaches and turn movements. The new trips generated by the projected activity at the airport contribute to this delay, but it should be noted that almost all of the delay is currently present or will be without the proposed project.

Based on the traffic analysis, the key location to consider for future infrastructure improvements is the intersection of Sam Weinroth and Bear Tavern Road. The need for improvements is an existing concern that gets worse over time independent of the proposed project. Analysis showed that the anticipated traffic increases on Bear Tavern as a result of the recent and planned off-airport projects, exacerbated to a small degree when combined with the traffic from the airport development, will result in significant delays for traffic exiting from the Airport. Consideration of signalization or a modern roundabout for intersection control should lead to acceptable traffic operations for all movements at the intersection. It is recommended that Mercer County pursue such a remedy independently of the proposed Terminal replacement project.

Appendix X1 – Traffic Volume Figures

Figure X1-1: 2019 Existing Weekday Morning Peak Hour Volumes

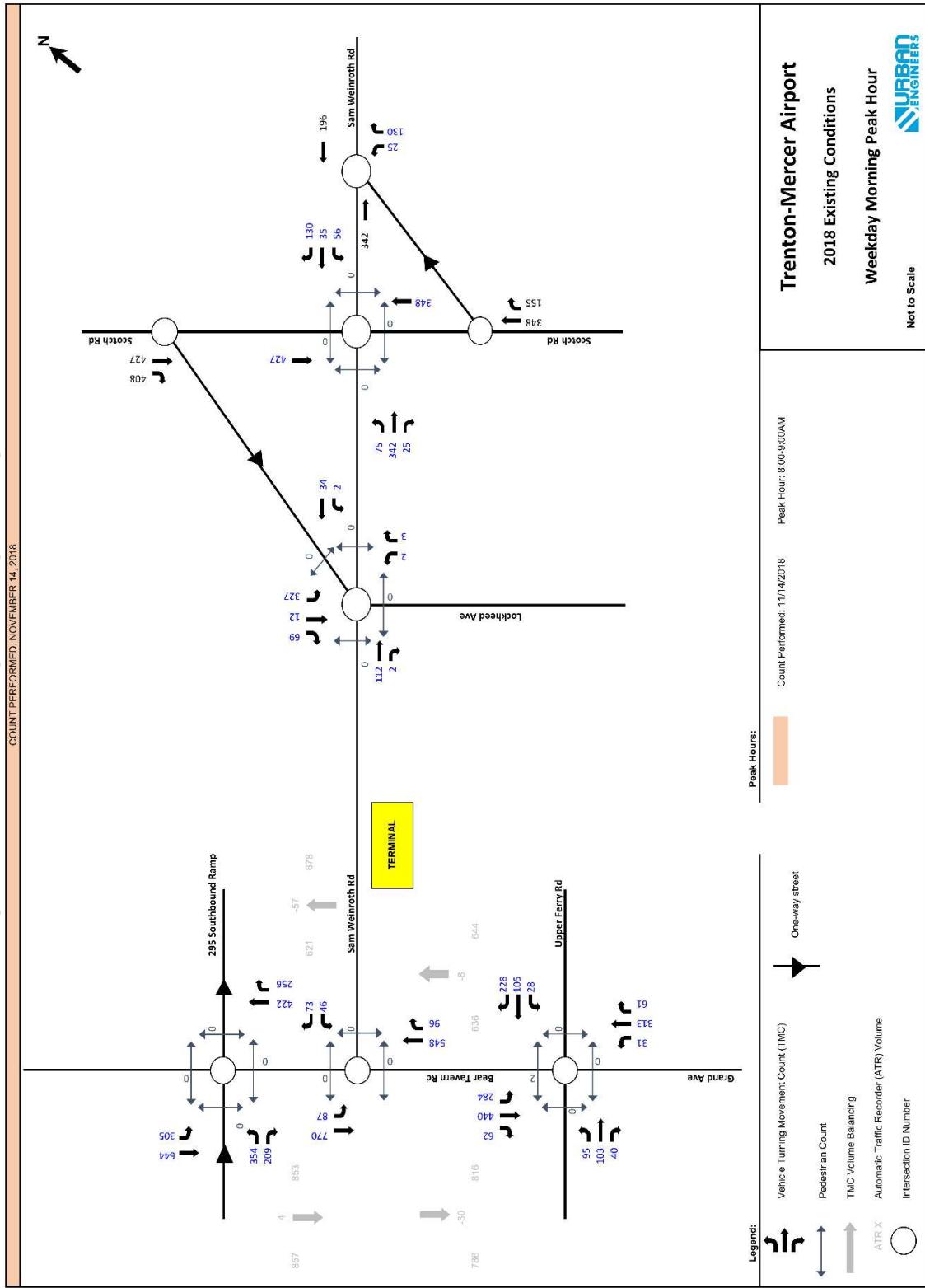


Figure X1-2: 2018 Existing Weekday Afternoon Peak Hour Volumes

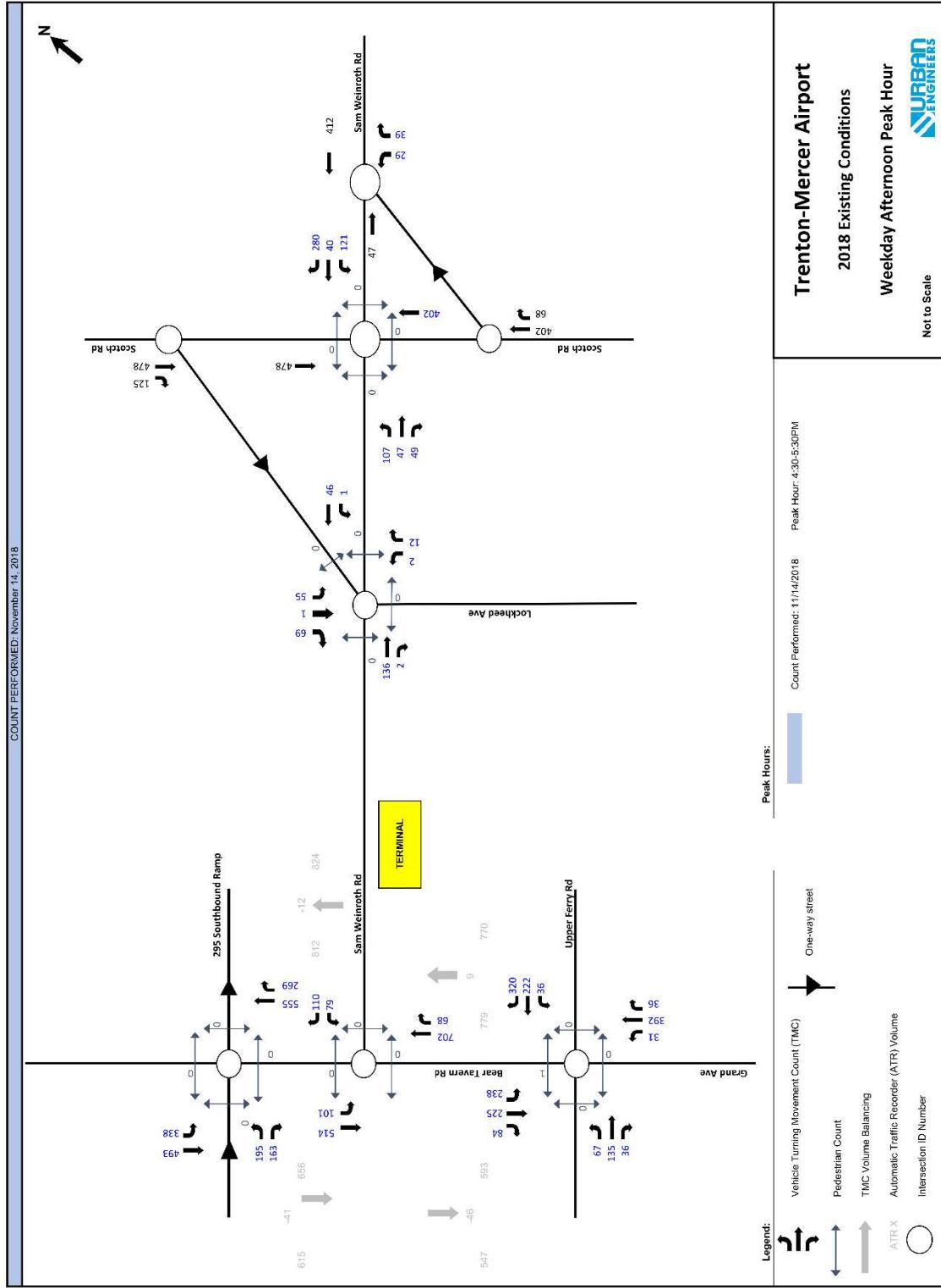


Figure X1-3: 2018 Existing Saturday Midday Peak Hour Volumes

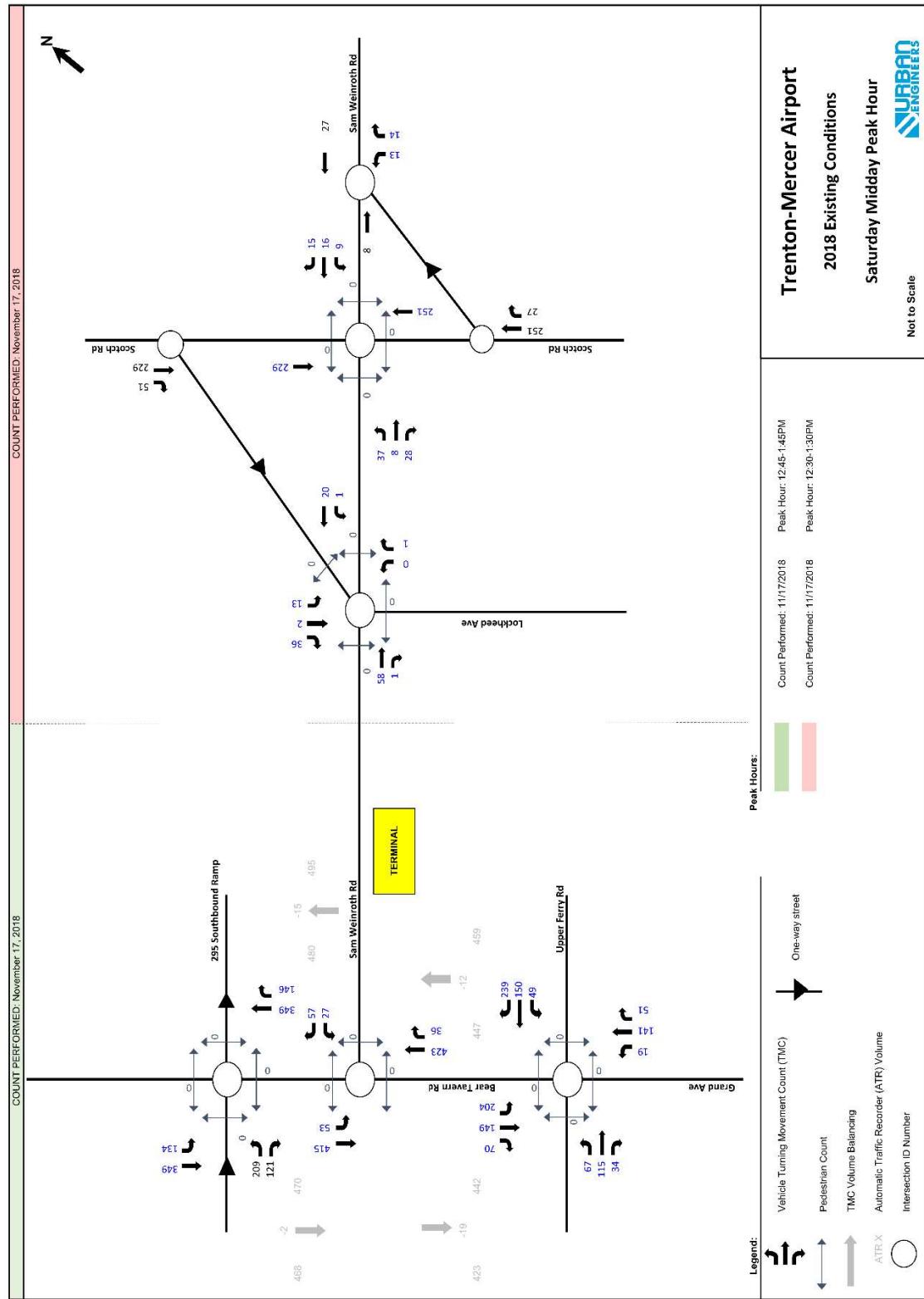


Figure X1-4: Other Development Traffic

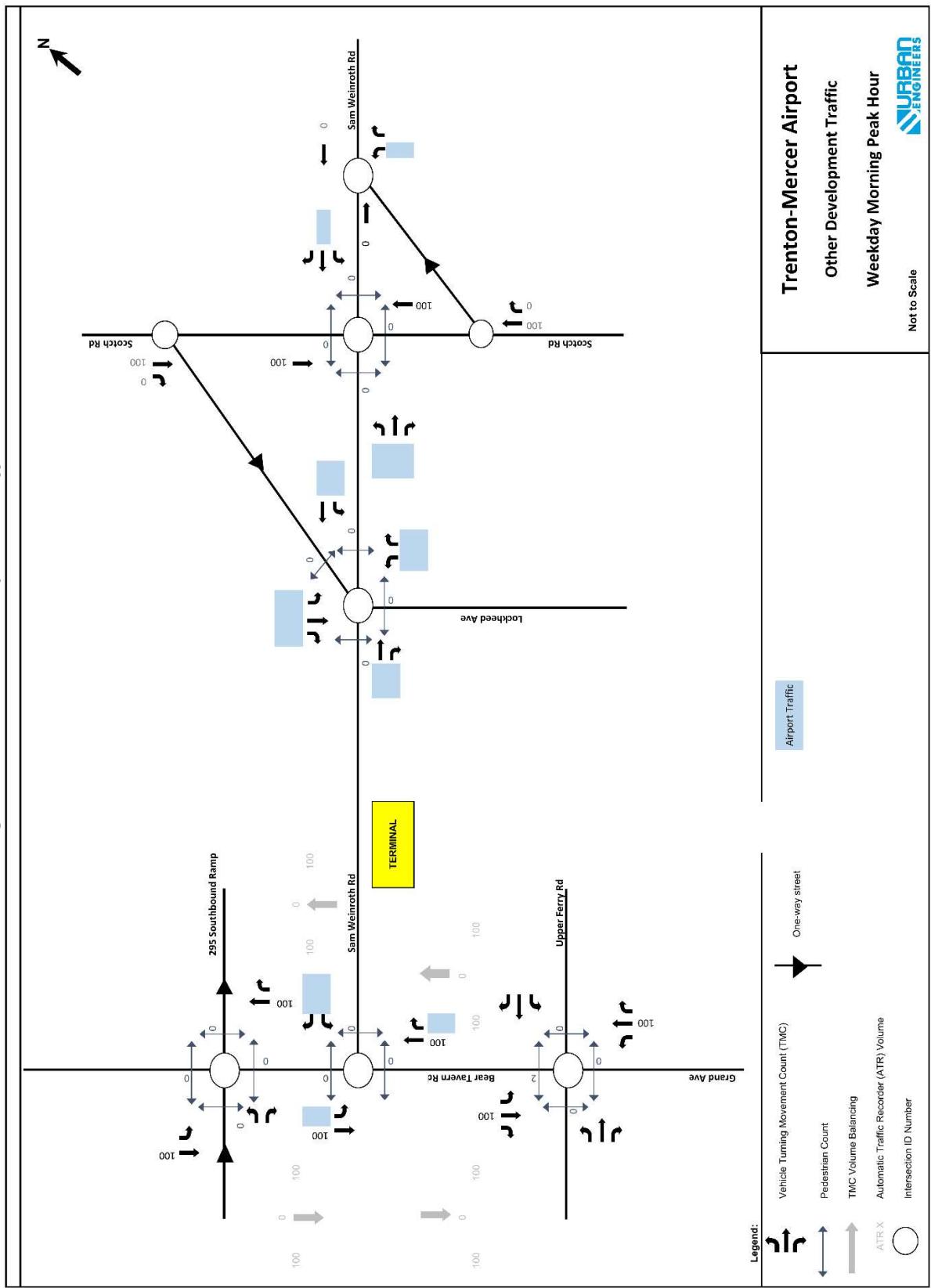


Figure X1-5: 2035 Weekday Morning Peak Hour Volumes without Development

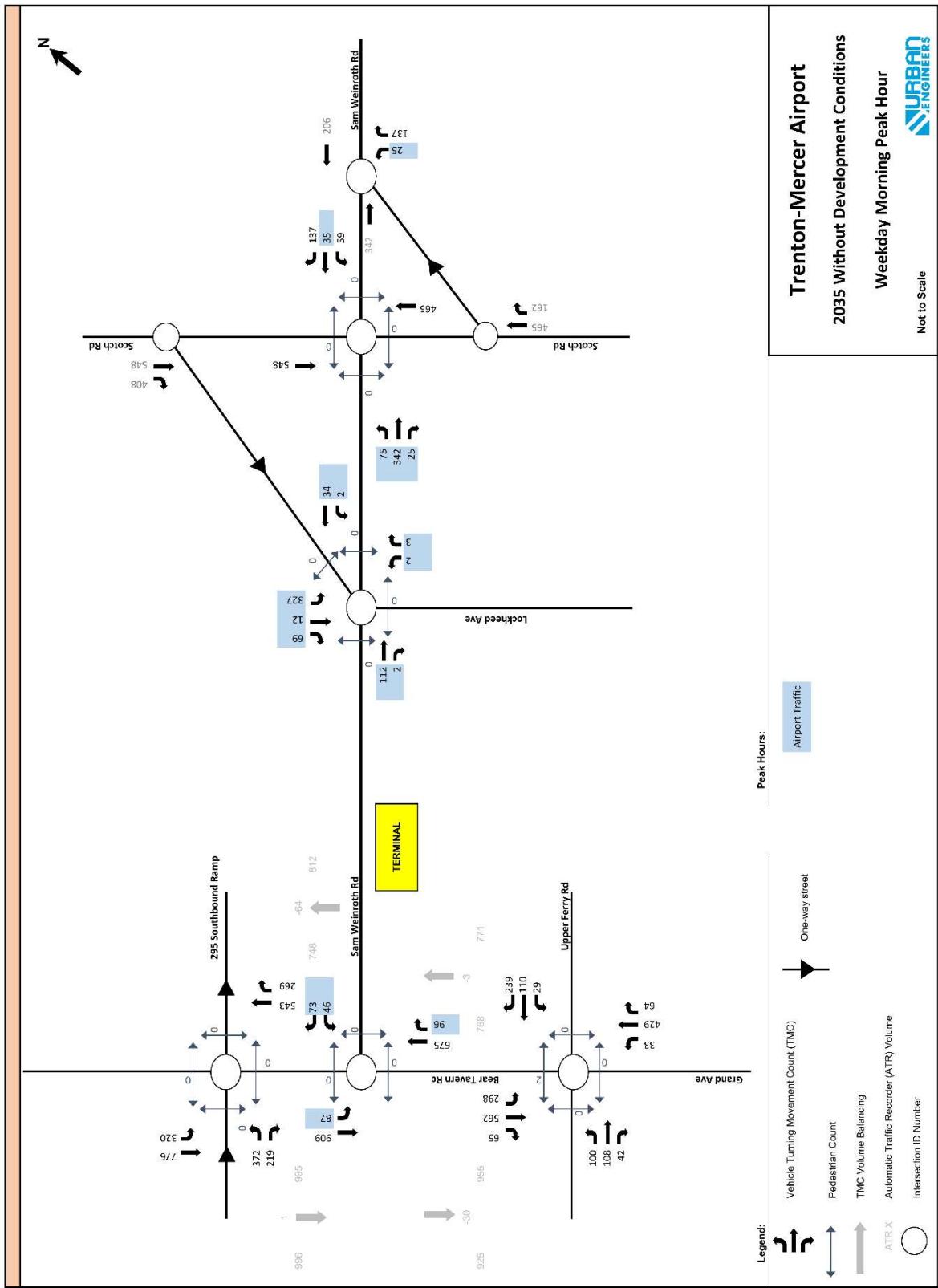


Figure X1-6: 2035 Weekday Afternoon Peak Hour Volumes without Development

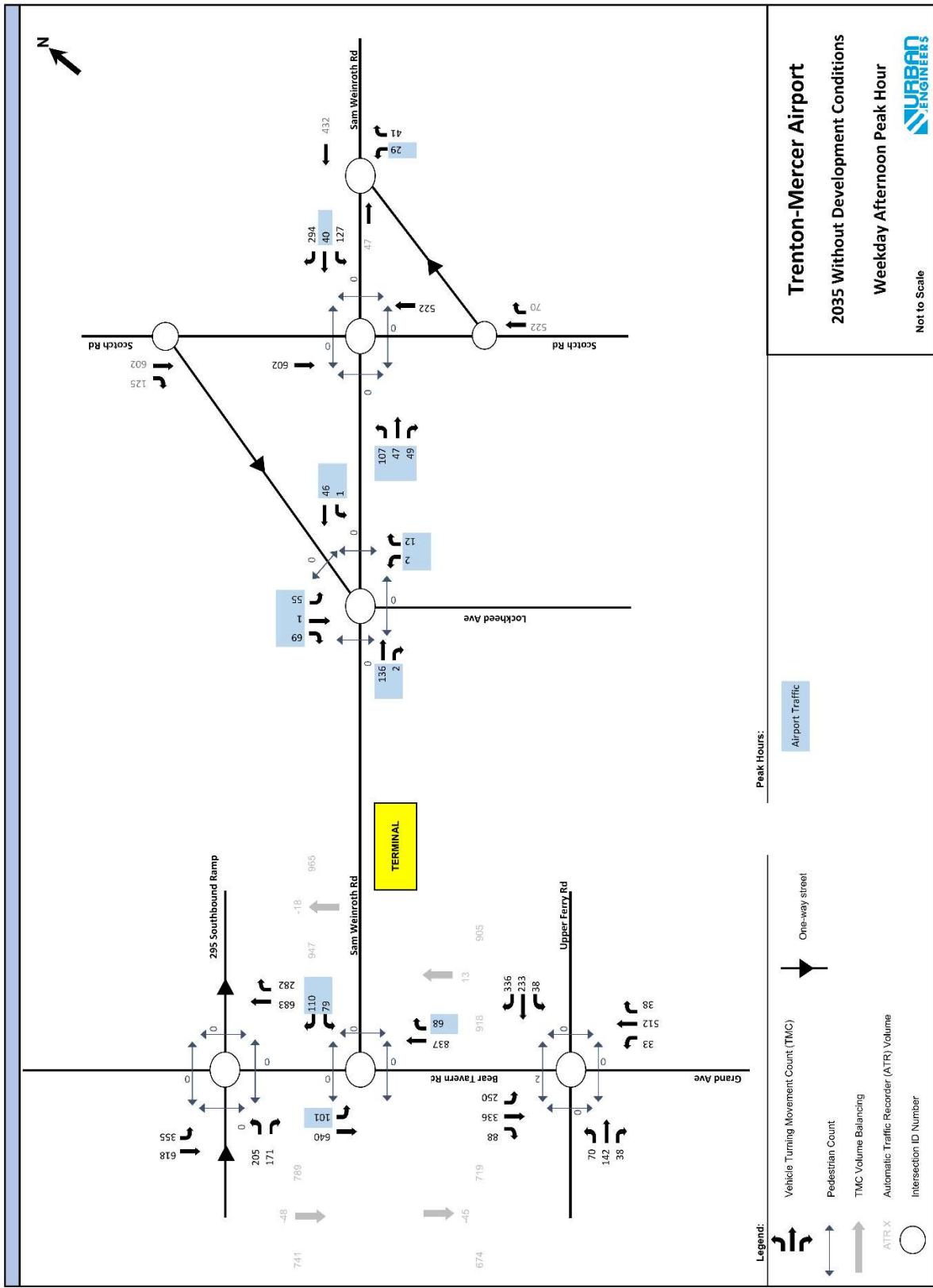


Figure X1-7: 2035 Saturday Midday Peak Volumes without Development

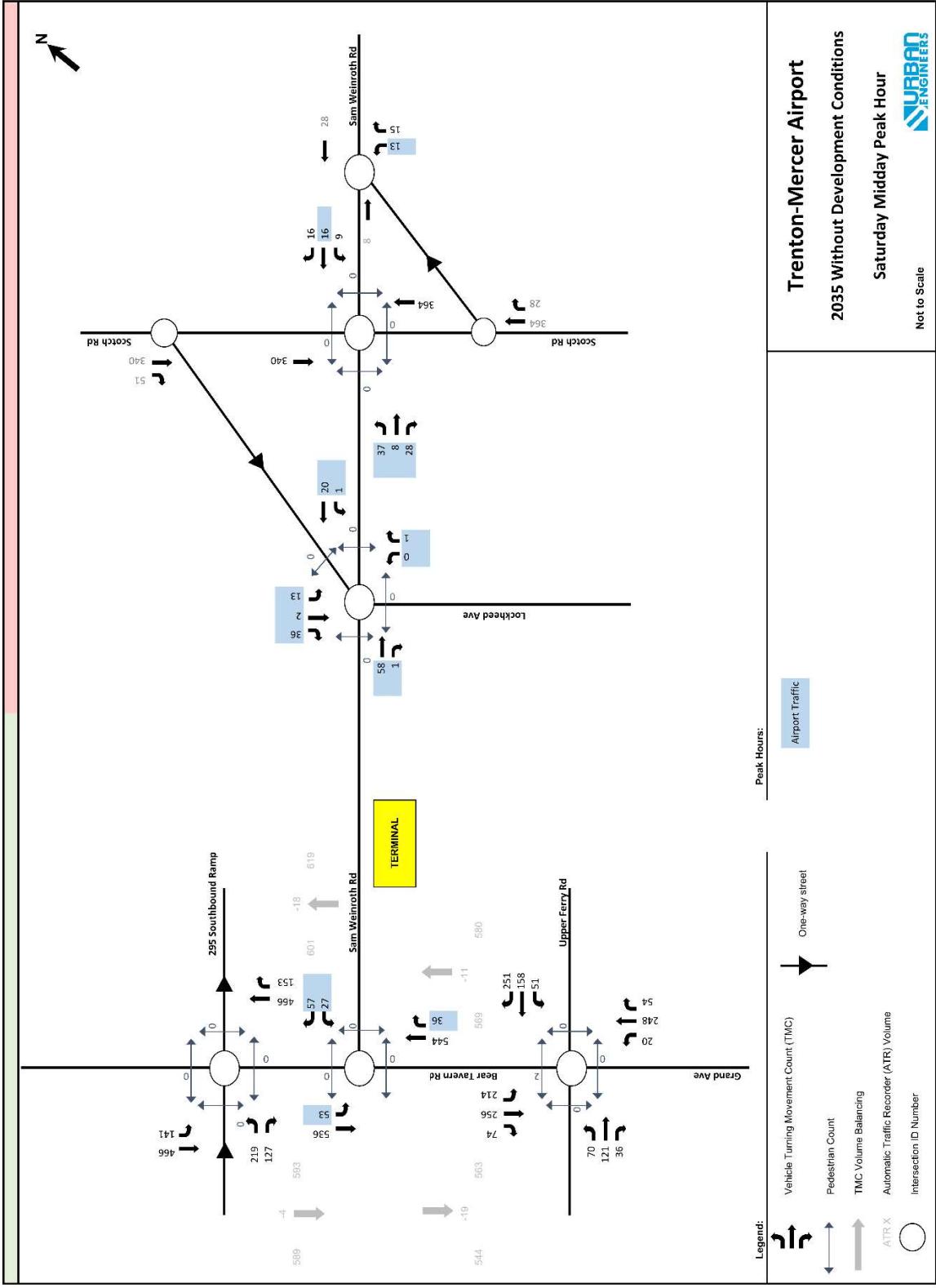


Figure X1-8: Trip Generation - Weekday Morning

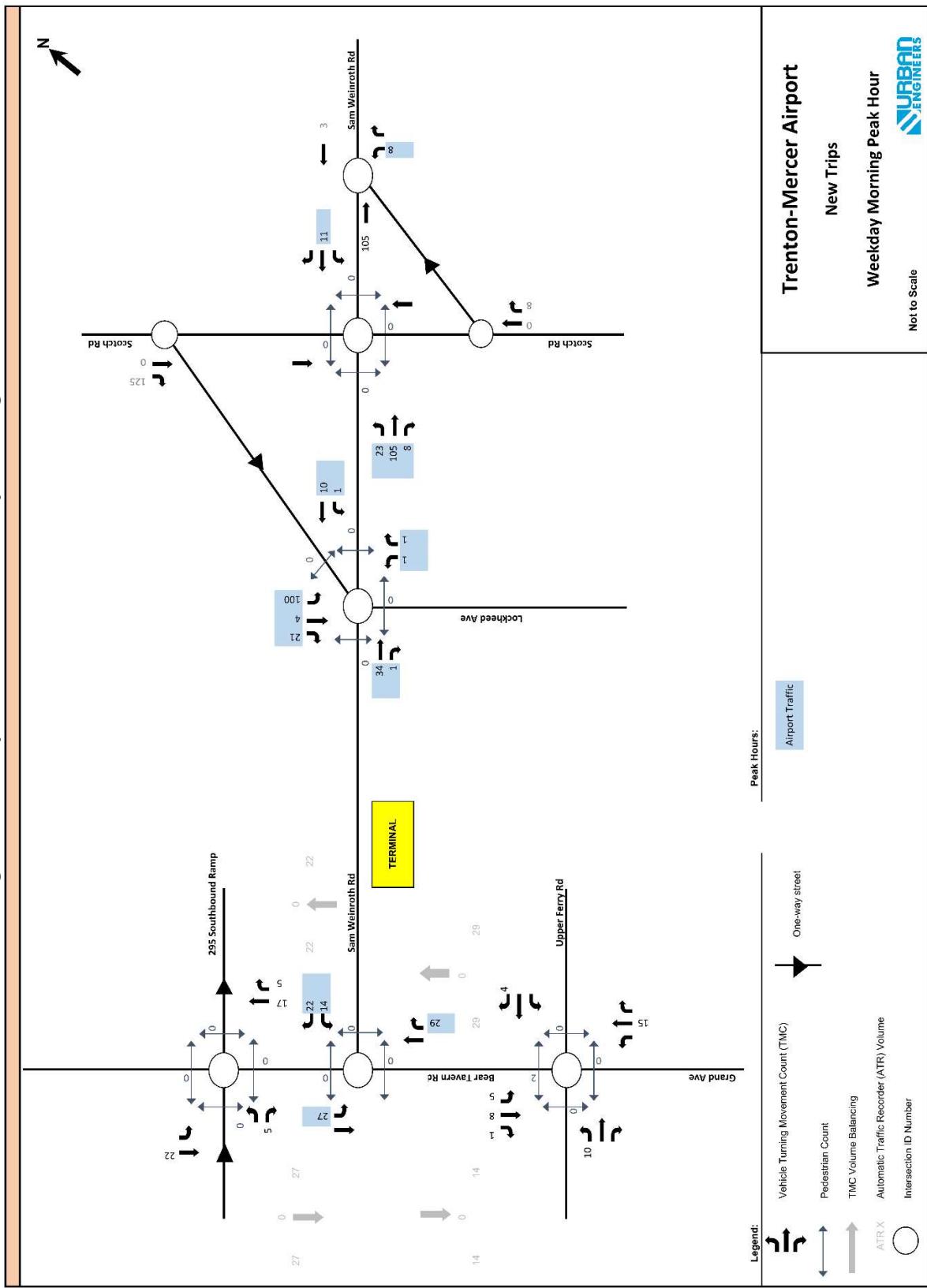


Figure X1-9: Trip Generation - Weekday Afternoon

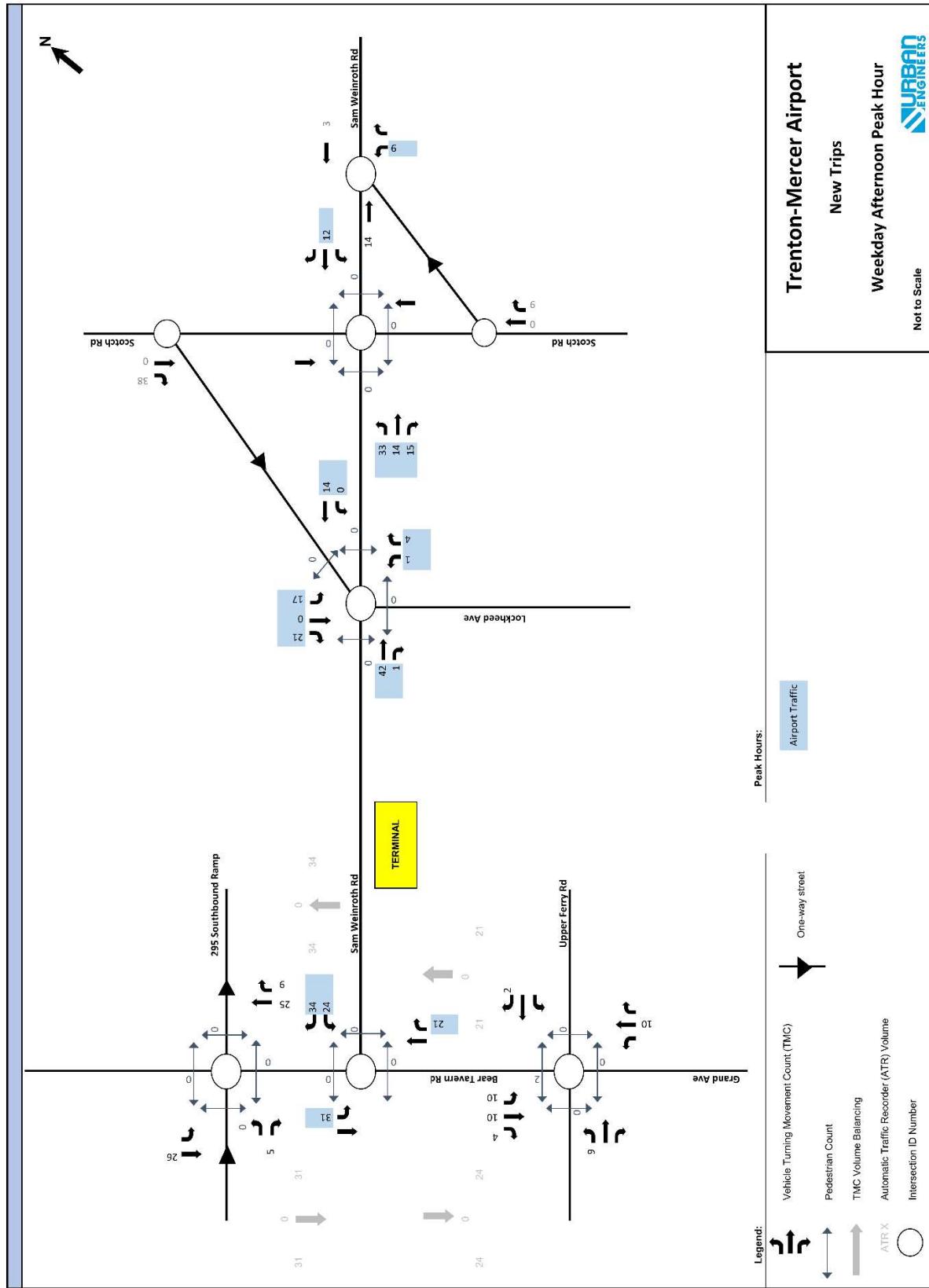


Figure X1-10: Trip Generation – Saturday Midday

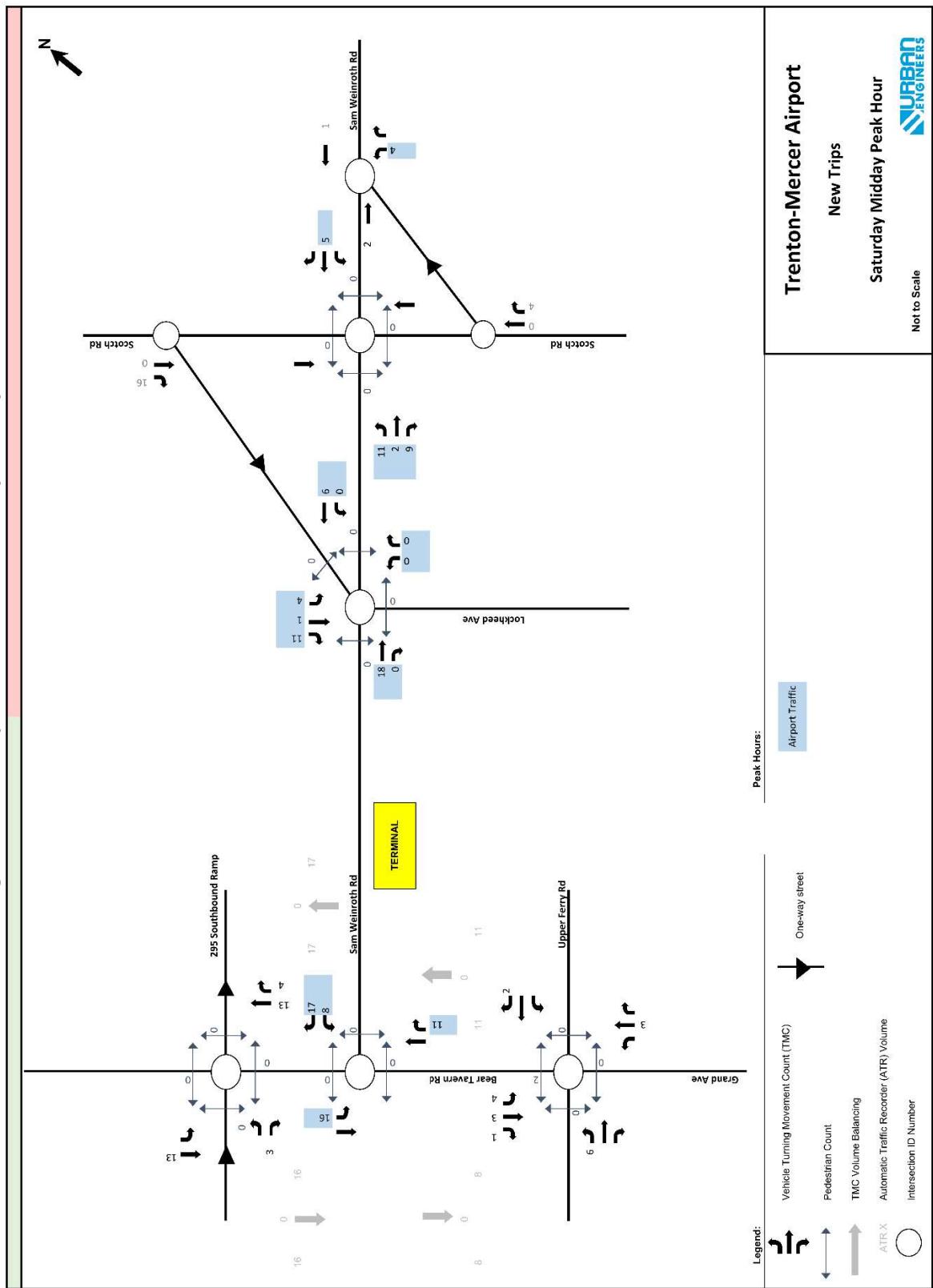


Figure X1-11: 2035 Weekday Morning Peak Hour Volumes with Development

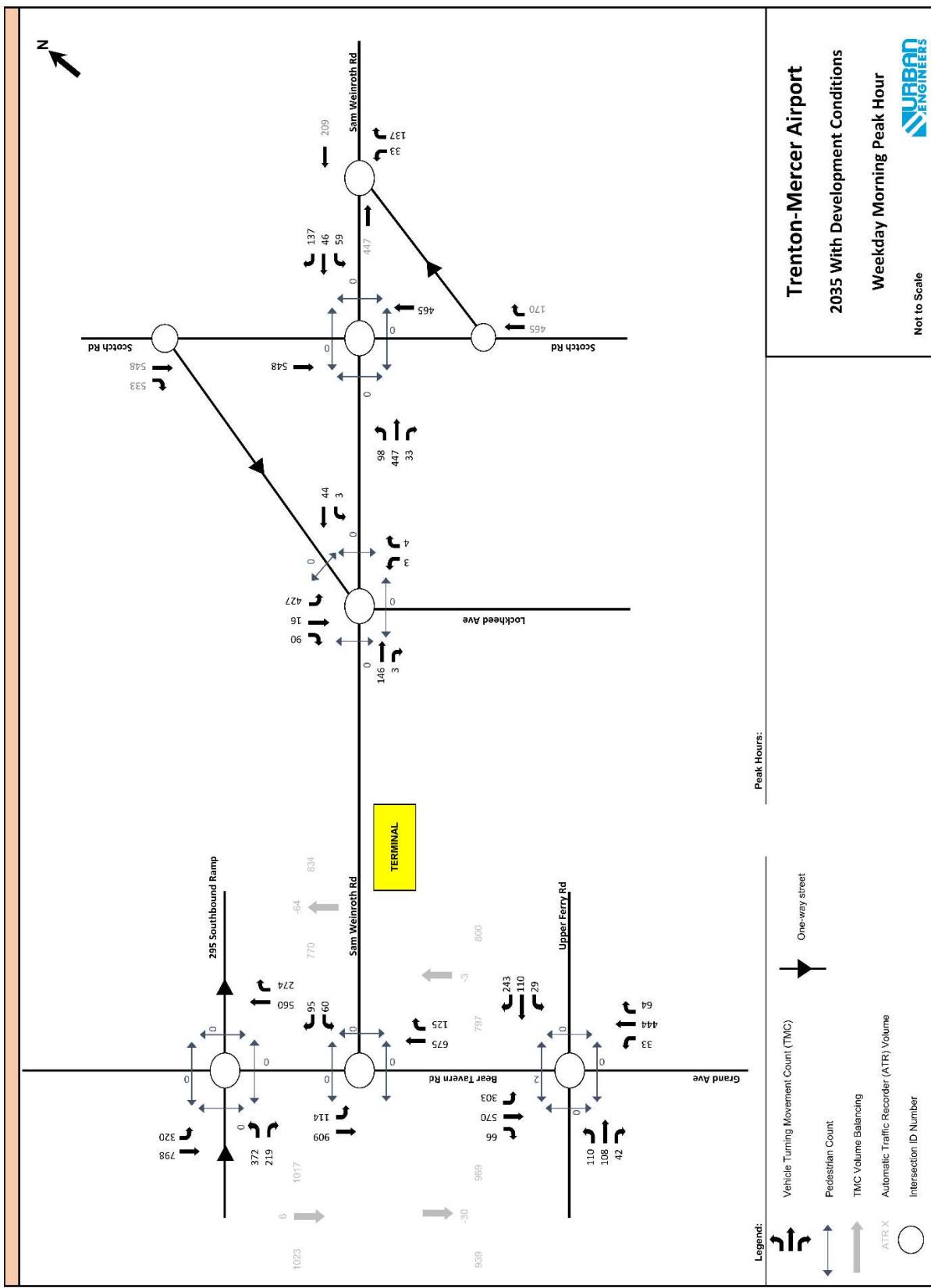


Figure X1-12: 2035 Weekday Afternoon Peak Hour Volumes with Development

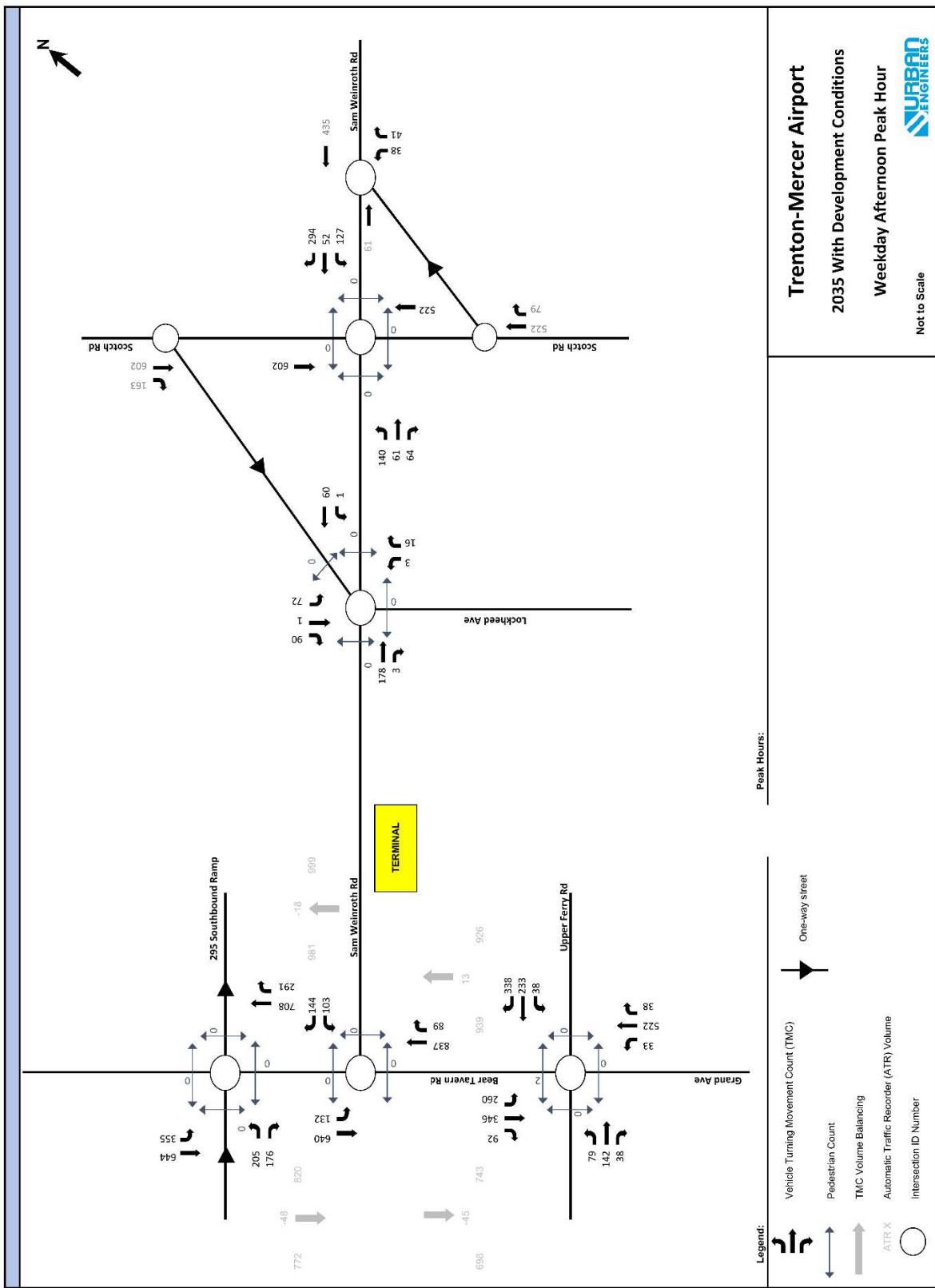
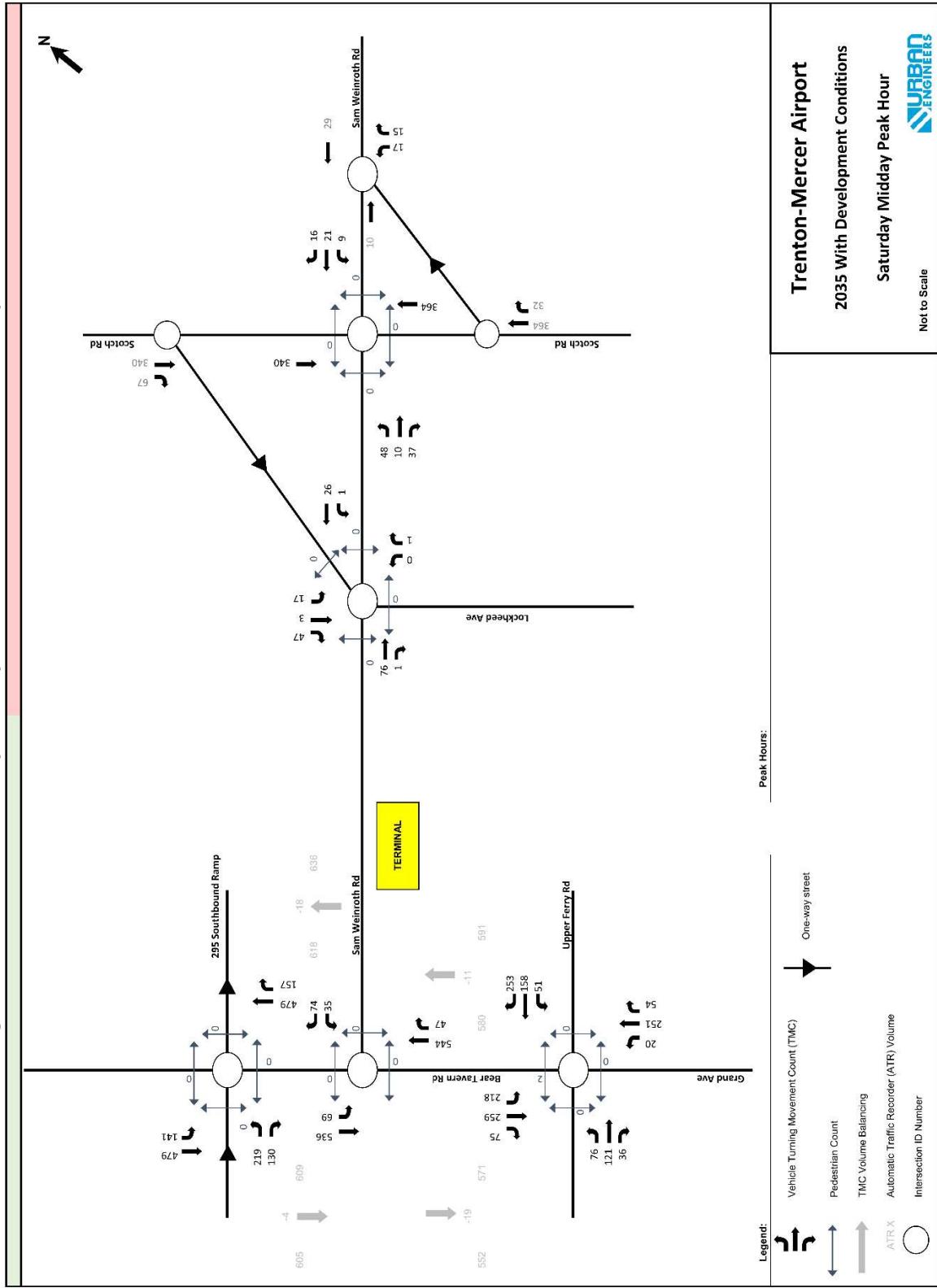


Figure X1-13: 2035 Saturday Midday Peak Volumes with Development



Appendix X2 – Turning Movement & ATR Count Data

Study Name Bear Tavern & 295 South
 Start Date Wednesday, November 14, 2018 7:00
 End Date Saturday, November 17, 2018 14:00
 Site Code
 Peak Hour: AM Peak 11/14/2018 8:00

Road Volumes

TMV	Movement		Southbound				Westbound				Northbound				Eastbound				Grand Total			
	Interval	R	T	L	U	Southbound TC	R	T	L	U	Westbound To	R	T	L	U	Northbound TC	R	T	L	U	Eastbound Tot Grand Total	
11/14/2018 8:00	0	180	84	0	264	0	0	0	0	0	82	0	0	0	82	0	0	57	0	57	403	
Motorcycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Cars	0	149	82	0	231	0	0	0	0	0	64	0	0	0	64	0	0	50	0	50	345	
Light Goods Vehicle:	0	18	1	0	19	0	0	0	0	0	10	0	0	0	10	0	0	6	0	6	35	
Buses	0	7	1	0	8	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	11	
Single-Unit Trucks	0	4	0	0	4	0	0	0	0	0	4	0	0	0	4	0	0	1	0	1	9	
Articulated Trucks	0	1	0	0	1	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	2	
Bicycles on Road	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
11/14/2018 8:15	0	189	80	0	269	0	0	0	0	0	89	0	0	0	89	0	0	95	0	95	453	
Motorcycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Cars	0	172	75	0	247	0	0	0	0	0	74	0	0	0	74	0	0	83	0	83	404	
Light Goods Vehicle:	0	7	3	0	10	0	0	0	0	0	10	0	0	0	10	0	0	12	0	12	32	
Buses	0	4	0	0	4	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	7	
Single-Unit Trucks	0	5	2	0	7	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	9	
Articulated Trucks	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11/14/2018 8:30	0	139	70	1	210	0	0	0	0	0	113	0	0	0	113	0	0	106	0	106	429	
Motorcycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Cars	0	127	64	1	192	0	0	0	0	0	102	0	0	0	102	0	0	97	0	97	391	
Light Goods Vehicle:	0	5	2	0	7	0	0	0	0	0	7	0	0	0	7	0	0	7	0	7	21	
Buses	0	4	2	0	6	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	7	
Single-Unit Trucks	0	3	2	0	5	0	0	0	0	0	2	0	0	0	2	0	0	2	0	2	9	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1	
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11/14/2018 8:45	0	136	71	0	207	0	0	0	0	0	138	0	0	0	138	0	0	96	0	96	441	
Motorcycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Cars	0	112	60	0	172	0	0	0	0	0	113	0	0	0	113	0	0	88	0	88	373	
Light Goods Vehicle:	0	11	3	0	14	0	0	0	0	0	9	0	0	0	9	0	0	7	0	7	30	
Buses	0	4	8	0	12	0	0	0	0	0	11	0	0	0	11	0	0	0	0	0	23	
Single-Unit Trucks	0	9	0	0	9	0	0	0	0	0	4	0	0	0	4	0	0	1	0	1	14	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1	
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Grand Total	0	644	305	1	950	0	0	0	0	0	422	0	0	0	422	0	0	354	0	354	1226	
Total HV	0	42	15	0	57	0	0	0	0	0	33	0	0	0	33	0	0	4	0	4	94	
HV%	0%	7%	5%	0%	6%	0%	0%	0%	0%	0%	8%	0%	0%	8%	0%	0%	1%	0%	1%	0%	5%	
Peak 15-min PHF					0.88				0.00		0.76			0.76				0.33	0.95	106	453	
Southbound	R	T	L	U	Southbound	R	T	L	U	Southbound	R	T	L	U	Northbound	R	T	L	U	Eastbound	Grand Total	

Study Name Bear Tavern & 295 South
 Start Date Wednesday, November 14, 2018 7:00
 End Date Saturday, November 17, 2018 14:00
 Site Code
 Peak Hour: PM Peak
 11/14/2018 16:30

Road Volumes

TMV	Movement		Southbound			Westbound			Northbound			Eastbound			Eastbound To Grand Total
	Interval	R	T	L	U	R	T	L	U	R	T	L	U		
11/14/2018 16:30	0	111	93	0	204	0	0	0	0	147	0	0	50	0	401
Motorcycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars	0	105	83	0	188	0	0	0	0	128	0	0	43	0	359
Light Goods Vehicles	0	4	4	0	8	0	0	0	0	16	0	0	7	0	31
Buses	0	1	2	0	3	0	0	0	0	1	0	0	0	0	4
Single-Unit Trucks	0	0	3	0	3	0	0	0	0	1	0	0	0	0	4
Articulated Trucks	0	1	1	0	2	0	0	0	0	1	0	0	0	0	0
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11/14/2018 16:45	0	115	79	0	194	0	0	0	0	129	0	0	43	0	366
Motorcycles	0	101	75	0	176	0	0	0	0	115	0	0	0	0	333
Cars	0	10	2	0	12	0	0	0	0	12	0	0	1	0	25
Light Goods Vehicles	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0
Buses	0	3	0	0	3	0	0	0	0	0	0	0	0	0	6
Single-Unit Trucks	0	2	1	0	3	0	0	0	0	0	0	0	0	0	0
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11/14/2018 17:00	0	119	78	0	197	0	0	0	0	130	0	0	47	0	374
Motorcycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars	0	100	67	0	167	0	0	0	0	114	0	0	37	0	338
Light Goods Vehicles	0	14	9	0	23	0	0	0	0	16	0	0	8	0	47
Buses	0	3	0	0	3	0	0	0	0	0	0	0	0	0	3
Single-Unit Trucks	0	2	1	0	3	0	0	0	0	0	0	0	2	0	5
Articulated Trucks	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11/14/2018 17:15	0	148	88	0	236	0	0	0	0	149	0	0	55	0	440
Motorcycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars	0	138	84	0	222	0	0	0	0	133	0	0	48	0	403
Light Goods Vehicles	0	10	3	0	13	0	0	0	0	14	0	0	5	0	32
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Single-Unit Trucks	0	0	1	0	1	0	0	0	0	2	0	0	2	0	5
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	493	338	0	831	0	0	0	0	555	0	0	195	0	1581
Total HV	0	11	11	0	22	0	0	0	0	7	0	0	4	0	33
HV%	0%	2%	3%	0%	3%	0%	0%	0%	1%	0%	0%	0%	2%	0%	2%
Peak 15-min PHF				236	0.88		0	0	149	0.33		55	0.89	440	0.90
						Southbound	Westbound								
						R	L	U							
						Southbound	Westbound								
						R	L	U							
						Northbound	Eastbound								
						R	L	U							
						Northbound	Eastbound								
						R	L	U							

Study Name Bear Tavern & 295 South
 Start Date Wednesday, November 14, 2018 7:00
 End Date Saturday, November 17, 2018 14:00
 Site Code

Peak Hour: SAT Peak 11/17/2018 12:45

Road Volumes

TMV	Movement		Southbound		Southbound To		Westbound		Westbound To		Northbound		Northbound To		Eastbound		Eastbound To		Grand Total	
	Interval	R	T	L	U	R	T	L	U	R	T	L	U	R	T	L	U	R	T	
11/17/2018 12:45	0	87	39	0	126	0	0	0	0	0	71	0	0	71	0	65	0	65	262	
Motorcycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Cars	0	77	37	0	114	0	0	0	0	0	59	0	0	59	0	53	0	53	226	
Light Goods Vehicles	0	10	1	0	11	0	0	0	0	0	11	0	0	11	0	6	0	6	28	
Buses	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	1	0	0	1	0	5	0	5	
Articulated Trucks	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	2	
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11/17/2018 13:00	0	87	33	0	120	0	0	0	0	0	80	0	0	80	0	52	0	52	252	
Motorcycles	0	2	0	0	2	0	0	0	0	0	1	0	0	1	0	0	0	0	0	
Cars	0	80	29	0	109	0	0	0	0	0	68	0	0	68	0	47	0	47	224	
Light Goods Vehicles	0	3	4	0	7	0	0	0	0	0	8	0	0	8	0	4	0	4	19	
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Single-Unit Trucks	0	1	0	0	1	0	0	0	0	0	3	0	0	3	0	1	0	1	5	
Articulated Trucks	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11/17/2018 13:15	0	91	34	0	125	0	0	0	0	0	78	0	0	78	0	46	0	46	249	
Motorcycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Cars	0	84	33	0	117	0	0	0	0	0	72	0	0	72	0	35	0	35	224	
Light Goods Vehicles	0	6	1	0	7	0	0	0	0	0	4	0	0	4	0	9	0	9	20	
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Single-Unit Trucks	0	1	0	0	1	0	0	0	0	0	2	0	0	2	0	2	0	2	5	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11/17/2018 13:30	0	84	28	0	112	0	0	0	0	0	120	0	0	120	0	46	0	46	278	
Motorcycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Cars	0	70	26	0	96	0	0	0	0	0	110	0	0	110	0	43	0	43	249	
Light Goods Vehicles	0	13	1	0	14	0	0	0	0	0	10	0	0	10	0	2	0	2	26	
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Single-Unit Trucks	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0	1	0	1	3	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Grand Total	0	349	134	0	483	0	0	0	0	0	349	0	0	349	0	209	0	209	1041	
Total HV	0	4	2	0	6	0	0	0	0	0	6	0	0	6	0	10	0	10	22	
HV%	0%	1%	1%	0%	1%	0%	0%	0%	0%	0%	2%	0%	0%	2%	0%	5%	0%	5%	2%	
Peak 15-min PHF						126				0.00				0.73			65		65	
																	0.80		0.94	
																			Eastbound Grand Total	

Study Name	Bear Tavern Rd & Sam Weinroth Rd
Start Date	Wednesday, November 14, 2018 7:00
End Date	Saturday, November 17, 2018 14:00
Site Code	

Peak Hour: AM Peak 11/14/2018 8:00

Road Volumes

TMV	Movement		Southbound		Southbound Tc		Westbound		Westbound To		Northbound		Northbound Tc		Grand Total	
	Interval	T	L	U	L	U	R	U	R	U	T	U	R	T	U	R
11/14/2018 8:00	212	11	0	0	223	9	0	7	16	123	0	0	17	140	0	379
Motorcycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars	176	10	0	0	186	4	0	5	9	100	0	0	15	115	0	310
Light Goods Vehicles	22	1	0	0	23	4	0	2	6	10	0	0	2	12	0	41
Buses	9	0	0	0	9	0	0	0	0	4	0	0	0	4	0	13
Single-Unit Trucks	4	0	0	0	4	1	0	0	1	7	0	0	0	7	0	12
Articulated Trucks	1	0	0	0	1	0	0	0	0	2	0	0	0	2	0	3
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11/14/2018 8:15	225	26	0	0	251	9	0	14	23	133	0	0	27	160	0	434
Motorcycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars	201	23	0	0	224	2	0	11	13	115	0	0	21	136	0	373
Light Goods Vehicles	11	3	0	0	14	7	0	1	8	10	0	0	5	15	0	37
Buses	5	0	0	0	5	0	0	1	1	4	0	0	1	5	0	11
Single-Unit Trucks	7	0	0	0	7	0	0	1	1	4	0	0	0	4	0	12
Articulated Trucks	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11/14/2018 8:30	172	27	0	0	199	13	1	32	46	140	0	0	23	163	0	408
Motorcycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars	152	24	0	0	176	12	1	31	44	120	0	0	19	139	0	359
Light Goods Vehicles	12	3	0	0	15	1	0	1	2	9	0	0	3	12	0	29
Buses	3	0	0	0	3	0	0	0	0	1	0	0	0	1	0	4
Single-Unit Trucks	5	0	0	0	5	0	0	0	0	7	0	0	1	8	0	13
Articulated Trucks	0	0	0	0	0	0	0	0	0	3	0	0	0	3	0	3
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11/14/2018 8:45	161	23	0	0	184	15	0	20	35	152	0	0	29	181	0	400
Motorcycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars	135	21	0	0	156	15	0	20	35	123	0	0	25	148	0	339
Light Goods Vehicles	14	2	0	0	16	0	0	0	0	10	0	0	4	14	0	30
Buses	3	0	0	0	3	0	0	0	0	11	0	0	0	11	0	14
Single-Unit Trucks	9	0	0	0	9	0	0	0	0	6	0	0	0	6	0	15
Articulated Trucks	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	2
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	770	87	0	857	46	1	73	120	548	0	96	0	644	0	1621	
Total HV	47	0	0	0	47	1	0	2	3	51	0	0	2	53	0	103
HV%	6%	0%	0%	0%	0%	0%	0%	2%	7%	0%	0%	0%	2%	6%	0	6%
Peak 15-min PHF				0.85					0.65					0.89	0.93	
Southbound	T	L	U	Southbound	Westbound	L	U	R	Westbound	Northbound	T	U	R	Northbound	Grand Total	

Study Name Bear Tavern Rd & Sam Weinroth Rd
Start Date Wednesday, November 14, 2018 7:00
End Date Saturday, November 17, 2018 14:00
Site Code

Peak Hour: PM Peak 11/14/2018 16:30

Road Volumes

TMV	Movement		Southbound		Southbound Tc		Westbound		Westbound To		Northbound		R		Northbound Tc Grand Total			
	Interval	T	L	U	L	U	R	U	T	U	R	U	T	U	R	T	U	R
11/14/2018 16:30	122	25	0	0	147	0	18	0	191	0	14	0	205	0	0	387	0	0
Motorcycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars	112	23	0	0	135	15	0	15	30	169	0	13	182	0	0	347	31	2
Light Goods Vehicles	7	2	0	0	9	2	0	2	4	17	0	1	18	0	0	0	0	0
Buses	1	0	0	0	1	0	0	0	0	1	0	0	1	0	1	0	0	0
Single-Unit Trucks	1	0	0	0	1	0	0	0	0	4	0	0	4	0	0	0	0	5
Articulated Trucks	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	2
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11/14/2018 16:45	120	26	0	0	146	13	0	18	31	185	0	22	207	0	0	384	0	0
Motorcycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars	100	26	0	0	126	13	0	18	31	164	0	20	184	0	0	341	17	33
Light Goods Vehicles	16	0	0	0	16	0	0	0	0	15	0	2	17	0	0	0	2	2
Buses	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0
Single-Unit Trucks	4	0	0	0	4	0	0	0	0	4	0	0	4	0	0	0	4	8
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11/14/2018 17:00	116	32	0	0	148	21	0	28	49	161	0	10	171	0	0	368	0	0
Motorcycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars	101	29	0	0	130	18	0	25	43	152	0	10	162	0	0	335	8	28
Light Goods Vehicles	11	3	0	0	14	3	0	3	6	8	0	0	0	0	0	0	0	3
Buses	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	2
Single-Unit Trucks	1	0	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	0
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11/14/2018 17:15	156	18	0	0	174	28	0	46	74	165	0	22	187	0	0	435	0	0
Motorcycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars	147	17	0	0	164	27	0	39	66	157	0	22	179	0	0	409	4	20
Light Goods Vehicles	7	1	0	0	8	1	0	7	8	4	0	0	0	0	0	0	1	1
Buses	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	4
Single-Unit Trucks	2	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	1
Articulated Trucks	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	514	101	0	615	79	0	110	189	702	0	68	770	0	68	1574	30	2%	
Total HV	13	0	0	0	13	0	0	1	1	0	0	0	0	0	0	16	0	0
HV%	3%	0%	0%	0%	2%	0%	0%	1%	0%	3%	0%	0%	0%	0%	0%	3%	30	2%
Peak 15-min PHF	0.88	0.88	0.64	0.64	74	74	0	0	0	0	0	0	0	0	0	0.93	0.93	0.90
Southbound	T	L	U	U	R	U	R	T	U	R	T	U	R	T	U	R	Grand Total	

Study Name Bear Tavern Rd & Sam Weinroth Rd
Start Date Wednesday, November 14, 2018 7:00
End Date Saturday, November 17, 2018 14:00
Site Code

Peak Hour: SAT Peak 11/17/2018 12:45

Road Volumes

TMV	Movement		Southbound		Southbound Tc		Westbound		Westbound To		Northbound		R		Northbound Tc Grand Total		
	Interval	T	L	U	L	U	R	U	T	U	R	U	T	U	R	U	R
11/17/2018 12:45	102	23	0	0	125	2	0	6	8	93	0	12	105	0	0	0	238
Motorcycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars	91	22	0	0	113	2	0	6	8	80	0	9	89	0	0	0	210
Light Goods Vehicles	9	1	0	0	10	0	0	0	0	11	0	2	13	0	0	0	23
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Single-Unit Trucks	2	0	0	2	0	0	0	0	0	2	0	1	3	0	0	0	5
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11/17/2018 13:00	100	15	0	0	115	3	0	4	7	96	0	11	107	0	1	0	229
Motorcycles	2	0	0	2	0	0	0	0	0	1	0	0	0	1	0	0	3
Cars	94	15	0	0	109	3	0	4	7	85	0	11	96	0	0	0	212
Light Goods Vehicles	3	0	0	3	0	0	0	0	0	9	0	0	0	0	0	0	12
Buses	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	1	0	0	0	1	0	1	1
Articulated Trucks	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11/17/2018 13:15	105	11	0	0	116	10	0	16	26	112	0	6	118	0	0	0	260
Motorcycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars	94	10	0	0	104	7	0	15	22	105	0	6	111	0	0	0	237
Light Goods Vehicles	10	1	0	11	2	0	1	3	4	0	0	0	4	0	0	0	18
Buses	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1
Single-Unit Trucks	1	0	0	1	0	0	0	0	1	1	0	0	0	1	0	0	3
Articulated Trucks	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11/17/2018 13:30	108	4	0	0	112	12	0	31	43	122	0	7	129	0	0	0	284
Motorcycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars	91	3	0	0	94	11	0	29	40	113	0	6	119	0	0	0	253
Light Goods Vehicles	15	1	0	16	1	0	2	3	8	0	1	9	0	0	0	0	28
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Single-Unit Trucks	2	0	0	2	0	0	0	0	0	1	0	0	0	1	0	0	3
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	415	53	0	468	27	0	57	84	423	0	36	459	0	1011	15	1%	1%
Total HV	6	0	0	0	1%	1%	0%	0%	1%	0%	0%	1%	0%	1%	8	2%	2%
HV%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	15	1%	1%
Peak 15-min PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.89	0.89	0.89
Southbound	T	L	U	Southbound	L	U	R	Southbound	Westbound	Westbound	Northbound	T	U	R	Northbound	Grand Total	

Study Name	Bear Tavern Rd & Upper Ferry Rd & Parkway Rd																	
Start Date	Wednesday, November 14, 2018 7:00																	
End Date	Saturday, November 17, 2018 14:00																	
Site Code																		

Peak Hour: AM Peak 11/14/2018 8:00

Road Volumes

TMV Interval	Movement Southbound				Southbound To C				Westbound				Westbound To N				Northbound				Northbound To E				Eastbound				Eastbound To Grand Total				
	R	T	L	U	R	T	L	U	R	T	L	U	R	T	L	U	R	T	L	U	R	T	L	U	R	T	L	U	R	T	L	U	
11/14/2018 8:00	25	116	69	0	210	51	30	3	0	84	14	73	7	0	94	5	25	17	0	47	0	0	0	0	0	0	0	0	0	435			
Motorcycles	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		
Cars	24	102	51	0	177	35	23	3	0	61	12	65	6	0	83	4	22	15	0	41	3	39	0	0	0	0	0	0	0	0	362		
Light Goods Vehicle	1	8	10	0	19	8	3	0	0	11	1	5	0	0	6	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	1		
Buses	0	3	2	0	5	3	3	0	0	6	0	1	1	0	2	1	0	1	0	2	0	0	1	0	0	1	0	0	0	0	15		
Single-Unit Trucks	0	3	5	0	8	4	1	0	0	5	1	1	0	0	2	0	1	0	0	1	0	0	1	0	0	1	0	0	0	0	16		
Articulated Trucks	0	0	0	0	0	1	0	0	0	1	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2		
Bicycles on Road	0	0	1	0	1	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	1		
11/14/2018 8:15	15	135	73	0	223	52	26	8	0	86	13	71	9	0	93	10	25	32	0	67	469	0	0	0	0	0	0	0	0	0	0		
Motorcycles	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		
Cars	13	117	55	0	185	40	19	7	0	66	12	61	7	0	80	8	23	29	0	60	391	0	0	0	0	0	0	0	0	0	51		
Light Goods Vehicle	1	9	14	0	24	10	4	1	0	15	1	5	2	0	8	2	1	1	0	4	32	0	0	0	0	0	0	0	0	0	51		
Buses	0	5	2	0	7	1	1	0	0	2	0	2	0	0	2	0	1	1	0	2	0	1	0	0	1	0	0	0	0	0	13		
Single-Unit Trucks	1	4	1	0	6	1	2	0	0	3	0	3	0	0	3	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	13		
Articulated Trucks	0	0	1	0	0	1	1	0	0	0	1	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	4		
Bicycles on Road	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		
11/14/2018 8:30	13	108	80	0	201	58	22	8	0	88	17	81	5	0	103	14	24	19	0	57	449	0	0	0	0	0	0	0	0	0	449		
Motorcycles	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		
Cars	13	99	68	0	180	46	16	6	0	68	14	71	3	0	88	12	21	17	0	50	386	0	0	0	0	0	0	0	0	0	386		
Light Goods Vehicle	0	3	8	0	11	6	5	0	0	11	1	5	0	0	6	0	3	1	0	4	32	0	0	0	0	0	0	0	0	0	32		
Buses	0	3	1	0	4	1	0	1	0	2	1	0	1	0	2	1	0	0	3	0	0	1	0	0	1	0	0	0	0	0	9		
Single-Unit Trucks	0	2	3	0	5	4	1	1	0	6	1	3	1	0	5	1	0	1	0	2	0	1	0	0	2	0	0	0	0	0	18		
Articulated Trucks	0	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	4		
Bicycles on Road	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		
Grand Total	62	440	284	0	786	228	105	28	0	361	61	313	31	0	405	40	103	95	0	238	1790												
Total HV	1	25	21	0	47	26	11	2	0	39	4	18	3	0	25	4	1	9	0	14	125	0	0	0	0	0	0	0	0	0	7%		
HV%	2%	6%	7%	0%	6%	11%	10%	7%	0%	11%	7%	6%	10%	0%	6%	10%	1%	9%	0%	6%	7%	0	0	0	0	0	0	0	0	0	7%		
Peak 15-min PHF					223					103					115						67	469										0.89	0.95
					0.88					0.88					0.88						67	469										0.89	0.95
Southbound	R	T	L	U	Southbound/Westbound				R	T	L	U	Westbound/Northbound				R	T	L	U	Northbound/Eastbound				R	T	L	U	Eastbound Grand Total				

Study Name	Bear Tavern Rd & Upper Ferry Rd & Parkway Rd																																				
Start Date	Wednesday, November 14, 2018 7:00																																				
End Date	Saturday, November 17, 2018 14:00																																				
Site Code																																					
Peak Hour: PM Peak	11/14/2018 16:30																																				
Road Volumes																																					
TMV	Movement				Southbound				Southbound TC				Westbound				Westbound To				Northbound				Northbound To				Eastbound				Eastbound To				Grand Total
Interval	R	T	L	U	R	T	L	U	R	T	L	U	R	T	L	U	R	T	L	U	R	T	L	U	R	T	L	U									
11/14/2018 16:30	19	50	58	0	127	82	53	13	0	148	8	116	8	0	132	4	28	13	0	45	0	452	0	0	0	0	0	0	0								
Motorcycles	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								
Cars	19	44	49	0	112	73	48	11	0	132	7	105	7	0	119	3	26	11	0	40	0	403	0	0	0	0	0	0	0								
Light Goods Vehicle	0	5	7	0	12	6	4	2	0	12	1	9	1	0	11	0	2	1	0	3	0	38	0	0	0	0	0	0	0								
Buses	0	0	1	0	1	1	1	0	0	2	0	0	0	0	0	1	0	0	0	1	0	4	0	0	0	0	0	0	0								
Single-Unit Trucks	0	0	1	0	1	2	0	0	0	2	0	2	0	0	2	0	0	0	1	0	1	0	1	0	1	0	0	1	6								
Articulated Trucks	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1								
Bicycles on Road	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								
11/14/2018 16:45	27	56	56	0	139	88	59	7	0	154	8	95	5	0	108	11	36	20	0	67	0	468	0	0	0	0	0	0	0								
Motorcycles	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								
Cars	21	51	49	0	121	75	53	7	0	135	6	89	4	0	99	7	33	15	0	55	0	410	0	0	0	0	0	0	0								
Light Goods Vehicle	4	5	6	0	15	12	3	0	0	15	2	2	0	0	4	0	2	5	0	7	0	41	0	0	0	0	0	0	0								
Buses	0	0	0	0	0	1	1	0	0	2	0	1	0	0	1	1	0	0	0	1	0	4	0	0	0	0	0	0	0								
Single-Unit Trucks	2	0	1	0	3	0	2	0	0	2	0	3	1	0	4	2	1	0	0	3	0	12	0	0	0	0	0	0	0								
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0									
Bicycles on Road	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									
11/14/2018 17:00	19	54	61	0	134	64	54	8	0	126	9	98	7	0	114	10	32	13	0	55	0	429	0	0	0	0	0	0	0								
Motorcycles	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									
Cars	19	50	42	0	111	62	53	8	0	123	9	94	6	0	109	10	30	11	0	51	0	394	0	0	0	0	0	0	0								
Light Goods Vehicle	0	3	17	0	20	2	0	0	0	2	0	3	0	0	3	0	2	2	0	4	0	29	0	0	0	0	0	0	0								
Buses	0	1	2	0	3	0	0	0	0	0	0	1	0	0	1	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	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0									
Articulated Trucks	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0									
Bicycles on Road	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									
Grand Total	84	225	238	0	547	320	222	36	0	578	36	392	31	0	459	36	135	67	0	238	0	1822	0	0	0	0	0	0	0								
Total HV	2	3	6	0	11	7	6	0	0	13	2	7	4	0	13	6	1	2	0	9	0	46	0	0	0	0	0	0	0								
HV%	2%	1%	3%	0%	2%	2%	3%	0%	0%	2%	6%	2%	13%	0%	3%	17%	1%	3%	0%	4%	3%	3%	0%	4%	3%	0%	0%	0%	0%								
Peak 15-min PHF					147					154					132								71	0	473					0.84	0.96						
Southbound	R	T	L	U	Southbound				Southbound TC				Westbound				Westbound				Northbound				Northbound To				Eastbound				Grand Total				
					R	T	L	U	R	T	L	U	R	T	L	U	R	T	L	U	R	T	L	U	R	T	L	U									

Study Name		Bear Tavern Rd & Upper Ferry Rd & Parkway Rd																					
Start Date		Wednesday, November 14, 2018 7:00																					
End Date		Saturday, November 17, 2018 14:00																					
Site Code																							
Peak Hour: SAT Peak		11/17/2018 12:45																					
Road Volumes																							
TMV		Movement Southbound				Southbound To				Westbound				Westbound To				Northbound					
Interval		R	T	L	U	R	T	L	U	R	T	L	U	R	T	L	U	R	T	L	U	Grand Total	
11/17/2018 12:45		15	42	49	0	106	56	34	11	0	101	13	27	2	0	42	12	32	19	0	63	312	
Motorcycles		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Cars		14	36	45	0	95	51	34	11	0	96	13	25	2	0	40	12	26	18	0	56	287	
Light Goods Vehicles		1	6	3	0	10	5	0	0	0	5	0	1	0	0	1	0	5	1	0	6	22	
Buses		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	1	0	1	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	3	
Articulated Trucks		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles on Road		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11/17/2018 13:00		17	31	49	0	97	59	37	16	0	112	10	32	10	0	52	4	35	16	0	55	316	
Motorcycles		1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	3	
Cars		15	30	47	0	92	59	34	14	0	107	8	28	9	0	45	4	31	13	0	48	292	
Light Goods Vehicles		1	0	1	0	2	0	3	1	0	4	2	3	1	0	6	0	4	1	0	5	17	
Buses		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	1	0	1	0	0	1	0	1	0	1	0	0	1	0	0	1	0	1	4	
Articulated Trucks		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles on Road		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11/17/2018 13:15		16	42	43	0	101	58	45	9	0	112	20	38	4	0	62	10	28	16	0	54	329	
Motorcycles		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Cars		15	32	41	0	88	56	41	9	0	106	19	34	4	0	57	10	27	15	0	52	303	
Light Goods Vehicles		1	8	2	0	11	2	4	0	0	6	1	2	0	0	3	0	1	1	0	2	22	
Buses		0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	
Single-Unit Trucks		0	2	0	0	2	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	3	
Articulated Trucks		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles on Road		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Grand Total		70	149	204	0	423	239	150	49	0	438	51	141	19	0	211	34	115	67	0	216	1288	
Total HV		1	2	2	0	5	1	0	2	0	3	0	4	0	0	4	0	2	1	0	3	15	
HV%		1%	1%	1%	0%	1%	0%	0%	4%	0%	1%	0%	3%	0%	0%	2%	0%	2%	1%	0%	1%	1%	
Peak 15-min PHF		119				0.89				113				0.97				62				0.85	
Southbound		R	T	L	U	Southbound				Westbound				Westbound				Northbound				Northbound	
		R	T	L	U																		
		R	T	L	U																		
		R	T	L	U																		

Study Name Scotch Rd & Sam Weinroth Rd
 Start Date Wednesday, November 14, 2018 7:00
 End Date Saturday, November 17, 2018 14:00
 Site Code
 Peak Hour: AM Peak 11/14/2018 8:00

Road Volumes

TMV	Movement		Southbound				Westbound				Northbound				Eastbound				Grand Total						
	Interval	R	T	L	U	Southbound TC	R	T	L	U	Westbound TC	R	T	L	U	Northbound TC	R	T	L	U	Eastbound TC	R	T	L	U
11/14/2018 8:00	34	9	6	0	49	1	76	0	0	77	8	69	12	0	89	0	0	0	0	98	0	0	0	98	
Motorcycles	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Cars	27	6	1	0	34	0	62	0	0	62	5	67	8	0	80	0	0	0	0	88	0	0	0	88	
Light Goods Vehicle:	4	3	0	10	0	10	0	0	0	10	3	1	1	0	5	0	9	0	0	0	0	0	0	0	34
Buses	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	1	2
Single-Unit Trucks	2	0	2	0	4	1	1	0	0	2	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0
Articulated Trucks	1	0	0	0	1	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	3
Bicycles on Road	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
11/14/2018 8:15	40	9	22	0	71	0	102	0	0	102	5	103	14	0	122	0	0	0	0	109	2	0	0	111	
Motorcycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	406
Cars	33	7	9	0	49	0	93	0	0	93	4	99	11	0	114	0	0	0	0	103	1	0	0	104	
Light Goods Vehicle:	4	1	6	0	11	0	6	0	0	6	1	4	1	0	6	0	0	0	0	5	0	0	0	5	28
Buses	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	2
Single-Unit Trucks	3	1	5	0	9	0	1	0	0	1	0	0	0	2	0	0	0	0	0	1	0	0	0	1	13
Articulated Trucks	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
11/14/2018 8:30	24	9	16	0	49	0	76	0	0	76	7	86	26	0	119	0	0	0	0	111	2	0	0	113	
Motorcycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	357
Cars	16	8	10	0	34	0	71	0	0	71	6	83	26	0	115	0	0	0	0	106	2	0	0	108	
Light Goods Vehicle:	5	1	3	0	9	0	3	0	0	3	1	2	0	0	3	0	0	0	0	4	0	0	0	4	19
Buses	1	0	1	0	2	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	4
Single-Unit Trucks	2	0	2	0	4	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Articulated 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	1
Bicycles on Road	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
11/14/2018 8:45	32	8	12	0	52	0	94	0	0	94	5	84	23	0	112	0	0	0	0	109	1	0	0	110	
Motorcycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	368
Cars	23	7	11	0	41	0	84	0	0	84	4	80	20	0	104	0	0	0	0	93	1	0	0	94	
Light Goods Vehicle:	7	1	0	0	8	0	6	0	0	6	0	4	2	0	6	0	0	0	0	6	0	0	0	6	26
Buses	0	0	0	0	1	0	1	0	0	1	0	1	0	0	1	0	0	0	6	0	0	0	6	8	
Single-Unit Trucks	2	0	1	0	3	0	0	0	0	3	0	0	0	0	1	0	0	0	4	0	0	0	4	11	
Articulated 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
Bicycles on Road	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
Grand Total	130	35	56	0	221	1	348	0	0	349	25	342	75	0	442	0	427	5	0	432	5	0	444	1444	
Total HV	11	1	13	0	25	1	11	0	0	12	2	1	2	0	9	0	13	1	0	0	14	0	0	0	60
HV%	8%	3%	23%	0%	11%	100%	3%	0%	3%	4%	1%	8%	0%	2%	0%	3%	20%	0%	3%	3%	4%	0	0	0	56
PHF					0.78		0.86			0.91						0.91									0.89
																									Eastbound Grand Total

Study Name Scotch Rd & Sam Weinroth Rd
 Start Date Wednesday, November 14, 2018 7:00
 End Date Saturday, November 17, 2018 14:00
 Site Code
 Peak Hour: PM Peak

Road Volumes

TMV	Movement	Southbound			Westbound			Northbound			Eastbound			Northbound To Grand Total				
		R	T	L	U	R	T	L	U	R	T	L	U	R	T	L	U	
11/14/2018 16:30	Motorcycles	60	9	26	0	95	0	116	1	0	117	11	13	23	0	47	0	112
	Cars	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Light Goods Vehicles	58	8	20	0	86	0	107	1	0	108	11	10	20	0	41	0	101
	Buses	2	1	6	0	9	0	8	0	0	8	0	0	2	0	2	0	7
	Single-Unit Trucks	0	0	0	0	0	0	1	0	0	1	0	3	1	0	4	0	2
	Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11/14/2018 16:45	Motorcycles	38	14	20	0	72	0	95	0	0	95	11	10	18	0	39	0	116
	Cars	38	13	17	0	68	0	0	0	0	0	0	0	0	0	0	0	0
	Light Goods Vehicles	0	1	3	0	4	0	4	0	0	4	0	2	0	0	2	0	2
	Buses	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0
	Single-Unit Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Articulated Trucks	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
	Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11/14/2018 17:00	Motorcycles	125	11	47	0	183	0	109	1	0	110	15	12	26	0	53	0	129
	Cars	123	11	47	0	181	0	104	1	0	105	14	10	23	0	47	0	129
	Light Goods Vehicles	2	0	0	0	2	0	3	0	0	3	1	1	2	0	4	0	9
	Buses	0	0	0	0	0	0	0	1	0	1	0	0	1	0	0	0	2
	Single-Unit Trucks	0	0	0	0	0	0	0	1	0	1	0	0	1	0	0	0	2
	Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11/14/2018 17:15	Motorcycles	57	6	28	0	91	0	82	0	0	82	12	12	40	0	64	1	121
	Cars	57	6	27	0	90	0	78	0	0	78	12	11	40	0	63	1	113
	Light Goods Vehicles	0	0	1	0	1	0	3	0	0	3	0	1	0	0	5	0	10
	Buses	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1
	Single-Unit Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
	Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	Total HV	280	40	121	0	441	0	402	2	0	404	49	47	107	0	203	1	478
	HV%	0%	0%	0%	0%	0%	0%	0%	1%	0%	1%	0%	5	0	11%	2%	0%	8
	PHF																	
	Southbound	R	T	L	U	Southbound	Westbound	R	T	L	U	Westbound	Northbound	R	T	L	U	Northbound Eastbound
																		Eastbound Grand Total

Study Name Scotch Rd & Sam Weinroth Rd
 Start Date Wednesday, November 14, 2018 7:00
 End Date Saturday, November 17, 2018 14:00
 Site Code

Road Volumes

Peak Hour: SAT Peak 11/17/2018 12:30

TMV	Movement		Southbound			Southbound TC			Westbound			Northbound			Northbound TC			Eastbound			Eastbound TC			Grand Total		
	Interval	R	T	L	U	R	T	L	U	R	T	L	U	R	T	L	U	R	T	L	U	R	T	L	U	
11/17/2018 12:30	0	4	1	0	0	5	0	0	0	58	3	9	0	17	1	0	0	70	1	0	0	68	1	0	150	
Motorcycles	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	
Cars	0	2	1	0	0	3	0	0	0	49	4	3	0	0	16	1	61	1	0	0	0	0	0	63	131	
Light Goods Vehicles	0	2	0	0	2	0	7	1	0	8	1	0	0	1	0	5	0	0	0	0	0	0	0	5		
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2		
Single-Unit Trucks	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Articulated 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		
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
11/17/2018 12:45	6	3	5	0	14	0	63	0	0	63	8	2	6	0	16	0	64	0	0	0	0	0	0	64		
Motorcycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Cars	5	3	4	0	12	0	55	0	0	55	6	2	6	0	14	0	58	0	0	0	0	0	0	58		
Light Goods Vehicles	1	0	1	0	2	0	8	0	0	8	2	0	0	0	2	0	5	0	0	0	0	0	0	5		
Buses	0	0	0	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		
Articulated 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		
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
11/17/2018 13:00	5	1	0	11	0	69	0	0	69	11	2	10	0	23	0	51	0	0	0	0	0	0	0	51		
Motorcycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Cars	4	4	1	0	9	0	57	0	0	57	11	2	10	0	23	0	49	0	0	0	0	0	0	49		
Light Goods Vehicles	1	1	0	0	2	0	10	0	0	10	0	0	0	0	0	1	0	0	0	0	0	0	0	1		
Buses	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2		
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	1		
Articulated 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		
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
11/17/2018 13:15	4	2	0	10	0	62	1	0	63	4	1	12	0	17	1	46	1	0	0	0	0	0	0	48		
Motorcycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Cars	3	4	2	0	9	0	56	1	0	57	4	1	11	0	16	1	46	1	0	0	0	0	0	48		
Light Goods Vehicles	1	0	0	0	1	0	6	0	0	6	0	0	0	1	0	0	0	0	0	0	0	0	0	8		
Buses	0	0	0	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		
Articulated 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		
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Grand Total	15	16	9	0	40	0	251	2	0	253	28	8	37	0	73	2	229	2	0	233	0	0	233	599		
Total HV	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	4	0	0	0	4			
HV%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	7		
PHF										0.71							0.92							0.95		
	Southbound	R	T	L	U	Southbound	Westbound	R	T	L	U	Southbound	Westbound	R	T	L	U	Southbound	R	T	L	U	Southbound	Westbound	Eastbound Grand Total	

Study Name Sam Weinroth Rd & Lockhardt Ave & Scotch Rd Ramp
 Start Date Wednesday, November 14, 2018 7:00
 End Date Saturday, November 17, 2018 14:00
 Site Code

Peak Hour: AM Peak 11/14/2018 8:00

Road Volumes

TMV	Movement Southbound		Southbound TC				Westbound To Northbound				Northbound TC				Eastbound				Eastbound Tot Grand Total																	
	Interval	R	T	L	U	R	T	L	U	R	T	L	U	R	T	L	U																			
11/14/2018 8:00	14	3	66	0	83	0	10	0	0	2	0	0	3	0	20	0	0	0	20	116																
Motorcycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																
Cars	13	1	64	0	78	0	7	0	0	7	0	0	0	0	16	0	0	0	0	16																
Light Goods Vehicle:	1	1	2	0	4	0	3	0	0	3	0	0	0	0	3	0	0	0	0	3																
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																
Single-Unit Trucks	0	1	0	0	1	0	0	0	0	0	0	1	0	2	0	1	0	0	1	4																
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1																
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																
11/14/2018 8:15	17	1	97	0	115	0	7	1	0	8	0	0	0	0	24	0	0	0	0	24																
Motorcycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																
Cars	14	1	93	0	108	0	6	0	0	6	0	0	0	0	20	0	0	0	0	20																
Light Goods Vehicle:	1	0	4	0	5	0	1	0	0	1	0	0	0	0	2	0	0	0	0	2																
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																
Single-Unit Trucks	2	0	0	0	2	0	0	1	0	1	0	0	0	0	2	0	0	0	0	2																
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																
11/14/2018 8:30	17	4	89	0	110	0	10	0	0	10	0	0	1	0	1	0	0	0	0	35																
Motorcycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																
Cars	15	2	88	0	105	0	9	0	0	9	0	0	1	0	31	0	0	0	0	32																
Light Goods Vehicle:	1	2	0	0	3	0	1	0	0	1	0	0	0	0	2	0	0	0	0	2																
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																
Single-Unit Trucks	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																
Articulated Trucks	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1																
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																
11/14/2018 8:45	21	4	75	0	100	0	7	1	0	8	1	0	0	1	1	0	0	0	0	35																
Motorcycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																
Cars	16	1	73	0	90	0	6	1	0	7	1	0	0	0	29	0	0	0	0	30																
Light Goods Vehicle:	2	2	0	6	0	1	0	0	0	1	0	0	0	0	4	0	0	0	0	4																
Buses	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	2																
Single-Unit Trucks	2	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3																
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0																
Grand Total	69	12	327	0	408	0	34	2	0	36	3	0	2	5	2	112	0	0	114	563																
Total HV	6	2	1	0	9	0	1	0	0	2	0	1	0	5	0	0	0	5	18																	
HV%	9%	17%	0%	0%	2%	0%	50%	0%	3%	67%	0%	50%	0%	4%	0%	0%	0%	4%	3%																	
PHF	Southbound		R		Southbound Westbound		R		T		L		U		Westbound Northbound		R		T		L		U		Northbound Eastbound		R		T		L		U		Eastbound Grand Total	

Study Name Sam Weinroth Rd & Lochheed Ave & Scotch Rd Ramp
Start Date Wednesday, November 14, 2018 7:00
End Date Saturday, November 17, 2018 14:00
Site Code
Peak Hour: PM Peak **11/14/2018 16:30**

Road Volumes

TMV	Movement		Southbound		Westbound		Northbound		Eastbound		Eastbound To Grand Total		
	Interval	R	T	L	U	R	T	L	U	R	T	L	U
11/14/2018:16:30	19	0	14	0	33	0	10	0	0	3	1	28	0
Motorcycles	0	0	0	0	0	0	0	0	0	0	0	0	29
Cars	18	0	11	0	29	0	9	0	0	3	1	25	0
Light Goods Vehicles	0	0	0	0	0	1	0	0	0	0	0	0	67
Buses	1	0	3	0	4	0	0	0	0	0	0	1	0
Single-Unit Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0
11/14/2018:16:45	12	1	12	0	25	0	14	0	0	1	0	2	27
Motorcycles	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars	10	1	10	0	21	0	13	0	0	13	1	0	27
Light Goods Vehicles	2	0	1	0	3	0	1	0	0	0	0	0	4
Buses	0	0	1	0	1	0	0	0	0	0	0	0	1
Single-Unit Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0
11/14/2018:17:00	19	0	15	0	34	0	12	1	0	13	7	0	32
Motorcycles	0	0	0	0	0	0	0	0	0	0	0	0	33
Cars	16	0	13	0	29	0	12	1	0	13	6	0	88
Light Goods Vehicles	2	0	1	0	3	0	0	0	0	0	0	0	4
Buses	0	0	1	0	1	0	0	0	0	0	0	0	1
Single-Unit Trucks	0	0	0	0	0	0	0	0	0	0	0	0	1
Articulated Trucks	1	0	0	1	0	0	0	0	0	0	0	0	1
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0
11/14/2018:17:15	19	0	14	0	33	0	10	0	0	10	1	0	49
Motorcycles	0	0	0	0	0	0	0	0	0	0	0	0	93
Cars	19	0	13	0	32	0	10	0	0	10	1	0	32
Light Goods Vehicles	0	0	1	0	1	0	0	0	0	0	0	0	4
Buses	0	0	0	0	0	0	0	0	0	0	0	0	1
Single-Unit Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	69	1	55	0	125	0	46	1	0	47	12	0	14
Total HV	2	0	5	0	7	0	0	0	1	0	1	0	9
Hv%	3%	0%	5%	0%	6%	0%	0%	0%	8%	0%	7%	0%	1%
PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.84	0.84	0.84	0.84	0.87
	Southbound	R	T	L	U	Southbound	R	T	L	U	Southbound	R	T
												L	U
												L	U
													Eastbound Grand Total

Study Name Sam Weinroth Rd & Lockheed Ave & Scotch Rd Ramp
 Start Date Wednesday, November 14, 2018 7:00
 End Date Saturday, November 17, 2018 14:00
 Site Code
 Peak Hour: SAT Peak 11/17/2018 12:30

Road Volumes

TMV	Movement Southbound			Southbound Tc			Westbound			Westbound Tc			Northbound			Northbound Tc			Eastbound			Eastbound To Grand Total		
	Interval	R	T	L	U	R	T	L	U	R	T	L	U	R	T	L	U	R	T	L	U	R	T	L
11/17/2018 12:30	5	0	4	0	9	0	6	0	0	6	1	0	0	1	0	11	0	1	12	0	0	0	0	28
Motorcycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars	4	0	4	0	8	0	4	0	0	4	1	0	0	1	0	9	0	0	1	10	0	0	0	23
Light Goods Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Buses	0	0	0	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
Articulated Trucks	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11/17/2018 12:45	12	0	1	0	13	0	4	0	0	4	0	0	0	0	0	0	0	0	1	15	0	0	0	16
Motorcycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars	10	0	1	0	11	0	4	0	0	4	0	0	0	0	0	0	0	0	0	12	0	0	0	12
Light Goods Vehicles	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	0	0	0	4
Buses	0	0	0	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
Articulated 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
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11/17/2018 13:00	11	2	5	0	18	0	4	1	0	5	0	0	0	0	0	0	0	0	0	18	0	0	0	41
Motorcycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars	10	2	5	0	17	0	4	0	0	4	0	0	0	0	0	0	0	0	0	16	0	0	0	37
Light Goods Vehicles	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0
Buses	0	0	0	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
Articulated Trucks	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11/17/2018 13:15	8	0	3	0	11	0	6	0	0	6	0	0	0	0	0	0	0	0	0	14	0	0	0	31
Motorcycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars	7	0	3	0	10	0	6	0	0	6	0	0	0	0	0	0	0	0	0	11	0	0	0	27
Light Goods Vehicles	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	4
Buses	0	0	0	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
Articulated 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
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	36	2	13	0	51	0	20	1	0	21	1	0	0	1	1	58	0	1	60	133	0	0	0	
Total HV	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
HV%	6%	0%	0%	0%	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
PHF	0.71	0.88	0.25	0.81	0.83	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Southbound	R	T	L	U	Southbound	Westbound	R	T	L	U	Southbound	Northbound	R	T	L	U	Northbound	Eastbound	R	T	L	U	Northbound	Eastbound

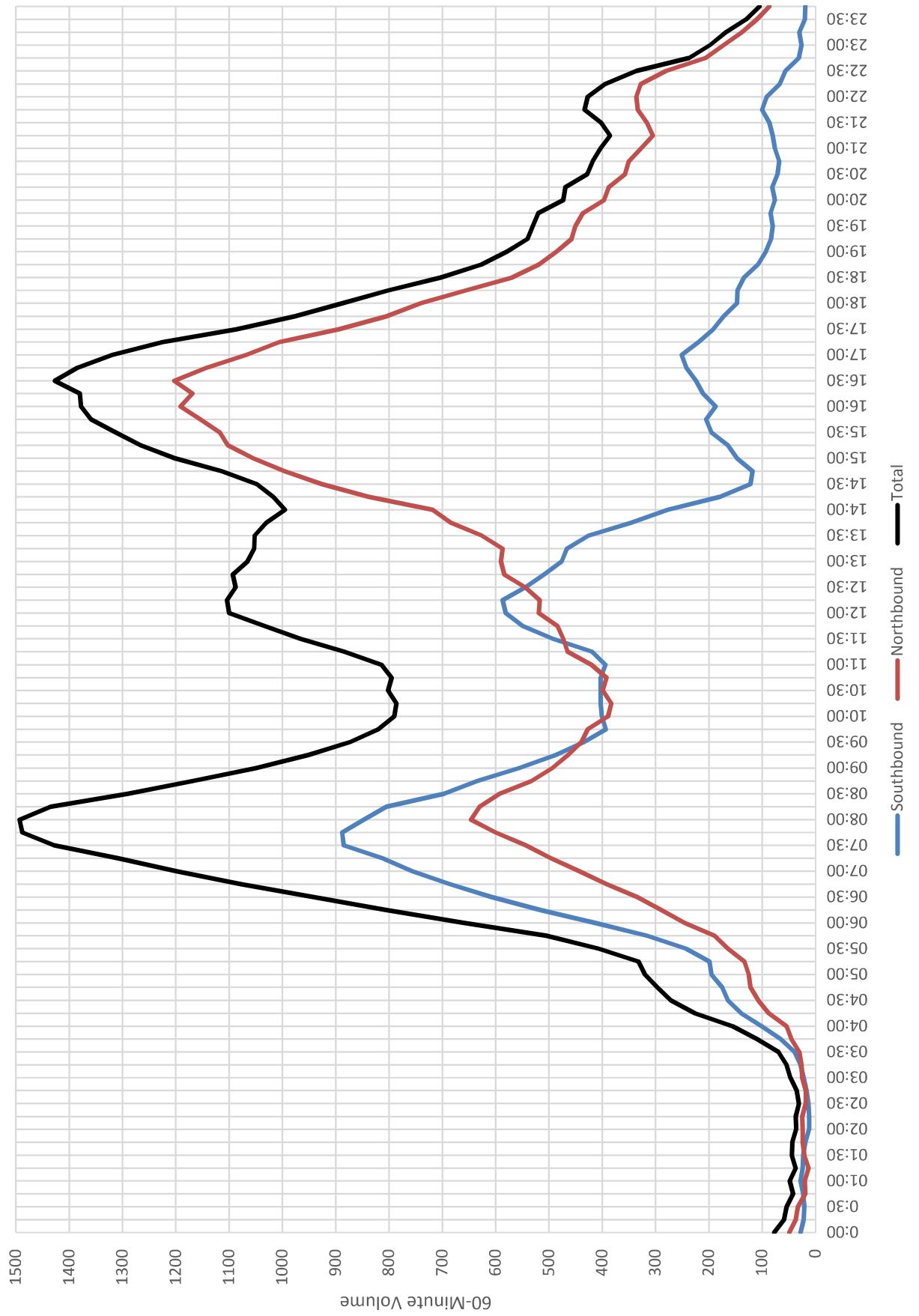
Study Name Sam Weinroth Rd & Scotch Rd Ramp
Start Date 11/14/2018
Start Time 7:00
Site Code

Channel	Right Turns	Left Turns	
Direction	Westbound	Westbound	
7:00	19	1	20
7:15	34	4	38
7:30	23	3	26
7:45	24	10	34
8:00	34	6	40
8:15	45	4	49
8:30	22	10	32
8:45	29	5	34
16:00	10	10	20
16:15	5	7	12
16:30	13	5	18
16:45	13	11	24
17:00	6	6	12
17:15	7	7	14
17:30	11	6	17
17:45	6	3	9
12:00	4	3	7
12:15	4	4	8
12:30	1	4	5
12:45	3	3	6
13:00	6	3	9
13:15	4	3	7
13:30	1	2	3
13:45	1	3	4

Urban Engineers
ATR Location 1
BearTavern Road, north of Sam Weinroth Road

	14-Nov-18	Channel 1		Channel 2		Combined	
	Wed	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
12:00		22	136	12	125	34	261
12:15		8	114	7	163	15	277
12:30		16	107	5	152	21	259
12:45		3	162	4	141	7	303
01:00		10	134	6	131	16	265
01:15		4	141	6	120	10	261
01:30		2	147	7	117	9	264
01:45		4	168	9	108	13	276
02:00		3	131	2	121	5	252
02:15		12	180	5	80	17	260
02:30		5	205	3	37	8	242
02:45		4	202	2	39	6	241
03:00		4	251	2	23	6	274
03:15		5	268	6	23	11	291
03:30		5	275	7	33	12	308
03:45		11	261	7	68	18	329
04:00		5	298	8	40	13	338
04:15		9	283	17	54	26	337
04:30		20	312	33	43	53	355
04:45		20	298	43	50	63	348
05:00		38	276	46	64	84	340
05:15		29	317	42	67	71	384
05:30		35	252	44	61	79	313
05:45		23	223	63	59	86	282
06:00		46	214	50	32	96	246
06:15		60	205	86	40	146	245
06:30		60	163	117	41	177	204
06:45		79	158	160	34	239	192
07:00		90	130	153	31	243	161
07:15		105	118	177	28	282	146
07:30		118	113	196	15	314	128
07:45		130	125	230	19	360	144
08:00		143	101	209	21	352	122
08:15		152	111	250	25	402	136
08:30		175	99	199	19	374	118
08:45		176	86	189	11	365	97
09:00		127	92	167	26	294	118
09:15		115	80	142	15	257	95
09:30		115	92	137	16	252	108
09:45		137	63	110	19	247	82
10:00		97	70	98	30	195	100
10:15		90	91	89	21	179	112
10:30		103	109	96	30	199	139
10:45		99	66	118	10	217	76
11:00		91	62	100	6	191	68
11:15		106	43	89	10	195	53
11:30		96	35	96	5	192	40
11:45		127	32	109	5	236	37
Total		2934	7599	3753	2428	6687	10027
Day Total		10533		6181		16714	
% Total		17.6%	45.5%	22.5%	14.5%		
Peak		08:00	04:30	07:45	00:15	08:00	04:30
Vol.		646	1203	888	587	1493	1427
P.H.F.		0.918	0.949	0.888	0.900	0.928	0.929

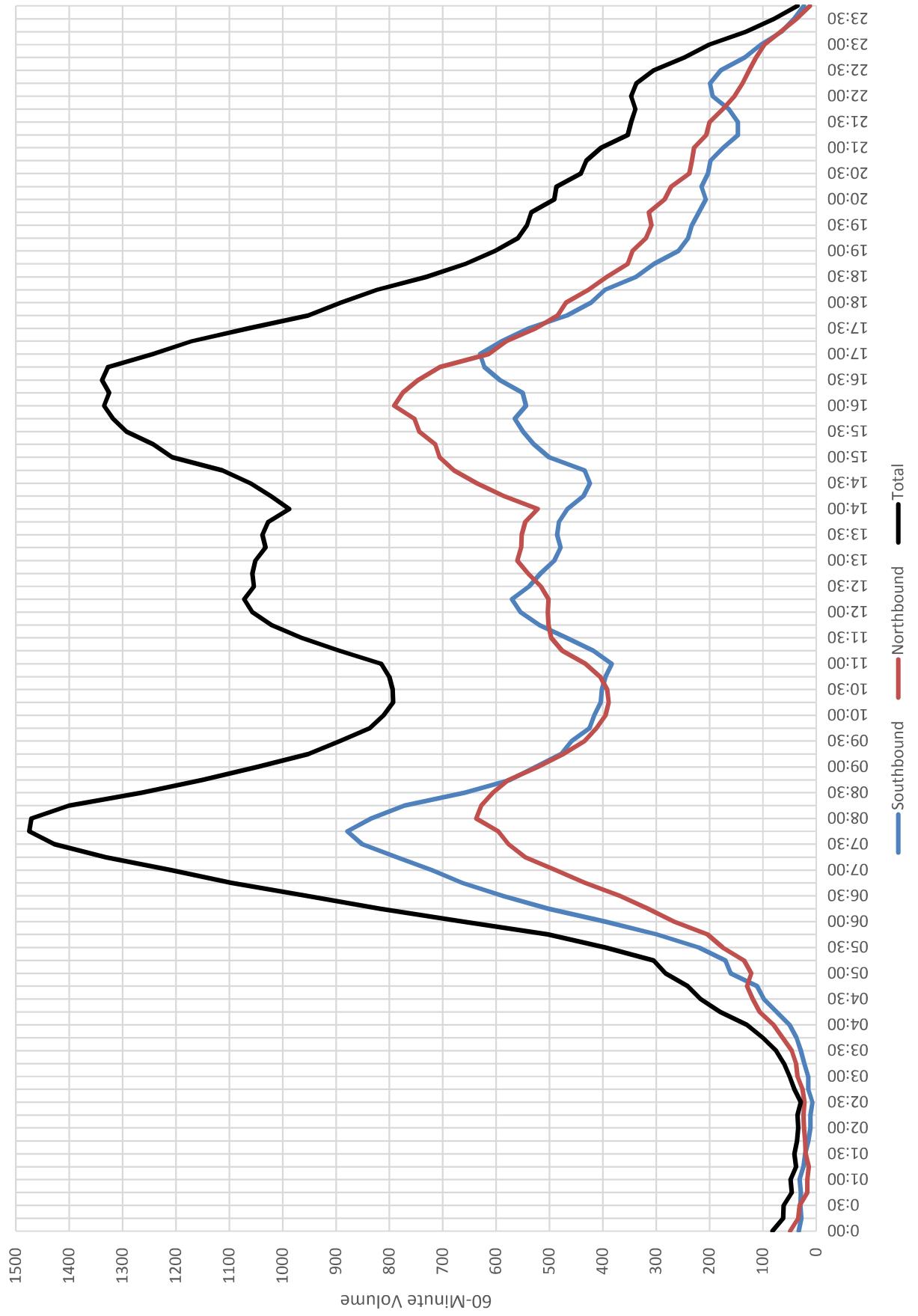
ATR Data - ATR 1 - Bear Tavern Road, north of Sam Weinroth Road - Weekday(11/14/2018)



Urban Engineers
ATR Location 2
BearTavern Road, south of Sam Weinroth Road

	14-Nov-18	Northbound		Southbound		Combined	
	Wed	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
12:00		20	132	14	129	34	261
12:15		8	117	5	145	13	262
12:30		17	116	9	141	26	257
12:45		4	138	5	139	9	277
01:00		5	131	9	145	14	276
01:15		5	131	7	113	12	244
01:30		3	140	8	120	11	260
01:45		4	158	7	113	11	271
02:00		2	124	2	133	4	257
02:15		11	130	4	120	15	250
02:30		4	133	2	116	6	249
02:45		6	135	3	97	9	232
03:00		3	188	2	103	5	291
03:15		9	180	0	108	9	288
03:30		8	176	10	126	18	302
03:45		15	162	3	164	18	326
04:00		6	196	9	131	15	327
04:15		17	210	7	128	24	338
04:30		25	185	18	142	43	327
04:45		32	200	16	143	48	343
05:00		32	180	33	137	65	317
05:15		30	181	31	171	61	352
05:30		36	144	31	171	67	315
05:45		24	109	65	151	89	260
06:00		45	147	43	97	88	244
06:15		70	126	81	120	151	246
06:30		65	103	110	99	175	202
06:45		86	93	161	106	247	199
07:00		94	105	150	71	244	176
07:15		123	92	166	62	289	154
07:30		130	63	186	65	316	128
07:45		141	84	218	60	359	144
08:00		151	80	216	53	367	133
08:15		155	82	231	55	386	137
08:30		149	68	214	52	363	120
08:45		182	54	173	47	355	101
09:00		142	68	154	61	296	129
09:15		133	48	117	43	250	91
09:30		120	63	130	47	250	110
09:45		127	50	125	23	252	73
10:00		94	45	106	34	200	79
10:15		93	42	97	43	190	85
10:30		98	38	97	64	195	102
10:45		110	28	116	53	226	81
11:00		88	30	94	39	182	69
11:15		96	30	95	23	191	53
11:30		111	25	90	19	201	44
11:45		137	12	104	23	241	35
Total		3066	5272	3574	4545	6640	9817
Day Total		8338		8119		16457	
% Total		18.6%	32.0%	21.7%	27.6%		
Peak		08:00	04:00	07:45	05:00	07:45	04:30
Vol.		637	791	879	630	1475	1339
P.H.F.		0.875	0.942	0.951	0.921	0.955	0.951

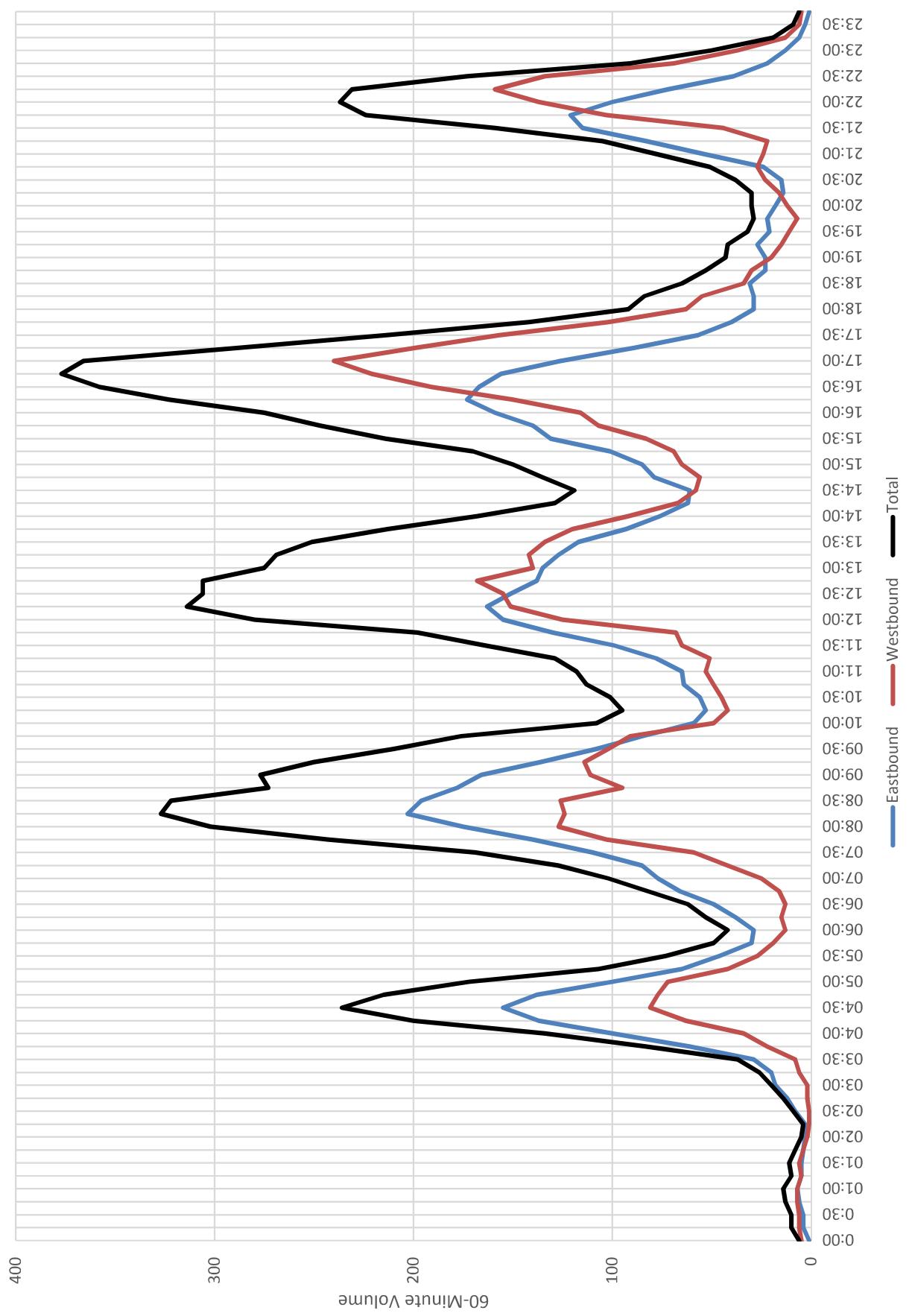
ATR Data - ATR 2 - Bear Tavern Road, south of Sam Weinroth Road - Weekday(11/14/2018)



Urban Engineers
ATR Location 3
Sam Weinroth Road east of Bear Tavern Road

	14-Nov-18	Eastbound		Westbound		Combined	
	Wed	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
12:00		0	27	2	13	2	40
12:15		0	38	0	28	0	66
12:30		0	49	1	15	1	64
12:45		1	41	2	69	3	110
01:00		3	35	3	39	6	74
01:15		0	26	0	32	0	58
01:30		2	36	2	28	4	64
01:45		2	38	2	41	4	79
02:00		1	27	1	41	2	68
02:15		0	16	1	24	1	40
02:30		1	12	0	14	1	26
02:45		1	21	0	13	1	34
03:00		1	13	0	16	1	29
03:15		5	15	1	15	6	30
03:30		5	30	1	12	6	42
03:45		7	27	0	22	7	49
04:00		3	29	4	20	7	49
04:15		14	45	3	29	17	74
04:30		37	39	15	36	52	75
04:45		46	46	12	31	58	77
05:00		40	43	33	54	73	97
05:15		32	39	21	70	53	109
05:30		20	28	11	66	31	94
05:45		8	16	7	50	15	66
06:00		5	6	3	13	8	19
06:15		13	7	6	28	19	35
06:30		4	11	3	11	7	22
06:45		7	5	1	11	8	16
07:00		14	6	5	5	19	11
07:15		24	9	4	7	28	16
07:30		21	3	6	7	27	10
07:45		18	5	10	1	28	6
08:00		22	10	22	0	44	10
08:15		49	3	21	3	70	6
08:30		51	4	50	3	101	7
08:45		53	1	34	6	87	7
09:00		50	6	19	4	69	10
09:15		42	4	23	10	65	14
09:30		33	13	19	7	52	20
09:45		41	31	50	3	91	34
10:00		20	35	22	2	42	37
10:15		14	36	11	32	25	68
10:30		10	19	8	66	18	85
10:45		15	10	8	37	23	47
11:00		14	7	15	24	29	31
11:15		17	3	14	7	31	10
11:30		18	2	12	1	30	3
11:45		16	1	12	5	28	6
Total		800	973	500	1071	1300	2044
Day Total		1773		1571		3344	
% Total		23.9%	29.1%	15.0%	32.0%		
Peak		08:15	04:15	08:00	05:00	08:15	04:45
Vol.		203	173	127	240	327	377
P.H.F.		0.958	0.883	0.635	0.857	0.809	0.865

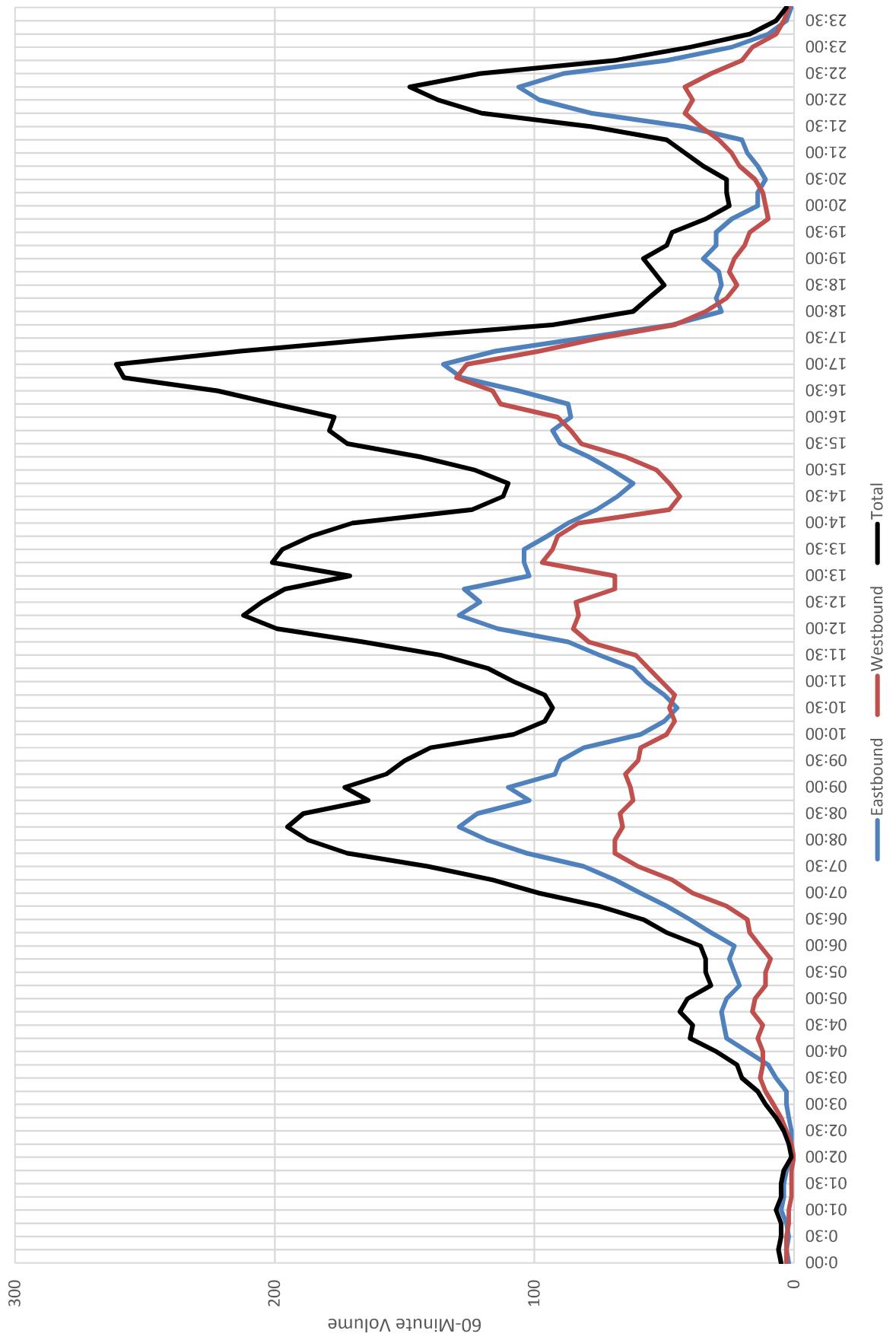
ATR Data - ATR 3 - Sam Weinroth Road east of Bear Tavern Road - Weekday(11/14/2018)



Urban Engineers
ATR Location 4
Sam Weinroth Road, between Control Tower Grumman Avenue

	14-Nov-18	Eastbound		Westbound		Combined		
		Wed	A.M.	P.M.	A.M.	P.M.	A.M.	
12:00			0	11	1	15	1	26
12:15			2	27	0	19	2	46
12:30			0	26	1	30	1	56
12:45			0	50	1	21	1	71
01:00			1	26	1	13	2	39
01:15			1	19	0	20	1	39
01:30			1	32	0	15	1	47
01:45			2	25	1	21	3	46
02:00			0	28	0	41	0	69
02:15			1	19	0	16	1	35
02:30			0	23	0	13	0	36
02:45			0	17	0	13	0	30
03:00			0	17	1	6	1	23
03:15			1	11	2	12	3	23
03:30			1	17	2	17	3	34
03:45			1	25	3	18	4	43
04:00			0	26	4	18	4	44
04:15			5	22	4	29	9	51
04:30			4	20	1	21	5	41
04:45			9	18	3	23	12	41
05:00			8	27	6	40	14	67
05:15			6	41	2	32	8	73
05:30			5	42	5	35	10	77
05:45			7	25	2	19	9	44
06:00			3	7	2	12	5	19
06:15			8	7	2	9	10	16
06:30			7	8	3	6	10	14
06:45			5	6	6	7	11	13
07:00			12	9	6	4	18	13
07:15			16	5	3	5	19	10
07:30			16	9	11	9	27	18
07:45			15	12	19	5	34	17
08:00			22	4	14	0	36	4
08:15			28	5	16	3	44	8
08:30			38	3	20	2	58	5
08:45			30	2	19	6	49	8
09:00			33	4	11	1	44	5
09:15			21	2	17	6	38	8
09:30			18	6	15	8	33	14
09:45			38	6	20	9	58	15
10:00			15	6	13	6	28	12
10:15			19	24	12	13	31	37
10:30			9	42	14	14	23	56
10:45			16	26	10	6	26	32
11:00			6	14	10	9	16	23
11:15			14	7	14	3	28	10
11:30			14	2	12	2	26	4
11:45			23	1	15	2	38	3
Total		481	811	324	654	805	1465	
Day Total		1292		978		2270		
% Total		21.2%	35.7%	14.3%	28.8%			
Peak		08:15	05:00	07:45	04:45	08:15	05:00	
Vol.		129	135	69	130	195	261	
P.H.F.		0.849	0.675	0.863	0.813	0.841	0.847	

ATR Data - ATR 4 - Sam Weinroth Road, between Control Tower & Grumman Avenue
Weekday(11/14/2018)



Appendix X3 – SYNCHRO Analysis Worksheet

TTN_Existing AM_v1

Existing

2: Bear Tavern Rd./Bear Tavern Rd, & 295 SB Ramp

AM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	354	0	209	0	0	0	0	422	0	305	644	0
Future Volume (vph)	354	0	209	0	0	0	0	422	0	305	644	0
Satd. Flow (prot)	0	2025	1830	0	0	0	0	1759	0	1662	1894	0
Flt Permitted												0.281
Satd. Flow (perm)	0	2025	1830	0	0	0	0	1759	0	492	1894	0
Satd. Flow (RTOR)												167
Lane Group Flow (vph)	0	427	252	0	0	0	0	555	0	347	732	0
Turn Type	Split	NA	Free					NA		pm+pt	NA	
Protected Phases	8	8						6		5	2	
Permitted Phases			Free								2	
Total Split (s)	26.0	26.0						45.0		18.0	63.0	
Total Lost Time (s)		5.0						6.0		3.0	6.0	
Act Effct Green (s)	20.3	89.0						42.8		60.7	57.7	
Actuated g/C Ratio	0.23	1.00						0.48		0.68	0.65	
v/c Ratio	0.92	0.14						0.66		0.71	0.60	
Control Delay	61.5	0.2						23.2		14.5	11.7	
Queue Delay	0.0	0.0						0.0		0.0	0.0	
Total Delay	61.5	0.2						23.2		14.5	11.7	
LOS	E	A						C		B	B	
Approach Delay	38.8							23.2			12.6	
Approach LOS	D							C			B	
Queue Length 50th (ft)	233	0						231		70	216	
Queue Length 95th (ft)	#349	0						285		107	305	
Internal Link Dist (ft)	715		3					143			335	
Turn Bay Length (ft)		150									163	
Base Capacity (vph)	477	1830						845		532	1227	
Starvation Cap Reductn	0	0						0		0	0	
Spillback Cap Reductn	0	0						0		0	0	
Storage Cap Reductn	0	0						0		0	0	
Reduced v/c Ratio	0.90	0.14						0.66		0.65	0.60	

Intersection Summary

Cycle Length: 89

Actuated Cycle Length: 89

Offset: 0 (0%), Referenced to phase 6:NBT and 2:SBTL, Start of Yellow

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.92

Intersection Signal Delay: 22.8

Intersection LOS: C

Intersection Capacity Utilization 71.2%

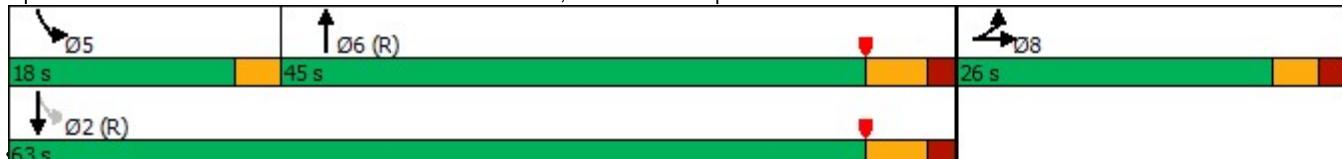
ICU Level of Service C

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 2: Bear Tavern Rd./Bear Tavern Rd, & 295 SB Ramp



Lanes, Volumes, Timings

Page 1



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙ ↗ ↘ ↗	↗ ↗ ↘ ↗	↖ ↗ ↘ ↗	↖ ↗ ↘ ↗	↖ ↗ ↘ ↗	↖ ↗ ↘ ↗
Traffic Volume (vph)	46	73	548	96	87	770
Future Volume (vph)	46	73	548	96	87	770
Satd. Flow (prot)	1745	1794	1694	0	1745	1733
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1745	1794	1694	0	1745	1733
Lane Group Flow (vph)	61	97	724	0	102	906
Sign Control	Stop		Free			Free

Intersection Summary

Control Type: Unsignalized

Intersection Capacity Utilization 52.8%

ICU Level of Service A

Analysis Period (min) 15

TTN_Existing AM_v1
3: Bear Tavern Rd. & Sam Weinroth Rd.

Existing
AM Peak

Intersection							
Int Delay, s/veh	5.5	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Vol, veh/h	46	73	548	96	87	770	
Future Vol, veh/h	46	73	548	96	87	770	
Conflicting Peds, #/hr	0	0	0	0	0	0	
Sign Control	Stop	Stop	Free	Free	Free	Free	
RT Channelized	-	Yield	-	None	-	None	
Storage Length	0	60	-	-	150	-	
Veh in Median Storage, #	0	-	0	-	-	0	
Grade, %	0	-	0	-	-	0	
Peak Hour Factor	75	75	89	89	85	85	
Heavy Vehicles, %	0	2	7	2	0	6	
Mvmt Flow	61	97	616	108	102	906	
Major/Minor	Minor1	Major1		Major2			
Conflicting Flow All	1780	670	0	0	724	0	
Stage 1	670	-	-	-	-	-	
Stage 2	1110	-	-	-	-	-	
Critical Hdwy	6.4	6.22	-	-	4.1	-	
Critical Hdwy Stg 1	5.4	-	-	-	-	-	
Critical Hdwy Stg 2	5.4	-	-	-	-	-	
Follow-up Hdwy	3.5	3.318	-	-	2.2	-	
Pot Cap-1 Maneuver	91	457	-	-	888	-	
Stage 1	512	-	-	-	-	-	
Stage 2	318	-	-	-	-	-	
Platoon blocked, %	-	-	-	-	-	-	
Mov Cap-1 Maneuver	81	457	-	-	888	-	
Mov Cap-2 Maneuver	81	-	-	-	-	-	
Stage 1	512	-	-	-	-	-	
Stage 2	281	-	-	-	-	-	
Approach	WB	NB		SB			
HCM Control Delay, s	59.3	0		1			
HCM LOS	F						
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT	
Capacity (veh/h)	-	-	81	457	888	-	
HCM Lane V/C Ratio	-	-	0.757	0.213	0.115	-	
HCM Control Delay (s)	-	-	129.5	15	9.6	-	
HCM Lane LOS	-	-	F	C	A	-	
HCM 95th %tile Q(veh)	-	-	3.7	0.8	0.4	-	

TTN_Existing AM_v1

Existing

4: Grand Ave./Bear Tavern Rd. & Upper Ferry Rd.

AM Peak

	↙	→	↘	↖	←	↗	↑	↗	↘	↓	↖	
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↗	↖ ↗			↖ ↗	↖ ↗	↖ ↗	↖ ↗		↖ ↗	↖ ↗	
Traffic Volume (vph)	95	103	40	28	105	228	31	313	61	284	440	62
Future Volume (vph)	95	103	40	28	105	228	31	313	61	284	440	62
Satd. Flow (prot)	1601	1817	0	0	1605	1358	0	1974	0	1687	1886	0
Flt Permitted	0.630					0.909			0.996		0.950	
Satd. Flow (perm)	1058	1817	0	0	1474	1325	0	1974	0	1687	1886	0
Satd. Flow (RTOR)			22						11			
Lane Group Flow (vph)	107	161	0	0	151	259	0	460	0	323	570	0
Turn Type	Perm	NA		Perm	NA	Perm	Split	NA		Split	NA	
Protected Phases		8				4		6	6		2	2
Permitted Phases	8				4		4					
Total Split (s)	26.0	26.0		26.0	26.0	26.0	30.0	30.0		28.0	28.0	
Total Lost Time (s)	5.0	5.0			5.0	5.0		5.0		5.0	5.0	
Act Effct Green (s)	19.4	19.4			19.4	19.4		22.7		26.9	26.9	
Actuated g/C Ratio	0.23	0.23			0.23	0.23		0.27		0.32	0.32	
v/c Ratio	0.44	0.37			0.44	0.85		0.85		0.60	0.94	
Control Delay	33.3	25.4			31.7	56.2		44.2		31.3	57.1	
Queue Delay	0.0	0.0			0.0	0.0		0.0		0.0	0.0	
Total Delay	33.3	25.4			31.7	56.2		44.2		31.3	57.1	
LOS	C	C			C	E		D		C	E	
Approach Delay	28.6				47.2			44.2			47.8	
Approach LOS	C				D			D			D	
Queue Length 50th (ft)	47	60			67	128		217		151	-340	
Queue Length 95th (ft)	94	112			119	#238		#328		238	#522	
Internal Link Dist (ft)	683				502			646			1370	
Turn Bay Length (ft)					22							
Base Capacity (vph)	264	470			368	331		595		540	604	
Starvation Cap Reductn	0	0			0	0		0		0	0	
Spillback Cap Reductn	0	0			0	0		0		0	0	
Storage Cap Reductn	0	0			0	0		0		0	0	
Reduced v/c Ratio	0.41	0.34			0.41	0.78		0.77		0.60	0.94	

Intersection Summary

Cycle Length: 84

Actuated Cycle Length: 84

Offset: 0 (0%), Referenced to phase 2:SBTL, Start of Yellow

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.94

Intersection Signal Delay: 44.3

Intersection LOS: D

Intersection Capacity Utilization 85.1%

ICU Level of Service E

Analysis Period (min) 15

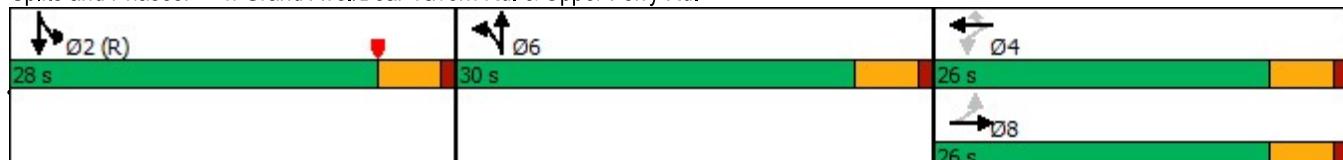
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 4: Grand Ave./Bear Tavern Rd. & Upper Ferry Rd.



TTN_Existing AM_v1
5: Scotch Rd. & Sam Weinroth Rd.

Existing
AM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑	↑		↑	↑	↑	↑	↑		↑	↑	
Traffic Volume (vph)	75	342	25	56	35	130	0	348	0	0	427	0
Future Volume (vph)	75	342	25	56	35	130	0	348	0	0	427	0
Satd. Flow (prot)	1671	1859	0	1419	1845	1545	0	3505	0	0	3505	0
Flt Permitted	0.728				0.269							
Satd. Flow (perm)	1281	1859	0	402	1845	1545	0	3505	0	0	3505	0
Satd. Flow (RTOR)			5			167						
Lane Group Flow (vph)	82	403	0	72	45	167	0	405	0	0	445	0
Turn Type	Perm	NA		Perm	NA	Perm		NA			NA	
Protected Phases		4				8			6		2	
Permitted Phases	4				8			8				
Total Split (s)	46.0	46.0		46.0	46.0	46.0		42.0			42.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0		7.0			7.0	
Act Effct Green (s)	25.0	25.0		25.0	25.0	25.0		50.0			50.0	
Actuated g/C Ratio	0.28	0.28		0.28	0.28	0.28		0.57			0.57	
v/c Ratio	0.23	0.76		0.64	0.09	0.30		0.20			0.22	
Control Delay	23.5	37.4		51.0	20.8	4.8		10.7			10.8	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0			0.0	
Total Delay	23.5	37.4		51.0	20.8	4.8		10.7			10.8	
LOS	C	D		D	C	A		B			B	
Approach Delay		35.0			19.0			10.7			10.8	
Approach LOS		D			B			B			B	
Queue Length 50th (ft)	35	201		35	18	0		53			59	
Queue Length 95th (ft)	61	263		62	32	24		92			107	
Internal Link Dist (ft)		230			119			322			532	
Turn Bay Length (ft)	100											
Base Capacity (vph)	582	847		182	838	793		1993			1993	
Starvation Cap Reductn	0	0		0	0	0		0			0	
Spillback Cap Reductn	0	0		0	0	0		0			0	
Storage Cap Reductn	0	0		0	0	0		0			0	
Reduced v/c Ratio	0.14	0.48		0.40	0.05	0.21		0.20			0.22	

Intersection Summary

Cycle Length: 88

Actuated Cycle Length: 88

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

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.76

Intersection Signal Delay: 19.5

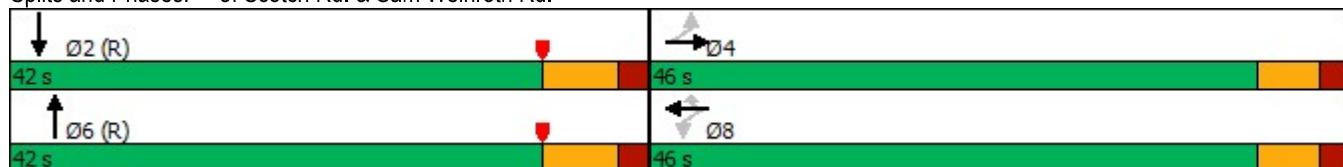
Intersection LOS: B

Intersection Capacity Utilization 53.7%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 5: Scotch Rd. & Sam Weinroth Rd.

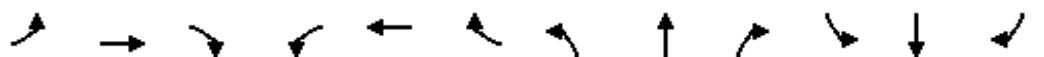


TTN_Existing AM_v1

6: Lockhead Ave./Scotch Rd. Ramp & Sam Weinroth Rd.

Existing

AM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑			↑			↑		↑	↑	
Traffic Volume (vph)	0	112	2	2	34	0	2	0	3	327	12	69
Future Volume (vph)	0	112	2	2	34	0	2	0	3	327	12	69
Satd. Flow (prot)	0	1824	0	0	1912	0	0	1182	0	1865	1553	0
Flt Permitted					0.998				0.979		0.950	
Satd. Flow (perm)	0	1824	0	0	1912	0	0	1182	0	1865	1553	0
Lane Group Flow (vph)	0	140	0	0	40	0	0	7	0	367	91	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Control Type: Unsignalized

Intersection Capacity Utilization 37.5%

ICU Level of Service A

Analysis Period (min) 15

Intersection

Int Delay, s/veh 9.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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Lane Configurations

Traffic Vol, veh/h	0	112	2	2	34	0	2	0	3	327	12	69
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Future Vol, veh/h	0	112	2	2	34	0	2	0	3	327	12	69
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Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
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Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
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RT Channelized	-	-	None									
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Storage Length	-	-	-	-	-	-	-	-	-	0	-	172
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Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
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Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
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Peak Hour Factor	81	81	81	90	90	90	75	75	75	89	89	89
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Heavy Vehicles, %	0	4	0	50	0	0	50	0	67	0	17	9
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Mvmt Flow	0	138	2	2	38	0	3	0	4	367	13	78
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Major/Minor	Major1	Major2		Minor1		Minor2			
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Conflicting Flow All	-	0	0	140	0	0	227	181	139	183	182	38
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Stage 1	-	-	-	-	-	-	139	139	-	42	42	-
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Stage 2	-	-	-	-	-	-	88	42	-	141	140	-
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Critical Hdwy	-	-	-	4.6	-	-	7.6	6.5	6.87	7.1	6.67	6.29
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Critical Hdwy Stg 1	-	-	-	-	-	-	6.6	5.5	-	6.1	5.67	-
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Critical Hdwy Stg 2	-	-	-	-	-	-	6.6	5.5	-	6.1	5.67	-
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Follow-up Hdwy	-	-	-	2.65	-	-	3.95	4	3.903	3.5	4.153	3.381
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Pot Cap-1 Maneuver	0	-	-	1196	-	0	638	717	762	783	686	1014
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Stage 1	0	-	-	-	-	0	762	785	-	978	831	-
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Stage 2	0	-	-	-	-	0	814	864	-	867	753	-
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Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
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Mov Cap-1 Maneuver	-	-	-	1196	-	-	579	716	762	778	685	1014
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Mov Cap-2 Maneuver	-	-	-	-	-	-	579	716	-	778	685	-
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Stage 1	-	-	-	-	-	-	762	785	-	978	829	-
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Stage 2	-	-	-	-	-	-	738	862	-	862	753	-
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Approach	EB	WB		NB		SB			
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HCM Control Delay, s	0	0.4		10.4		12.8			
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HCM LOS				B		B			
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Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	SBLn1	SBLn2
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Capacity (veh/h)	676	-	-	1196	-	778	947
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HCM Lane V/C Ratio	0.01	-	-	0.002	-	0.472	0.096
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HCM Control Delay (s)	10.4	-	-	8	0	13.7	9.2
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HCM Lane LOS	B	-	-	A	A	B	A
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HCM 95th %tile Q(veh)	0	-	-	0	-	2.6	0.3
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TTN_Existing AM_v1
7: Scotch Rd. Ramp & Sam Weinroth Rd.

Existing
AM Peak



Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑			↑↑	↑↑	
Traffic Volume (vph)	342	0	0	196	25	130
Future Volume (vph)	342	0	0	196	25	130
Satd. Flow (prot)	1881	0	0	3610	1895	0
Flt Permitted					0.992	
Satd. Flow (perm)	1881	0	0	3610	1895	0
Lane Group Flow (vph)	376	0	0	251	197	0
Sign Control	Free			Free	Stop	

Intersection Summary

Control Type: Unsignalized

Intersection Capacity Utilization 34.1%

ICU Level of Service A

Analysis Period (min) 15

TTN_Existing AM_v1
7: Scotch Rd. Ramp & Sam Weinroth Rd.

Existing
AM Peak

Intersection							
Movement	EBT	EBR	WBL	WBT	NEL	NER	
Lane Configurations	↑			↑↑	Y		
Traffic Vol, veh/h	342	0	0	196	25	130	
Future Vol, veh/h	342	0	0	196	25	130	
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	91	91	78	78	79	79	
Heavy Vehicles, %	1	0	0	0	0	0	
Mvmt Flow	376	0	0	251	32	165	
Major/Minor							
Major1	Major2	Minor1					
Conflicting Flow All	0	-	-	-	502	376	
Stage 1	-	-	-	-	376	-	
Stage 2	-	-	-	-	126	-	
Critical Hdwy	-	-	-	-	6.6	6.2	
Critical Hdwy Stg 1	-	-	-	-	5.4	-	
Critical Hdwy Stg 2	-	-	-	-	5.8	-	
Follow-up Hdwy	-	-	-	-	3.5	3.3	
Pot Cap-1 Maneuver	-	0	0	-	518	675	
Stage 1	-	0	0	-	699	-	
Stage 2	-	0	0	-	892	-	
Platoon blocked, %	-						
Mov Cap-1 Maneuver	-	-	-	-	518	675	
Mov Cap-2 Maneuver	-	-	-	-	518	-	
Stage 1	-	-	-	-	699	-	
Stage 2	-	-	-	-	892	-	
Approach							
	EB	WB	NE				
HCM Control Delay, s	0	0	13				
HCM LOS			B				
Minor Lane/Major Mvmt							
	NELn1	EBT	WBT				
Capacity (veh/h)	644	-	-				
HCM Lane V/C Ratio	0.305	-	-				
HCM Control Delay (s)	13	-	-				
HCM Lane LOS	B	-	-				
HCM 95th %tile Q(veh)	1.3	-	-				



Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	305	0	0	0	0	256
Future Volume (vph)	305	0	0	0	0	256
Satd. Flow (prot)	2091	0	0	0	0	1725
Flt Permitted						
Satd. Flow (perm)	2091	0	0	0	0	1725
Lane Group Flow (vph)	347	0	0	0	0	288
Sign Control	Free		Free	Free		

Intersection Summary

Control Type: Unsignalized

Intersection Capacity Utilization 38.6%

ICU Level of Service A

Analysis Period (min) 15

TTN_Existing AM_v1
29: Bear Tavern Rd. & 295 SB Ramp

Existing
AM Peak



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			↑	↑		↑
Traffic Volume (vph)	0	0	422	256	0	853
Future Volume (vph)	0	0	422	256	0	853
Satd. Flow (prot)	0	0	1759	1495	0	1776
Flt Permitted						
Satd. Flow (perm)	0	0	1759	1495	0	1776
Lane Group Flow (vph)	0	0	555	337	0	969
Sign Control	Free		Free			Free
Intersection Summary						
Control Type: Unsignalized						
Intersection Capacity Utilization 48.2%	ICU Level of Service A					
Analysis Period (min) 15						

TTN_Existing AM_v1
37: Scotch Rd. Ramp & Scotch Rd.

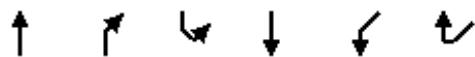
Existing
AM Peak



Lane Group	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations		↑↑	↑↑↑			
Traffic Volume (vph)	0	553	427	408	0	0
Future Volume (vph)	0	553	427	408	0	0
Satd. Flow (prot)	0	3505	4736	0	0	0
Flt Permitted						
Satd. Flow (perm)	0	3505	4736	0	0	0
Lane Group Flow (vph)	0	643	870	0	0	0
Sign Control		Free	Free		Free	
Intersection Summary						
Control Type: Unsignalized						
Intersection Capacity Utilization 20.7%					ICU Level of Service A	
Analysis Period (min) 15						

TTN_Existing AM_v1
39: Scotch Rd. & Scotch Rd. Ramp

Existing
AM Peak



Lane Group	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations	↑↑			↑↑		
Traffic Volume (vph)	348	155	0	508	0	0
Future Volume (vph)	348	155	0	508	0	0
Satd. Flow (prot)	3374	0	0	3505	0	0
Flt Permitted						
Satd. Flow (perm)	3374	0	0	3505	0	0
Lane Group Flow (vph)	585	0	0	529	0	0
Sign Control	Free			Free	Free	
Intersection Summary						
Control Type: Unsignalized						
Intersection Capacity Utilization 17.9%				ICU Level of Service A		
Analysis Period (min) 15						

	↙	→	↘	↖	←	↗	↑	↗	↘	↓	↖	
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↑					↑		↑	↑	
Traffic Volume (vph)	195	0	163	0	0	0	0	555	0	338	493	0
Future Volume (vph)	195	0	163	0	0	0	0	555	0	338	493	0
Satd. Flow (prot)	0	2006	1812	0	0	0	0	1881	0	1694	1987	0
Flt Permitted											0.297	
Satd. Flow (perm)	0	2006	1812	0	0	0	0	1881	0	530	1987	0
Satd. Flow (RTOR)			169									
Lane Group Flow (vph)	0	219	183	0	0	0	0	597	0	384	560	0
Turn Type	Split	NA	Free					NA		pm+pt	NA	
Protected Phases	8	8						6		5	2	
Permitted Phases			Free							2		
Total Split (s)	25.0	25.0						46.0		18.0	64.0	
Total Lost Time (s)		5.0						6.0		3.0	6.0	
Act Effct Green (s)	14.0	89.0						49.1		67.0	64.0	
Actuated g/C Ratio	0.16	1.00						0.55		0.75	0.72	
v/c Ratio	0.70	0.10						0.58		0.69	0.39	
Control Delay	46.7	0.1						25.0		11.3	6.4	
Queue Delay	0.0	0.0						0.0		0.0	0.0	
Total Delay	46.7	0.1						25.0		11.3	6.4	
LOS	D	A						C		B	A	
Approach Delay	25.5							25.0			8.4	
Approach LOS	C							C			A	
Queue Length 50th (ft)	118	0						285		55	103	
Queue Length 95th (ft)	177	0						m372		110	186	
Internal Link Dist (ft)	715		3					143			335	
Turn Bay Length (ft)		100								163		
Base Capacity (vph)	450	1812						1037		595	1428	
Starvation Cap Reductn	0	0						0		0	0	
Spillback Cap Reductn	0	0						0		0	0	
Storage Cap Reductn	0	0						0		0	0	
Reduced v/c Ratio	0.49	0.10						0.58		0.65	0.39	

Intersection Summary

Cycle Length: 89

Actuated Cycle Length: 89

Offset: 0 (0%), Referenced to phase 6:NBT and 2:SBTL, Start of Yellow

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.70

Intersection Signal Delay: 17.1

Intersection LOS: B

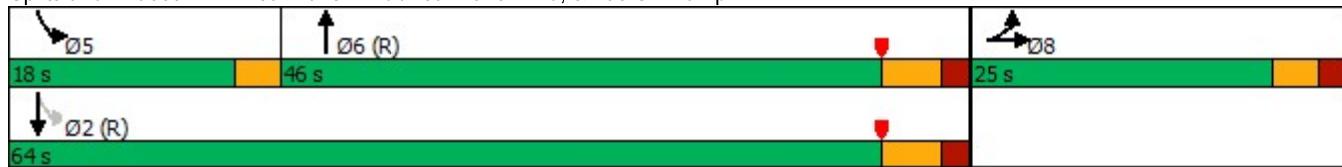
Intersection Capacity Utilization 71.2%

ICU Level of Service C

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Bear Tavern Rd./Bear Tavern Rd, & 295 SB Ramp



20190711_TTN_Existing PM_v2
3: Bear Tavern Rd. & Sam Weinroth Rd.

Existing
PM Peak



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↑	↑	↑		↑	↑
Traffic Volume (vph)	79	110	702	68	101	514
Future Volume (vph)	79	110	702	68	101	514
Satd. Flow (prot)	1745	1812	1766	0	1745	1783
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1745	1812	1766	0	1745	1783
Lane Group Flow (vph)	105	147	828	0	115	584
Sign Control	Stop		Free			Free

Intersection Summary

Control Type: Unsignalized

Intersection Capacity Utilization 61.0% ICU Level of Service B

Analysis Period (min) 15

20190711_TTN_Existing PM_v2
3: Bear Tavern Rd. & Sam Weinroth Rd.

Existing
PM Peak

Intersection						
Int Delay, s/veh	13.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Vol, veh/h	79	110	702	68	101	514
Future Vol, veh/h	79	110	702	68	101	514
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	None
Storage Length	0	60	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	75	75	93	93	88	88
Heavy Vehicles, %	0	1	3	0	0	3
Mvmt Flow	105	147	755	73	115	584
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1606	792	0	0	828	0
Stage 1	792	-	-	-	-	-
Stage 2	814	-	-	-	-	-
Critical Hdwy	6.4	6.21	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.309	-	-	2.2	-
Pot Cap-1 Maneuver	117	391	-	-	812	-
Stage 1	450	-	-	-	-	-
Stage 2	439	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	~ 100	391	-	-	812	-
Mov Cap-2 Maneuver	~ 100	-	-	-	-	-
Stage 1	450	-	-	-	-	-
Stage 2	377	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	88.4	0	1.7			
HCM LOS	F					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	100	391	812	-
HCM Lane V/C Ratio	-	-	1.053	0.375	0.141	-
HCM Control Delay (s)	-	-	184.2	19.6	10.2	-
HCM Lane LOS	-	-	F	C	B	-
HCM 95th %tile Q(veh)	-	-	6.6	1.7	0.5	-
Notes						
~: Volume exceeds capacity	\$: Delay exceeds 300s	+:	Computation Not Defined	*	All major volume in platoon	

	↙	→	↘	↖	←	↗	↑	↗	↘	↓	↖	
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↗	↖ ↗			↖ ↗	↖ ↗	↖ ↗	↖ ↗		↖ ↗	↖ ↗	
Traffic Volume (vph)	67	135	36	36	222	320	31	392	36	238	225	84
Future Volume (vph)	67	135	36	36	222	320	31	392	36	238	225	84
Satd. Flow (prot)	1694	1821	0	0	1717	1478	0	2062	0	1752	1919	0
Flt Permitted	0.439				0.932			0.997		0.950		
Satd. Flow (perm)	782	1821	0	0	1611	1446	0	2062	0	1752	1919	0
Satd. Flow (RTOR)			16						5			
Lane Group Flow (vph)	80	204	0	0	274	340	0	528	0	256	332	0
Turn Type	Perm	NA		Perm	NA	Perm	Split	NA		Split	NA	
Protected Phases		8				4		6	6		2	2
Permitted Phases	8				4		4					
Total Split (s)	35.0	35.0		35.0	35.0	35.0	31.0	31.0		23.0	23.0	
Total Lost Time (s)	5.0	5.0			5.0	5.0		5.0		5.0	5.0	
Act Effct Green (s)	25.1	25.1			25.1	25.1		25.0		23.9	23.9	
Actuated g/C Ratio	0.28	0.28			0.28	0.28		0.28		0.27	0.27	
v/c Ratio	0.36	0.39			0.60	0.83		0.91		0.55	0.65	
Control Delay	28.9	24.8			32.7	47.3		51.8		40.2	43.0	
Queue Delay	0.0	0.0			0.0	0.0		0.0		0.0	0.0	
Total Delay	28.9	24.8			32.7	47.3		51.8		40.2	43.0	
LOS	C	C			C	D		D		D	D	
Approach Delay		25.9			40.8			51.8			41.8	
Approach LOS		C			D			D			D	
Queue Length 50th (ft)	35	83			130	176		278		146	194	
Queue Length 95th (ft)	66	123			197	265		#431		#248	#338	
Internal Link Dist (ft)		683			502			646			1370	
Turn Bay Length (ft)					22							
Base Capacity (vph)	263	624			543	487		605		469	514	
Starvation Cap Reductn	0	0			0	0		0		0	0	
Spillback Cap Reductn	0	0			0	0		0		0	0	
Storage Cap Reductn	0	0			0	0		0		0	0	
Reduced v/c Ratio	0.30	0.33			0.50	0.70		0.87		0.55	0.65	

Intersection Summary

Cycle Length: 89

Actuated Cycle Length: 89

Offset: 0 (0%), Referenced to phase 2:SBTL, Start of Yellow

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.91

Intersection Signal Delay: 41.9

Intersection LOS: D

Intersection Capacity Utilization 84.3%

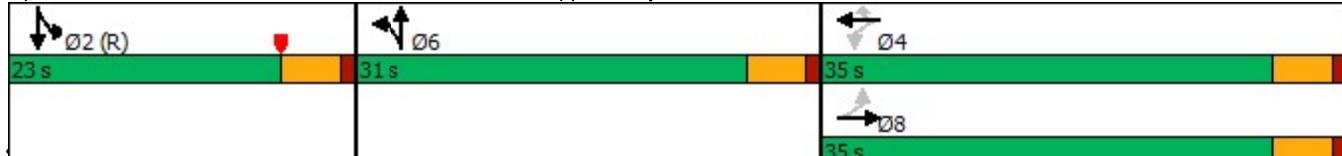
ICU Level of Service E

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 4: Grand Ave./Bear Tavern Rd. & Upper Ferry Rd.



Lanes, Volumes, Timings

Page 4

20190711_TTN_Existing PM_v2
5: Scotch Rd. & Sam Weinroth Rd.

Existing
PM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑	↑		↑	↑	↑	↑	↑↑			↑↑	
Traffic Volume (vph)	107	47	49	121	40	280	0	402	0	0	478	0
Future Volume (vph)	107	47	49	121	40	280	0	402	0	0	478	0
Satd. Flow (prot)	1770	1664	0	1745	1900	1669	0	3574	0	0	3539	0
Flt Permitted	0.722				0.679							
Satd. Flow (perm)	1345	1664	0	1247	1900	1669	0	3574	0	0	3539	0
Satd. Flow (RTOR)			62			334						
Lane Group Flow (vph)	135	121	0	161	53	373	0	467	0	0	514	0
Turn Type	Perm	NA		Perm	NA	Perm		NA			NA	
Protected Phases			4			8			6			2
Permitted Phases		4			8		8					
Total Split (s)	36.0	36.0		36.0	36.0	36.0		52.0			52.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0		7.0			7.0	
Act Effct Green (s)	17.2	17.2		17.2	17.2	17.2		57.8			57.8	
Actuated g/C Ratio	0.20	0.20		0.20	0.20	0.20		0.66			0.66	
v/c Ratio	0.52	0.32		0.66	0.14	0.63		0.20			0.22	
Control Delay	37.2	16.8		44.9	27.4	9.9		7.1			7.2	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0			0.0	
Total Delay	37.2	16.8		44.9	27.4	9.9		7.1			7.2	
LOS	D	B		D	C	A		A			A	
Approach Delay		27.6			21.1			7.1			7.2	
Approach LOS		C			C			A			A	
Queue Length 50th (ft)	68	28		84	25	18		46			52	
Queue Length 95th (ft)	94	53		106	41	41		85			99	
Internal Link Dist (ft)		230			119			322			532	
Turn Bay Length (ft)	100											
Base Capacity (vph)	458	608		425	647	789		2349			2326	
Starvation Cap Reductn	0	0		0	0	0		0			0	
Spillback Cap Reductn	0	0		0	0	0		0			0	
Storage Cap Reductn	0	0		0	0	0		0			0	
Reduced v/c Ratio	0.29	0.20		0.38	0.08	0.47		0.20			0.22	

Intersection Summary

Cycle Length: 88

Actuated Cycle Length: 88

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

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.66

Intersection Signal Delay: 14.5

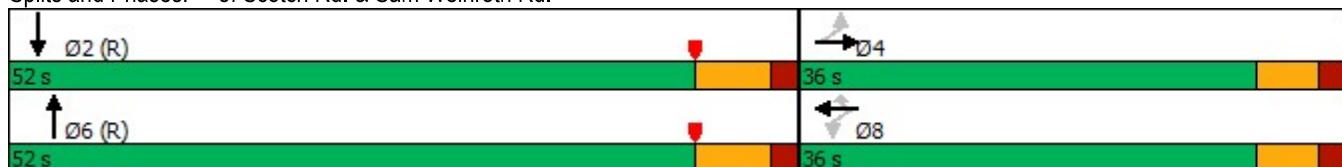
Intersection LOS: B

Intersection Capacity Utilization 51.6%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 5: Scotch Rd. & Sam Weinroth Rd.





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑			↑			↑		↑	↑	
Traffic Volume (vph)	0	136	2	1	46	0	2	0	12	55	1	69
Future Volume (vph)	0	136	2	1	46	0	2	0	12	55	1	69
Satd. Flow (prot)	0	1878	0	0	1961	0	0	1721	0	1711	1625	0
Flt Permitted					0.999				0.992		0.950	
Satd. Flow (perm)	0	1878	0	0	1961	0	0	1721	0	1711	1625	0
Lane Group Flow (vph)	0	184	0	0	56	0	0	19	0	60	76	0
Sign Control		Free			Free			Stop		Stop		

Intersection Summary

Control Type: Unsignalized

Intersection Capacity Utilization 23.7%

ICU Level of Service A

Analysis Period (min) 15

Intersection

Int Delay, s/veh 3.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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Lane Configurations

Traffic Vol, veh/h	0	136	2	1	46	0	2	0	12	55	1	69
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Future Vol, veh/h	0	136	2	1	46	0	2	0	12	55	1	69
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Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
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Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
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RT Channelized	-	-	None									
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Storage Length	-	-	-	-	-	-	-	-	-	0	-	172
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Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
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Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
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Peak Hour Factor	75	75	75	84	84	84	75	75	75	92	92	92
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Heavy Vehicles, %	0	1	0	0	0	0	0	0	8	9	0	3
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Mvmt Flow	0	181	3	1	55	0	3	0	16	60	1	75
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Major/Minor	Major1	Major2		Minor1		Minor2			
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Conflicting Flow All	-	0	0	184	0	0	278	240	183	248	241	55
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Stage 1	-	-	-	-	-	-	183	183	-	57	57	-
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Stage 2	-	-	-	-	-	-	95	57	-	191	184	-
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Critical Hdwy	-	-	-	4.1	-	-	7.1	6.5	6.28	7.19	6.5	6.23
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Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.19	5.5	-
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Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.19	5.5	-
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Follow-up Hdwy	-	-	-	2.2	-	-	3.5	4	3.372	3.581	4	3.327
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Pot Cap-1 Maneuver	0	-	-	1403	-	0	678	665	844	691	664	1009
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Stage 1	0	-	-	-	-	0	823	752	-	938	851	-
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Stage 2	0	-	-	-	-	0	917	851	-	795	751	-
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Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
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Mov Cap-1 Maneuver	-	-	-	1403	-	-	626	664	844	677	663	1009
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Mov Cap-2 Maneuver	-	-	-	-	-	-	626	664	-	677	663	-
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Stage 1	-	-	-	-	-	-	823	752	-	938	850	-
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Stage 2	-	-	-	-	-	-	847	850	-	780	751	-
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Approach	EB	WB		NB		SB			
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HCM Control Delay, s	0	0.2		9.6		9.7			
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HCM LOS				A		A			
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Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	SBLn1	SBLn2
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Capacity (veh/h)	804	-	-	1403	-	677	1002
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HCM Lane V/C Ratio	0.023	-	-	0.001	-	0.088	0.076
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HCM Control Delay (s)	9.6	-	-	7.6	0	10.8	8.9
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HCM Lane LOS	A	-	-	A	A	B	A
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HCM 95th %tile Q(veh)	0.1	-	-	0	-	0.3	0.2
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Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑			↑↑	↑↑	
Traffic Volume (vph)	47	0	0	412	29	39
Future Volume (vph)	47	0	0	412	29	39
Satd. Flow (prot)	1712	0	0	3610	1946	0
Flt Permitted					0.979	
Satd. Flow (perm)	1712	0	0	3610	1946	0
Lane Group Flow (vph)	59	0	0	549	91	0
Sign Control	Free			Free	Stop	

Intersection Summary

Control Type: Unsignalized

Intersection Capacity Utilization 22.1%

ICU Level of Service A

Analysis Period (min) 15

Intersection						
Int Delay, s/veh	1.3					
Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑			↑↑	Y	
Traffic Vol, veh/h	47	0	0	412	29	39
Future Vol, veh/h	47	0	0	412	29	39
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	79	79	75	75	75	75
Heavy Vehicles, %	11	0	0	0	0	0
Mvmt Flow	59	0	0	549	39	52
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	-	-	-	334	59
Stage 1	-	-	-	-	59	-
Stage 2	-	-	-	-	275	-
Critical Hdwy	-	-	-	-	6.6	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	-	0	0	-	653	1012
Stage 1	-	0	0	-	969	-
Stage 2	-	0	0	-	753	-
Platoon blocked, %	-					
Mov Cap-1 Maneuver	-	-	-	-	653	1012
Mov Cap-2 Maneuver	-	-	-	-	653	-
Stage 1	-	-	-	-	969	-
Stage 2	-	-	-	-	753	-
Approach	EB	WB	NE			
HCM Control Delay, s	0	0	9.9			
HCM LOS			A			
Minor Lane/Major Mvmt	NELn1	EBT	WBT			
Capacity (veh/h)	820	-	-			
HCM Lane V/C Ratio	0.111	-	-			
HCM Control Delay (s)	9.9	-	-			
HCM Lane LOS	A	-	-			
HCM 95th %tile Q(veh)	0.4	-	-			



Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑				↑	
Traffic Volume (vph)	338	0	0	0	0	269
Future Volume (vph)	338	0	0	0	0	269
Satd. Flow (prot)	2091	0	0	0	0	1808
Flt Permitted						
Satd. Flow (perm)	2091	0	0	0	0	1808
Lane Group Flow (vph)	384	0	0	0	0	316
Sign Control	Free		Free	Free		

Intersection Summary

Control Type: Unsignalized

Intersection Capacity Utilization 41.1%

ICU Level of Service A

Analysis Period (min) 15

20190711_TTN_Existing PM_v2
29: Bear Tavern Rd. & 295 SB Ramp

Existing
PM Peak



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			↑	↑		↑
Traffic Volume (vph)	0	0	555	269	0	656
Future Volume (vph)	0	0	555	269	0	656
Satd. Flow (prot)	0	0	1881	1568	0	1863
Flt Permitted						
Satd. Flow (perm)	0	0	1881	1568	0	1863
Lane Group Flow (vph)	0	0	597	289	0	745
Sign Control	Free		Free			Free

Intersection Summary

Control Type: Unsignalized

Intersection Capacity Utilization 37.9%

ICU Level of Service A

Analysis Period (min) 15



Lane Group	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations		↑↑	↑↑↓			
Traffic Volume (vph)	0	789	478	125	0	0
Future Volume (vph)	0	789	478	125	0	0
Satd. Flow (prot)	0	3574	4948	0	0	0
Flt Permitted						
Satd. Flow (perm)	0	3574	4948	0	0	0
Lane Group Flow (vph)	0	917	648	0	0	0
Sign Control		Free	Free		Free	

Intersection Summary

Control Type: Unsignalized

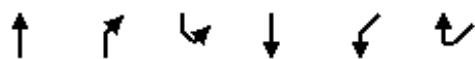
Intersection Capacity Utilization 25.1%

ICU Level of Service A

Analysis Period (min) 15

20190711_TTN_Existing PM_v2
39: Scotch Rd. & Scotch Rd. Ramp

Existing
PM Peak



Lane Group	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations	↑↓			↑↑		
Traffic Volume (vph)	402	68	0	648	0	0
Future Volume (vph)	402	68	0	648	0	0
Satd. Flow (prot)	3501	0	0	3539	0	0
Flt Permitted						
Satd. Flow (perm)	3501	0	0	3539	0	0
Lane Group Flow (vph)	546	0	0	697	0	0
Sign Control	Free			Free	Free	

Intersection Summary

Control Type: Unsignalized

Intersection Capacity Utilization 21.2%

ICU Level of Service A

Analysis Period (min) 15

TTN_Existing SAT_v0

Existing

2: Bear Tavern Rd./Bear Tavern Rd, & 295 SB Ramp

SAT Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	209	0	121	0	0	0	0	349	0	134	349	0
Future Volume (vph)	209	0	121	0	0	0	0	349	0	134	349	0
Satd. Flow (prot)	0	1948	1812	0	0	0	0	1863	0	1728	2007	0
Flt Permitted	0.950										0.405	
Satd. Flow (perm)	0	1948	1812	0	0	0	0	1863	0	736	2007	0
Satd. Flow (RTOR)			135									
Lane Group Flow (vph)	0	261	151	0	0	0	0	465	0	140	364	0
Turn Type	Split	NA	Free					NA		pm+pt	NA	
Protected Phases	8	8						6		5	2	
Permitted Phases			Free								2	
Total Split (s)	25.0	25.0						46.0		18.0	64.0	
Total Lost Time (s)		5.0						6.0		3.0	6.0	
Act Effct Green (s)	15.8	89.0						51.7		65.2	62.2	
Actuated g/C Ratio	0.18	1.00						0.58		0.73	0.70	
v/c Ratio	0.76	0.08						0.43		0.23	0.26	
Control Delay	48.6	0.1						12.9		4.9	6.0	
Queue Delay	0.0	0.0						0.0		0.0	0.0	
Total Delay	48.6	0.1						12.9		4.9	6.0	
LOS	D	A						B		A	A	
Approach Delay	30.8							12.9			5.7	
Approach LOS	C							B			A	
Queue Length 50th (ft)	140	0						134		19	66	
Queue Length 95th (ft)	183	0						184		42	118	
Internal Link Dist (ft)	715		3					143			335	
Turn Bay Length (ft)		100									163	
Base Capacity (vph)	437	1812						1082		706	1402	
Starvation Cap Reductn	0	0						0		0	0	
Spillback Cap Reductn	0	0						0		0	0	
Storage Cap Reductn	0	0						0		0	0	
Reduced v/c Ratio	0.60	0.08						0.43		0.20	0.26	

Intersection Summary

Cycle Length: 89

Actuated Cycle Length: 89

Offset: 0 (0%), Referenced to phase 6:NBT and 2:SBTL, Start of Yellow

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.76

Intersection Signal Delay: 15.6

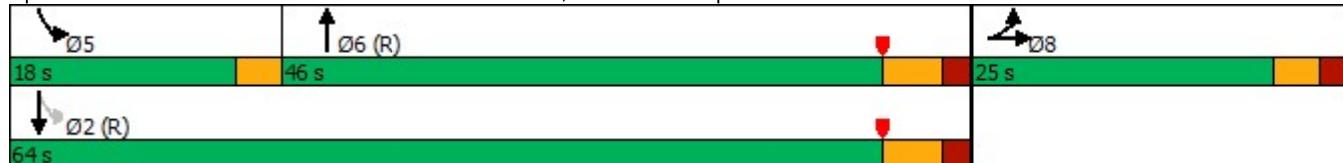
Intersection LOS: B

Intersection Capacity Utilization 49.9%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 2: Bear Tavern Rd./Bear Tavern Rd, & 295 SB Ramp



TTN_Existing SAT_v0
3: Bear Tavern Rd. & Sam Weinroth Rd.

Existing
SAT Peak



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↑ ↗	↗ ↑	↑ ↗	↗	↖ ↗	↑ ↗
Traffic Volume (vph)	27	57	423	36	53	415
Future Volume (vph)	27	57	423	36	53	415
Satd. Flow (prot)	1745	1830	1783	0	1745	1818
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1745	1830	1783	0	1745	1818
Lane Group Flow (vph)	36	76	515	0	56	441
Sign Control	Stop		Free			Free
Intersection Summary						
Control Type:	Unsignalized					
Intersection Capacity Utilization	41.1%					
ICU Level of Service	A					
Analysis Period (min)	15					

TTN_Existing SAT_v0
3: Bear Tavern Rd. & Sam Weinroth Rd.

Existing
SAT Peak

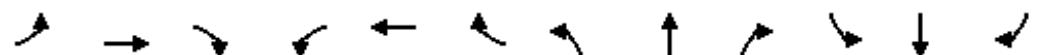
Intersection						
Int Delay, s/veh	2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Vol, veh/h	27	57	423	36	53	415
Future Vol, veh/h	27	57	423	36	53	415
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	None
Storage Length	0	60	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	75	75	89	89	94	94
Heavy Vehicles, %	0	0	2	2	0	1
Mvmt Flow	36	76	475	40	56	441
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1048	495	0	0	515	0
Stage 1	495	-	-	-	-	-
Stage 2	553	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	255	579	-	-	1061	-
Stage 1	617	-	-	-	-	-
Stage 2	580	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	241	579	-	-	1061	-
Mov Cap-2 Maneuver	241	-	-	-	-	-
Stage 1	617	-	-	-	-	-
Stage 2	549	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	15.5	0	1			
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	241	579	1061	-
HCM Lane V/C Ratio	-	-	0.149	0.131	0.053	-
HCM Control Delay (s)	-	-	22.5	12.2	8.6	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.5	0.5	0.2	-

TTN_Existing SAT_v0

Existing

SAT Peak

4: Grand Ave/Bear Tavern Rd. & Upper Ferry Rd.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑	↑			↑	↑	↑	↑		↑	↑	
Traffic Volume (vph)	67	115	34	49	150	239	19	141	51	204	149	70
Future Volume (vph)	67	115	34	49	150	239	19	141	51	204	149	70
Satd. Flow (prot)	1728	1868	0	0	1735	1507	0	2033	0	1787	1910	0
Flt Permitted	0.524					0.879			0.996		0.950	
Satd. Flow (perm)	953	1868	0	0	1543	1507	0	2033	0	1787	1910	0
Satd. Flow (RTOR)			20						18			
Lane Group Flow (vph)	78	174	0	0	206	246	0	248	0	229	246	0
Turn Type	Perm	NA		Perm	NA	Perm	Split	NA		Split	NA	
Protected Phases		8				4		6	6		2	2
Permitted Phases	8				4		4					
Total Split (s)	36.0	36.0		36.0	36.0	36.0	24.0	24.0		24.0	24.0	
Total Lost Time (s)	5.0	5.0			5.0	5.0		5.0		5.0	5.0	
Act Effct Green (s)	19.8	19.8			19.8	19.8	14.5			34.6	34.6	
Actuated g/C Ratio	0.24	0.24			0.24	0.24	0.17			0.41	0.41	
v/c Ratio	0.35	0.38			0.57	0.69	0.68			0.31	0.31	
Control Delay	29.6	25.1			33.7	39.2		39.2		20.8	20.7	
Queue Delay	0.0	0.0			0.0	0.0	0.0			0.0	0.0	
Total Delay	29.6	25.1			33.7	39.2	39.2			20.8	20.7	
LOS	C	C			C	D		D		C	C	
Approach Delay		26.5			36.7			39.2			20.7	
Approach LOS		C			D			D			C	
Queue Length 50th (ft)	35	69			97	120	114		78	84		
Queue Length 95th (ft)	63	104			146	176	167		166	175		
Internal Link Dist (ft)		683			502		646				1370	
Turn Bay Length (ft)					22							
Base Capacity (vph)	351	702			569	556	473		736	787		
Starvation Cap Reductn	0	0			0	0	0		0	0	0	
Spillback Cap Reductn	0	0			0	0	0		0	0	0	
Storage Cap Reductn	0	0			0	0	0		0	0	0	
Reduced v/c Ratio	0.22	0.25			0.36	0.44		0.52		0.31	0.31	

Intersection Summary

Cycle Length: 84

Actuated Cycle Length: 84

Offset: 0 (0%), Referenced to phase 2:SBTL, Start of Yellow

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.69

Intersection Signal Delay: 30.0

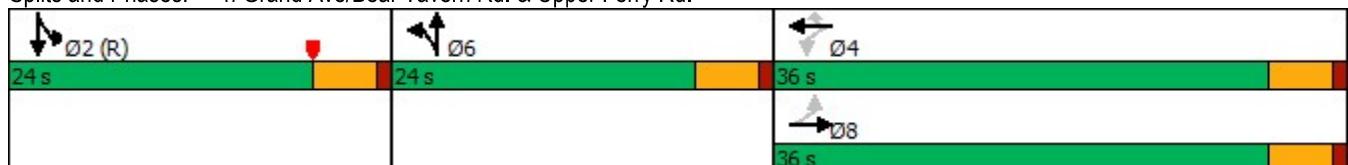
Intersection LOS: C

Intersection Capacity Utilization 63.8%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 4: Grand Ave/Bear Tavern Rd. & Upper Ferry Rd.



TTN_Existing SAT_v0
5: Scotch Rd. & Sam Weinroth Rd.

Existing
SAT Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑	↑		↑	↑	↑	↑	↑			↑	
Traffic Volume (vph)	37	8	28	9	16	15	0	251	0	0	229	0
Future Volume (vph)	37	8	28	9	16	15	0	251	0	0	229	0
Satd. Flow (prot)	1805	1678	0	1745	1900	1669	0	3574	0	0	3539	0
Flt Permitted	0.744				0.728							
Satd. Flow (perm)	1414	1678	0	1337	1900	1669	0	3574	0	0	3539	0
Satd. Flow (RTOR)				35		50						
Lane Group Flow (vph)	47	45	0	12	21	20	0	273	0	0	276	0
Turn Type	Perm	NA		Perm	NA	Perm		NA			NA	
Protected Phases			4			8			6			2
Permitted Phases		4			8		8					
Total Split (s)	36.0	36.0		36.0	36.0	36.0		52.0			52.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0		7.0			7.0	
Act Effct Green (s)	8.8	8.8		8.8	8.8	8.8		70.2			70.2	
Actuated g/C Ratio	0.10	0.10		0.10	0.10	0.10		0.80			0.80	
v/c Ratio	0.34	0.23		0.09	0.11	0.09		0.10			0.10	
Control Delay	42.8	18.7		36.2	36.2	2.9		3.0			3.0	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0			0.0	
Total Delay	42.8	18.7		36.2	36.2	2.9		3.0			3.0	
LOS	D	B		D	D	A		A			A	
Approach Delay		31.0			23.6			3.0			3.0	
Approach LOS		C			C			A			A	
Queue Length 50th (ft)	25	5		6	11	0		16			16	
Queue Length 95th (ft)	49	29		18	26	0		31			28	
Internal Link Dist (ft)		230			119			322			532	
Turn Bay Length (ft)	100											
Base Capacity (vph)	482	595		455	647	601		2852			2824	
Starvation Cap Reductn	0	0		0	0	0		0			0	
Spillback Cap Reductn	0	0		0	0	0		0			0	
Storage Cap Reductn	0	0		0	0	0		0			0	
Reduced v/c Ratio	0.10	0.08		0.03	0.03	0.03		0.10			0.10	

Intersection Summary

Cycle Length: 88

Actuated Cycle Length: 88

Offset: 45 (51%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.34

Intersection Signal Delay: 8.3

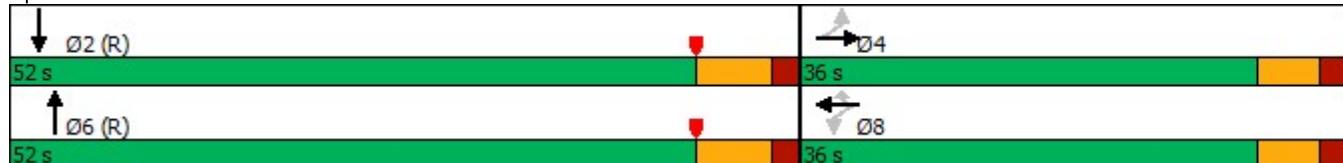
Intersection LOS: A

Intersection Capacity Utilization 40.0%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 5: Scotch Rd. & Sam Weinroth Rd.

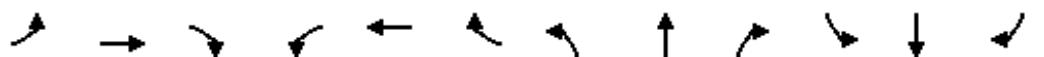


TTN_Existing SAT_v0

6: Lockhead Ave./Scotch Rd. Ramp & Sam Weinroth Rd.

Existing

SAT Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑			↑			↑		↑	↑	
Traffic Volume (vph)	0	58	1	1	20	0	0	0	1	13	2	36
Future Volume (vph)	0	58	1	1	20	0	0	0	1	13	2	36
Satd. Flow (prot)	0	1896	0	0	1959	0	0	1808	0	1865	1596	0
Flt Permitted					0.998					0.950		
Satd. Flow (perm)	0	1896	0	0	1959	0	0	1808	0	1865	1596	0
Lane Group Flow (vph)	0	71	0	0	24	0	0	1	0	17	51	0
Sign Control		Free			Free			Stop		Stop		

Intersection Summary

Control Type: Unsignalized

Intersection Capacity Utilization 17.4%

ICU Level of Service A

Analysis Period (min) 15

TTN_Existing SAT_v0

Existing

6: Lockhead Ave./Scotch Rd. Ramp & Sam Weinroth Rd.

SAT Peak

Intersection

Int Delay, s/veh 3.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
----------	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

Lane Configurations



Traffic Vol, veh/h 0 58 1 1 20 0 0 0 1 13 2 36

Future Vol, veh/h 0 58 1 1 20 0 0 0 1 13 2 36

Conflicting Peds, #/hr 0 0 0 0 0 0 0 0 0 0 0 0

Sign Control Free Free Free Free Free Free Stop Stop Stop Stop Stop Stop

RT Channelized - - None - - None - - None - - None

Storage Length - - - - - - - - - 0 - - 172

Veh in Median Storage, # - 0 - - 0 - - 0 - - 0 - - 0

Grade, % - 0 - - 0 - - 0 - - 0 - - 0

Peak Hour Factor 83 83 83 88 88 88 75 75 75 75 75 75

Heavy Vehicles, % 0 0 0 0 0 0 0 0 0 0 0 6

Mvmt Flow 0 70 1 1 23 0 0 0 1 17 3 48

Major/Minor	Major1	Major2		Minor1		Minor2			
-------------	--------	--------	--	--------	--	--------	--	--	--

Conflicting Flow All - 0 0 71 0 0 122 96 71 96 96 23

Stage 1 - - - - - - 71 71 - 25 25 -

Stage 2 - - - - - - 51 25 - 71 71 -

Critical Hdwy - - - 4.1 - - 7.1 6.5 6.2 7.1 6.5 6.26

Critical Hdwy Stg 1 - - - - - - 6.1 5.5 - 6.1 5.5 -

Critical Hdwy Stg 2 - - - - - - 6.1 5.5 - 6.1 5.5 -

Follow-up Hdwy - - - 2.2 - - 3.5 4 3.3 3.5 4 3.354

Pot Cap-1 Maneuver 0 - - 1542 - 0 858 798 997 891 798 1042

Stage 1 0 - - - - 0 944 840 - 998 878 -

Stage 2 0 - - - - 0 967 878 - 944 840 -

Platoon blocked, % - - -

Mov Cap-1 Maneuver - - - 1542 - - 816 797 997 889 797 1042

Mov Cap-2 Maneuver - - - - - - 816 797 - 889 797 -

Stage 1 - - - - - - 944 840 - 998 877 -

Stage 2 - - - - - - 919 877 - 943 840 -

Approach	EB	WB		NB		SB	
----------	----	----	--	----	--	----	--

HCM Control Delay, s 0 0.3 8.6 8.8

HCM LOS A A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	SBLn1	SBLn2
-----------------------	-------	-----	-----	-----	-----	-------	-------

Capacity (veh/h) 997 - - 1542 - 889 1025

HCM Lane V/C Ratio 0.001 - - 0.001 - 0.019 0.049

HCM Control Delay (s) 8.6 - - 7.3 0 9.1 8.7

HCM Lane LOS A - - A A A A

HCM 95th %tile Q(veh) 0 - - 0 - 0.1 0.2

TTN_Existing SAT_v0
7: Scotch Rd. Ramp & Sam Weinroth Rd.

Existing
SAT Peak



Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑			↑↑	↑	
Traffic Volume (vph)	8	0	0	27	13	14
Future Volume (vph)	8	0	0	27	13	14
Satd. Flow (prot)	1900	0	0	3610	1954	0
Flt Permitted					0.977	
Satd. Flow (perm)	1900	0	0	3610	1954	0
Lane Group Flow (vph)	10	0	0	36	36	0
Sign Control	Free			Free	Stop	

Intersection Summary

Control Type: Unsignalized

Intersection Capacity Utilization 13.3%

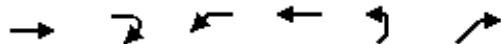
ICU Level of Service A

Analysis Period (min) 15

TTN_Existing SAT_v0
7: Scotch Rd. Ramp & Sam Weinroth Rd.

Existing
SAT Peak

Intersection						
Int Delay, s/veh	3.8					
Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑			↑↑	Y	
Traffic Vol, veh/h	8	0	0	27	13	14
Future Vol, veh/h	8	0	0	27	13	14
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	79	79	75	75	75	75
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	10	0	0	36	17	19
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	-	-	-	28	10
Stage 1	-	-	-	-	10	-
Stage 2	-	-	-	-	18	-
Critical Hdwy	-	-	-	-	6.6	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	-	0	0	-	990	1077
Stage 1	-	0	0	-	1018	-
Stage 2	-	0	0	-	1008	-
Platoon blocked, %	-					
Mov Cap-1 Maneuver	-	-	-	-	990	1077
Mov Cap-2 Maneuver	-	-	-	-	990	-
Stage 1	-	-	-	-	1018	-
Stage 2	-	-	-	-	1008	-
Approach	EB	WB	NE			
HCM Control Delay, s	0	0	8.6			
HCM LOS			A			
Minor Lane/Major Mvmt	NELn1	EBT	WBT			
Capacity (veh/h)	1033	-	-			
HCM Lane V/C Ratio	0.035	-	-			
HCM Control Delay (s)	8.6	-	-			
HCM Lane LOS	A	-	-			
HCM 95th %tile Q(veh)	0.1	-	-			



Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	134	0	0	0	0	146
Future Volume (vph)	134	0	0	0	0	146
Satd. Flow (prot)	2132	0	0	0	0	1808
Flt Permitted						
Satd. Flow (perm)	2132	0	0	0	0	1808
Lane Group Flow (vph)	140	0	0	0	0	151
Sign Control	Free		Free	Free		

Intersection Summary

Control Type: Unsignalized

Intersection Capacity Utilization 22.8%

ICU Level of Service A

Analysis Period (min) 15

TTN_Existing SAT_v0
29: Bear Tavern Rd. & 295 SB Ramp

Existing
SAT Peak



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	349	146	0	470
Future Volume (vph)	0	0	349	146	0	470
Satd. Flow (prot)	0	0	1863	1568	0	1881
Flt Permitted						
Satd. Flow (perm)	0	0	1863	1568	0	1881
Lane Group Flow (vph)	0	0	465	195	0	490
Sign Control	Free		Free			Free
Intersection Summary						
Control Type: Unsignalized						
Intersection Capacity Utilization 28.1%	ICU Level of Service A					
Analysis Period (min) 15						

TTN_Existing SAT_v0
37: Scotch Rd. Ramp & Scotch Rd.

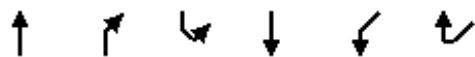
Existing
SAT Peak



Lane Group	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations		↑↑	↑↑↑			
Traffic Volume (vph)	0	303	229	51	0	0
Future Volume (vph)	0	303	229	51	0	0
Satd. Flow (prot)	0	3574	4966	0	0	0
Flt Permitted						
Satd. Flow (perm)	0	3574	4966	0	0	0
Lane Group Flow (vph)	0	329	337	0	0	0
Sign Control		Free	Free		Free	
Intersection Summary						
Control Type: Unsignalized						
Intersection Capacity Utilization 11.7%					ICU Level of Service A	
Analysis Period (min) 15						

TTN_Existing SAT_v0
39: Scotch Rd. & Scotch Rd. Ramp

Existing
SAT Peak

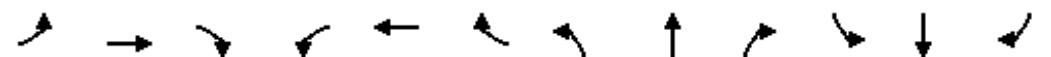


Lane Group	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations	↑	↗	↖	↓	↖	↑
Traffic Volume (vph)	251	27	0	266	0	0
Future Volume (vph)	251	27	0	266	0	0
Satd. Flow (prot)	3528	0	0	3539	0	0
Flt Permitted						
Satd. Flow (perm)	3528	0	0	3539	0	0
Lane Group Flow (vph)	302	0	0	320	0	0
Sign Control	Free			Free	Free	
Intersection Summary						
Control Type: Unsignalized						
Intersection Capacity Utilization 11.1%	ICU Level of Service A					
Analysis Period (min) 15						

TTN_With Development 2035 AM_v1
2: Bear Tavern Rd./Bear Tavern Rd, & 295 SB Ramp

WD2035

AM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	372	0	219	0	0	0	0	560	0	320	798	0
Future Volume (vph)	372	0	219	0	0	0	0	560	0	320	798	0
Satd. Flow (prot)	0	2025	1830	0	0	0	0	1759	0	1662	1894	0
Flt Permitted												0.097
Satd. Flow (perm)	0	2025	1830	0	0	0	0	1759	0	170	1894	0
Satd. Flow (RTOR)								167				
Lane Group Flow (vph)	0	448	264	0	0	0	0	737	0	364	907	0
Turn Type	Split	NA	Free						NA	pm+pt	NA	
Protected Phases	8	8							6	5	2	
Permitted Phases			Free								2	
Total Split (s)	26.0	26.0						45.0		18.0	63.0	
Total Lost Time (s)		5.0						6.0		3.0	6.0	
Act Effct Green (s)	20.8	89.0						39.2		60.2	57.2	
Actuated g/C Ratio	0.23	1.00						0.44		0.68	0.64	
v/c Ratio	0.95	0.14						0.95		0.99	0.74	
Control Delay	66.0	0.2						48.2		70.7	15.8	
Queue Delay	0.0	0.0						0.0		0.0	0.0	
Total Delay	66.0	0.2						48.2		70.7	15.8	
LOS	E	A						D		E	B	
Approach Delay	41.6							48.2			31.5	
Approach LOS	D							D			C	
Queue Length 50th (ft)	248	0						388		152	315	
Queue Length 95th (ft)	#373	0						#430		#320	450	
Internal Link Dist (ft)	715		3					143			335	
Turn Bay Length (ft)		150									163	
Base Capacity (vph)	477	1830						775		366	1218	
Starvation Cap Reductn	0	0						0		0	0	
Spillback Cap Reductn	0	0						0		0	0	
Storage Cap Reductn	0	0						0		0	0	
Reduced v/c Ratio	0.94	0.14						0.95		0.99	0.74	

Intersection Summary

Cycle Length: 89

Actuated Cycle Length: 89

Offset: 0 (0%), Referenced to phase 6:NBT and 2:SBTL, Start of Yellow

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.99

Intersection Signal Delay: 38.7

Intersection LOS: D

Intersection Capacity Utilization 80.3%

ICU Level of Service D

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 2: Bear Tavern Rd./Bear Tavern Rd, & 295 SB Ramp



Lanes, Volumes, Timings

Page 1



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↑	↑	↑		↑	↑
Traffic Volume (vph)	60	95	675	125	114	909
Future Volume (vph)	60	95	675	125	114	909
Satd. Flow (prot)	1745	1794	1693	0	1745	1733
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1745	1794	1693	0	1745	1733
Lane Group Flow (vph)	80	127	898	0	134	1069
Sign Control	Stop		Free			Free

Intersection Summary

Control Type: Unsignalized

Intersection Capacity Utilization 62.8% ICU Level of Service B

Analysis Period (min) 15

Intersection						
Int Delay, s/veh	22.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Vol, veh/h	60	95	675	125	114	909
Future Vol, veh/h	60	95	675	125	114	909
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	None
Storage Length	0	60	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	75	75	89	89	85	85
Heavy Vehicles, %	0	2	7	2	0	6
Mvmt Flow	80	127	758	140	134	1069
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	2165	828	0	0	898	0
Stage 1	828	-	-	-	-	-
Stage 2	1337	-	-	-	-	-
Critical Hdwy	6.4	6.22	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.318	-	-	2.2	-
Pot Cap-1 Maneuver	~ 53	371	-	-	765	-
Stage 1	432	-	-	-	-	-
Stage 2	247	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	~ 44	371	-	-	765	-
Mov Cap-2 Maneuver	~ 44	-	-	-	-	-
Stage 1	432	-	-	-	-	-
Stage 2	204	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	239.8	0		1.2		
HCM LOS	F					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	44	371	765	-
HCM Lane V/C Ratio	-	-	1.818	0.341	0.175	-
HCM Control Delay (s)	-	\$	588.4	19.7	10.7	-
HCM Lane LOS	-	-	F	C	B	-
HCM 95th %tile Q(veh)	-	-	8.2	1.5	0.6	-
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

TTN_With Development 2035 AM_v1
4: Grand Ave./Bear Tavern Rd. & Upper Ferry Rd.

WD2035

AM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑	↑			↑	↑	↑	↑		↑	↑	
Traffic Volume (vph)	110	108	42	29	110	243	33	444	64	303	570	66
Future Volume (vph)	110	108	42	29	110	243	33	444	64	303	570	66
Satd. Flow (prot)	1601	1817	0	0	1605	1358	0	1986	0	1687	1889	0
Flt Permitted	0.618				0.909			0.997		0.950		
Satd. Flow (perm)	1038	1817	0	0	1474	1325	0	1986	0	1687	1889	0
Satd. Flow (RTOR)			22						8			
Lane Group Flow (vph)	124	168	0	0	158	276	0	616	0	344	723	0
Turn Type	Perm	NA		Perm	NA	Perm	Split	NA		Split	NA	
Protected Phases			8			4		6	6		2	2
Permitted Phases		8				4		4				
Total Split (s)	26.0	26.0		26.0	26.0	26.0	30.0	30.0		28.0	28.0	
Total Lost Time (s)	5.0	5.0			5.0	5.0		5.0		5.0	5.0	
Act Effct Green (s)	19.9	19.9			19.9	19.9		25.0		24.1	24.1	
Actuated g/C Ratio	0.24	0.24			0.24	0.24		0.30		0.29	0.29	
v/c Ratio	0.51	0.38			0.45	0.88		1.03		0.71	1.33	
Control Delay	35.4	25.5			31.7	60.4		76.7		37.2	191.2	
Queue Delay	0.0	0.0			0.0	0.0		0.0		0.0	0.0	
Total Delay	35.4	25.5			31.7	60.4		76.7		37.2	191.2	
LOS	D	C			C	E		E		D	F	
Approach Delay		29.7			49.9			76.7			141.5	
Approach LOS		C			D			E			F	
Queue Length 50th (ft)	56	63			70	138		~350		165	~516	
Queue Length 95th (ft)	109	116			124	#261		#534		#276	#703	
Internal Link Dist (ft)		683			502			646			1370	
Turn Bay Length (ft)					22							
Base Capacity (vph)	259	470			368	331		596		484	542	
Starvation Cap Reductn	0	0			0	0		0		0	0	
Spillback Cap Reductn	0	0			0	0		0		0	0	
Storage Cap Reductn	0	0			0	0		0		0	0	
Reduced v/c Ratio	0.48	0.36			0.43	0.83		1.03		0.71	1.33	

Intersection Summary

Cycle Length: 84

Actuated Cycle Length: 84

Offset: 0 (0%), Referenced to phase 2:SBTL, Start of Yellow

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.33

Intersection Signal Delay: 94.9

Intersection LOS: F

Intersection Capacity Utilization 99.6%

ICU Level of Service F

Analysis Period (min) 15

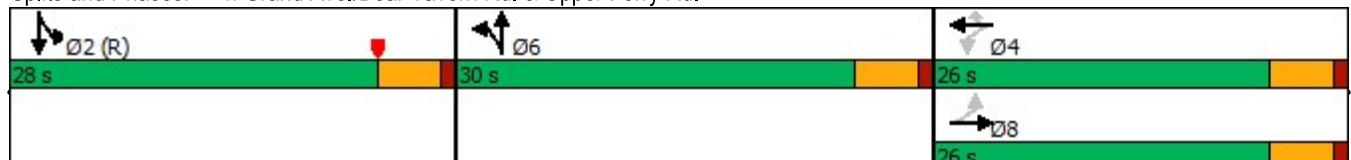
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 4: Grand Ave./Bear Tavern Rd. & Upper Ferry Rd.





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	1	2	3	4	5	6	7	8	9	10	11	12
Traffic Volume (vph)	98	447	33	59	46	137	0	465	0	0	548	0
Future Volume (vph)	98	447	33	59	46	137	0	465	0	0	548	0
Satd. Flow (prot)	1671	1859	0	1419	1845	1545	0	3505	0	0	3505	0
Flt Permitted	0.719				0.218							
Satd. Flow (perm)	1265	1859	0	326	1845	1545	0	3505	0	0	3505	0
Satd. Flow (RTOR)			6			125						
Lane Group Flow (vph)	108	527	0	76	59	176	0	541	0	0	571	0
Turn Type	Perm	NA		Perm	NA	Perm		NA			NA	
Protected Phases			4			8			6		2	
Permitted Phases		4			8		8					
Total Split (s)	52.0	52.0		52.0	52.0	52.0		36.0			36.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0		7.0			7.0	
Act Effct Green (s)	32.1	32.1		32.1	32.1	32.1		42.9			42.9	
Actuated g/C Ratio	0.36	0.36		0.36	0.36	0.36		0.49			0.49	
v/c Ratio	0.23	0.77		0.64	0.09	0.27		0.32			0.33	
Control Delay	18.7	31.9		46.4	15.9	6.5		15.8			16.0	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0			0.0	
Total Delay	18.7	31.9		46.4	15.9	6.5		15.8			16.0	
LOS	B	C		D	B	A		B			B	
Approach Delay		29.6			18.0			15.8			16.0	
Approach LOS		C			B			B			B	
Queue Length 50th (ft)	41	250		34	21	18		92			98	
Queue Length 95th (ft)	64	305		61	32	37		149			167	
Internal Link Dist (ft)		230			119			322			532	
Turn Bay Length (ft)	100											
Base Capacity (vph)	661	974		170	964	867		1709			1709	
Starvation Cap Reductn	0	0		0	0	0		0			0	
Spillback Cap Reductn	0	0		0	0	0		0			0	
Storage Cap Reductn	0	0		0	0	0		0			0	
Reduced v/c Ratio	0.16	0.54		0.45	0.06	0.20		0.32			0.33	

Intersection Summary

Cycle Length: 88

Actuated Cycle Length: 88

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

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.77

Intersection Signal Delay: 20.5

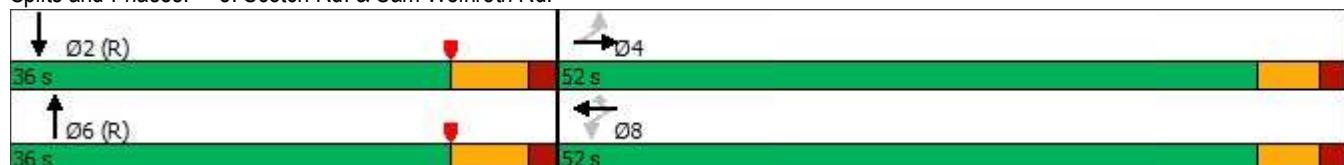
Intersection LOS: C

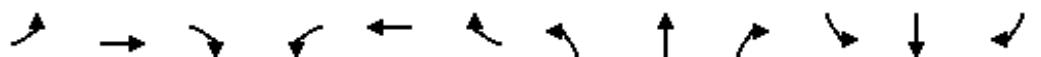
Intersection Capacity Utilization 62.3%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 5: Scotch Rd. & Sam Weinroth Rd.





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	146	3	3	44	0	3	0	4	427	16	90
Future Volume (vph)	0	146	3	3	44	0	3	0	4	427	16	90
Satd. Flow (prot)	0	1823	0	0	1903	0	0	1186	0	1865	1555	0
Flt Permitted					0.997			0.978		0.950		
Satd. Flow (perm)	0	1823	0	0	1903	0	0	1186	0	1865	1555	0
Lane Group Flow (vph)	0	184	0	0	52	0	0	9	0	480	119	0
Sign Control		Free			Free			Stop		Stop		

Intersection Summary

Control Type: Unsignalized

Intersection Capacity Utilization 44.9%

ICU Level of Service A

Analysis Period (min) 15

Intersection												
Int Delay, s/veh	12.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	146	3	3	44	0	3	0	4	427	16	90
Future Vol, veh/h	0	146	3	3	44	0	3	0	4	427	16	90
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	0	-	172
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	81	81	81	90	90	90	75	75	75	89	89	89
Heavy Vehicles, %	0	4	0	50	0	0	50	0	67	0	17	9
Mvmt Flow	0	180	4	3	49	0	4	0	5	480	18	101
Major/Minor												
Major1		Major2			Minor1			Minor2				
Conflicting Flow All	-	0	0	184	0	0	297	237	182	240	239	49
Stage 1	-	-	-	-	-	-	182	182	-	55	55	-
Stage 2	-	-	-	-	-	-	115	55	-	185	184	-
Critical Hdwy	-	-	-	4.6	-	-	7.6	6.5	6.87	7.1	6.67	6.29
Critical Hdwy Stg 1	-	-	-	-	-	-	6.6	5.5	-	6.1	5.67	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.6	5.5	-	6.1	5.67	-
Follow-up Hdwy	-	-	-	2.65	-	-	3.95	4	3.903	3.5	4.153	3.381
Pot Cap-1 Maneuver	0	-	-	1148	-	0	570	667	718	718	637	1000
Stage 1	0	-	-	-	-	0	720	753	-	962	820	-
Stage 2	0	-	-	-	-	0	786	853	-	821	720	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	1148	-	-	500	665	718	711	635	1000
Mov Cap-2 Maneuver	-	-	-	-	-	-	500	665	-	711	635	-
Stage 1	-	-	-	-	-	-	720	753	-	962	818	-
Stage 2	-	-	-	-	-	-	689	850	-	815	720	-
Approach												
EB		WB			NB			SB				
HCM Control Delay, s	0			0.5			11			17.8		
HCM LOS							B			C		
Minor Lane/Major Mvmt												
NBLn1		EBT	EBR	WBL	WBT	SBLn1	SBLn2					
Capacity (veh/h)	605	-	-	1148	-	711	920					
HCM Lane V/C Ratio	0.015	-	-	0.003	-	0.675	0.129					
HCM Control Delay (s)	11	-	-	8.1	0	19.9	9.5					
HCM Lane LOS	B	-	-	A	A	C	A					
HCM 95th %tile Q(veh)	0	-	-	0	-	5.3	0.4					



Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑			↑↑	↑	
Traffic Volume (vph)	447	0	0	209	33	137
Future Volume (vph)	447	0	0	209	33	137
Satd. Flow (prot)	1881	0	0	3610	1899	0
Flt Permitted					0.990	
Satd. Flow (perm)	1881	0	0	3610	1899	0
Lane Group Flow (vph)	491	0	0	268	215	0
Sign Control	Free			Free	Stop	

Intersection Summary

Control Type: Unsignalized

Intersection Capacity Utilization 40.5%

ICU Level of Service A

Analysis Period (min) 15

Intersection						
Int Delay, s/veh	3.5					
Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑			↑↑	↖	
Traffic Vol, veh/h	447	0	0	209	33	137
Future Vol, veh/h	447	0	0	209	33	137
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	91	91	78	78	79	79
Heavy Vehicles, %	1	0	0	0	0	0
Mvmt Flow	491	0	0	268	42	173
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	-	-	-	625	491
Stage 1	-	-	-	-	491	-
Stage 2	-	-	-	-	134	-
Critical Hdwy	-	-	-	-	6.6	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	-	0	0	-	436	582
Stage 1	-	0	0	-	619	-
Stage 2	-	0	0	-	884	-
Platoon blocked, %	-					
Mov Cap-1 Maneuver	-	-	-	-	436	582
Mov Cap-2 Maneuver	-	-	-	-	436	-
Stage 1	-	-	-	-	619	-
Stage 2	-	-	-	-	884	-
Approach	EB	WB	NE			
HCM Control Delay, s	0	0	15.8			
HCM LOS			C			
Minor Lane/Major Mvmt	NELn1	EBT	WBT			
Capacity (veh/h)	546	-	-			
HCM Lane V/C Ratio	0.394	-	-			
HCM Control Delay (s)	15.8	-	-			
HCM Lane LOS	C	-	-			
HCM 95th %tile Q(veh)	1.9	-	-			



Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑				↑	
Traffic Volume (vph)	320	0	0	0	0	274
Future Volume (vph)	320	0	0	0	0	274
Satd. Flow (prot)	2091	0	0	0	0	1725
Flt Permitted						
Satd. Flow (perm)	2091	0	0	0	0	1725
Lane Group Flow (vph)	364	0	0	0	0	308
Sign Control	Free			Free	Free	

Intersection Summary

Control Type: Unsignalized

Intersection Capacity Utilization 40.5% ICU Level of Service A

Analysis Period (min) 15



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	560	274	0	1017
Future Volume (vph)	0	0	560	274	0	1017
Satd. Flow (prot)	0	0	1759	1495	0	1776
Flt Permitted						
Satd. Flow (perm)	0	0	1759	1495	0	1776
Lane Group Flow (vph)	0	0	737	361	0	1156
Sign Control	Free		Free			Free

Intersection Summary

Control Type: Unsignalized

Intersection Capacity Utilization 56.9%

ICU Level of Service B

Analysis Period (min) 15



Lane Group	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations						
Traffic Volume (vph)	0	700	548	533	0	0
Future Volume (vph)	0	700	548	533	0	0
Satd. Flow (prot)	0	3505	4731	0	0	0
Flt Permitted						
Satd. Flow (perm)	0	3505	4731	0	0	0
Lane Group Flow (vph)	0	814	1126	0	0	0
Sign Control		Free	Free		Free	

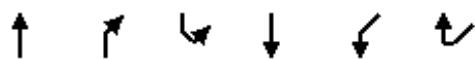
Intersection Summary

Control Type: Unsignalized

Intersection Capacity Utilization 25.9%

ICU Level of Service A

Analysis Period (min) 15



Lane Group	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations	↑↓			↑↑		
Traffic Volume (vph)	465	170	0	640	0	0
Future Volume (vph)	465	170	0	640	0	0
Satd. Flow (prot)	3391	0	0	3505	0	0
Flt Permitted						
Satd. Flow (perm)	3391	0	0	3505	0	0
Lane Group Flow (vph)	739	0	0	667	0	0
Sign Control	Free			Free	Free	

Intersection Summary

Control Type: Unsignalized

Intersection Capacity Utilization 21.6%

ICU Level of Service A

Analysis Period (min) 15

TTN_With Development 2035 PM_v0
2: Bear Tavern Rd./Bear Tavern Rd, & 295 SB Ramp

WD2035

PM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	205	0	176	0	0	0	0	708	0	355	644	0
Future Volume (vph)	205	0	176	0	0	0	0	708	0	355	644	0
Satd. Flow (prot)	0	2006	1812	0	0	0	0	1881	0	1694	1987	0
Flt Permitted												0.153
Satd. Flow (perm)	0	2006	1812	0	0	0	0	1881	0	273	1987	0
Satd. Flow (RTOR)								174				
Lane Group Flow (vph)	0	230	198	0	0	0	0	761	0	403	732	0
Turn Type	Split	NA	Free						NA	pm+pt	NA	
Protected Phases	8	8							6	5	2	
Permitted Phases			Free								2	
Total Split (s)	25.0	25.0						46.0		18.0	64.0	
Total Lost Time (s)		5.0						6.0		3.0	6.0	
Act Effct Green (s)	14.5	89.0						45.5		66.5	63.5	
Actuated g/C Ratio	0.16	1.00						0.51		0.75	0.71	
v/c Ratio	0.71	0.11						0.79		0.91	0.52	
Control Delay	46.7	0.1						33.0		42.4	8.0	
Queue Delay	0.0	0.0						0.0		0.0	0.0	
Total Delay	46.7	0.1						33.0		42.4	8.0	
LOS	D	A						C		D	A	
Approach Delay	25.1							33.0			20.2	
Approach LOS	C							C			C	
Queue Length 50th (ft)	124	0						376		122	157	
Queue Length 95th (ft)	184	0						m413		#300	280	
Internal Link Dist (ft)	715		3					143			335	
Turn Bay Length (ft)		100									163	
Base Capacity (vph)	450	1812						962		443	1418	
Starvation Cap Reductn	0	0						0		0	0	
Spillback Cap Reductn	0	0						0		0	0	
Storage Cap Reductn	0	0						0		0	0	
Reduced v/c Ratio	0.51	0.11						0.79		0.91	0.52	

Intersection Summary

Cycle Length: 89

Actuated Cycle Length: 89

Offset: 0 (0%), Referenced to phase 6:NBT and 2:SBTL, Start of Yellow

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.91

Intersection Signal Delay: 25.3

Intersection LOS: C

Intersection Capacity Utilization 80.8%

ICU Level of Service D

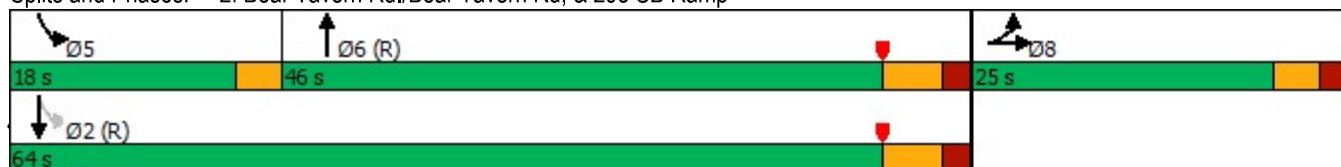
Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Bear Tavern Rd./Bear Tavern Rd, & 295 SB Ramp





Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙	↗	↑	↖	↘	↑
Traffic Volume (vph)	103	144	837	89	132	640
Future Volume (vph)	103	144	837	89	132	640
Satd. Flow (prot)	1745	1812	1765	0	1745	1783
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1745	1812	1765	0	1745	1783
Lane Group Flow (vph)	137	192	996	0	150	727
Sign Control	Stop		Free			Free

Intersection Summary

Control Type: Unsignalized

Intersection Capacity Utilization 72.5%

ICU Level of Service C

Analysis Period (min) 15

Intersection						
Int Delay, s/veh	57.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Vol, veh/h	103	144	837	89	132	640
Future Vol, veh/h	103	144	837	89	132	640
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	None
Storage Length	0	60	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	75	75	93	93	88	88
Heavy Vehicles, %	0	1	3	0	0	3
Mvmt Flow	137	192	900	96	150	727
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1975	948	0	0	996	0
Stage 1	948	-	-	-	-	-
Stage 2	1027	-	-	-	-	-
Critical Hdwy	6.4	6.21	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.309	-	-	2.2	-
Pot Cap-1 Maneuver	~ 69	318	-	-	703	-
Stage 1	380	-	-	-	-	-
Stage 2	348	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	~ 54	318	-	-	703	-
Mov Cap-2 Maneuver	~ 54	-	-	-	-	-
Stage 1	380	-	-	-	-	-
Stage 2	274	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, \$	378.5	0	2			
HCM LOS	F					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	54	318	703	-
HCM Lane V/C Ratio	-	-	2.543	0.604	0.213	-
HCM Control Delay (s)	-	\$ 862.6	32.2	11.5	-	-
HCM Lane LOS	-	-	F	D	B	-
HCM 95th %tile Q(veh)	-	-	14.1	3.7	0.8	-
Notes						
~: Volume exceeds capacity	\$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon			

TTN_With Development 2035 PM_v0
4: Grand Ave./Bear Tavern Rd. & Upper Ferry Rd.

WD2035

PM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑	↑			↑	↑	↑	↑		↑	↑	
Traffic Volume (vph)	79	142	38	38	233	338	33	522	38	260	346	92
Future Volume (vph)	79	142	38	38	233	338	33	522	38	260	346	92
Satd. Flow (prot)	1694	1821	0	0	1717	1478	0	2068	0	1752	1938	0
Flt Permitted	0.427				0.930			0.997		0.950		
Satd. Flow (perm)	761	1821	0	0	1608	1446	0	2068	0	1752	1938	0
Satd. Flow (RTOR)			16						4			
Lane Group Flow (vph)	94	214	0	0	288	360	0	682	0	280	471	0
Turn Type	Perm	NA		Perm	NA	Perm	Split	NA		Split	NA	
Protected Phases		8				4			6	6		2
Permitted Phases		8				4			4			
Total Split (s)	35.0	35.0		35.0	35.0	35.0	31.0	31.0		23.0	23.0	
Total Lost Time (s)	5.0	5.0			5.0	5.0		5.0		5.0	5.0	
Act Effct Green (s)	26.1	26.1			26.1	26.1		26.0		21.9	21.9	
Actuated g/C Ratio	0.29	0.29			0.29	0.29		0.29		0.25	0.25	
v/c Ratio	0.42	0.39			0.61	0.85		1.13		0.65	0.99	
Control Delay	30.4	24.4			32.3	48.3		107.5		44.2	79.5	
Queue Delay	0.0	0.0			0.0	0.0		0.0		0.0	0.0	
Total Delay	30.4	24.4			32.3	48.3		107.5		44.2	79.5	
LOS	C	C			C	D		F		D	E	
Approach Delay		26.2			41.2			107.5			66.3	
Approach LOS		C			D			F			E	
Queue Length 50th (ft)	41	84			133	182		~447		165	~313	
Queue Length 95th (ft)	77	129			208	#306		#628		#284	#529	
Internal Link Dist (ft)		683			502			646			1370	
Turn Bay Length (ft)					22							
Base Capacity (vph)	256	624			542	487		606		430	475	
Starvation Cap Reductn	0	0			0	0		0		0	0	
Spillback Cap Reductn	0	0			0	0		0		0	0	
Storage Cap Reductn	0	0			0	0		0		0	0	
Reduced v/c Ratio	0.37	0.34			0.53	0.74		1.13		0.65	0.99	

Intersection Summary

Cycle Length: 89

Actuated Cycle Length: 89

Offset: 0 (0%), Referenced to phase 2:SBTL, Start of Yellow

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.13

Intersection Signal Delay: 66.1

Intersection LOS: E

Intersection Capacity Utilization 98.9%

ICU Level of Service F

Analysis Period (min) 15

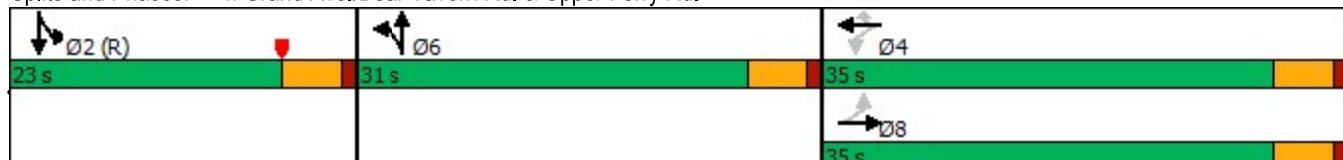
~ Volume exceeds capacity, queue is theoretically infinite.

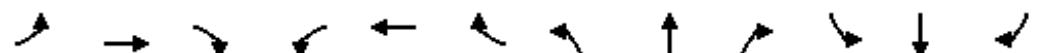
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 4: Grand Ave./Bear Tavern Rd. & Upper Ferry Rd.





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑	↑		↑	↑	↑	↑	↑↑			↑↑	
Traffic Volume (vph)	140	61	64	127	52	294	0	522	0	0	602	0
Future Volume (vph)	140	61	64	127	52	294	0	522	0	0	602	0
Satd. Flow (prot)	1770	1664	0	1745	1900	1669	0	3574	0	0	3539	0
Flt Permitted	0.712				0.631							
Satd. Flow (perm)	1326	1664	0	1159	1900	1669	0	3574	0	0	3539	0
Satd. Flow (RTOR)				65		232						
Lane Group Flow (vph)	177	158	0	169	69	392	0	607	0	0	647	0
Turn Type	Perm	NA		Perm	NA	Perm		NA			NA	
Protected Phases			4			8		6			2	
Permitted Phases		4			8		8					
Total Split (s)	36.0	36.0		36.0	36.0	36.0		52.0			52.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0		7.0			7.0	
Act Effct Green (s)	18.3	18.3		18.3	18.3	18.3		56.7			56.7	
Actuated g/C Ratio	0.21	0.21		0.21	0.21	0.21		0.64			0.64	
v/c Ratio	0.64	0.40		0.70	0.18	0.74		0.26			0.28	
Control Delay	41.6	19.1		47.0	27.0	21.0		8.0			8.1	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0			0.0	
Total Delay	41.6	19.1		47.0	27.0	21.0		8.0			8.1	
LOS	D	B		D	C	C		A			A	
Approach Delay		31.0			28.7			8.0			8.1	
Approach LOS		C			C			A			A	
Queue Length 50th (ft)	90	43		87	32	80		68			73	
Queue Length 95th (ft)	118	70		110	48	101		115			132	
Internal Link Dist (ft)		230			119			322			532	
Turn Bay Length (ft)	100											
Base Capacity (vph)	452	610		395	647	721		2304			2282	
Starvation Cap Reductn	0	0		0	0	0		0			0	
Spillback Cap Reductn	0	0		0	0	0		0			0	
Storage Cap Reductn	0	0		0	0	0		0			0	
Reduced v/c Ratio	0.39	0.26		0.43	0.11	0.54		0.26			0.28	

Intersection Summary

Cycle Length: 88

Actuated Cycle Length: 88

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

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.74

Intersection Signal Delay: 17.4

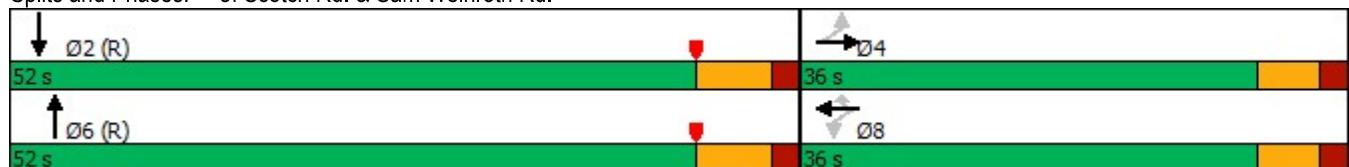
Intersection LOS: B

Intersection Capacity Utilization 56.2%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 5: Scotch Rd. & Sam Weinroth Rd.





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑			↑			↑		↑	↑	
Traffic Volume (vph)	0	178	3	1	60	0	3	0	16	72	1	90
Future Volume (vph)	0	178	3	1	60	0	3	0	16	72	1	90
Satd. Flow (prot)	0	1878	0	0	1961	0	0	1723	0	1711	1625	0
Flt Permitted					0.999				0.992		0.950	
Satd. Flow (perm)	0	1878	0	0	1961	0	0	1723	0	1711	1625	0
Lane Group Flow (vph)	0	241	0	0	72	0	0	25	0	78	99	0
Sign Control		Free			Free			Stop		Stop		

Intersection Summary

Control Type: Unsignalized

Intersection Capacity Utilization 26.9%

ICU Level of Service A

Analysis Period (min) 15

Intersection												
Int Delay, s/veh	4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	178	3	1	60	0	3	0	16	72	1	90
Future Vol, veh/h	0	178	3	1	60	0	3	0	16	72	1	90
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	0	-	172
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	84	84	84	75	75	75	92	92	92
Heavy Vehicles, %	0	1	0	0	0	0	0	0	8	9	0	3
Mvmt Flow	0	237	4	1	71	0	4	0	21	78	1	98
Major/Minor												
Major1		Major2			Minor1			Minor2				
Conflicting Flow All	-	0	0	241	0	0	362	312	239	323	314	71
Stage 1	-	-	-	-	-	-	239	239	-	73	73	-
Stage 2	-	-	-	-	-	-	123	73	-	250	241	-
Critical Hdwy	-	-	-	4.1	-	-	7.1	6.5	6.28	7.19	6.5	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.19	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.19	5.5	-
Follow-up Hdwy	-	-	-	2.2	-	-	3.5	4	3.372	3.581	4	3.327
Pot Cap-1 Maneuver	0	-	-	1337	-	0	598	606	785	617	605	989
Stage 1	0	-	-	-	-	0	769	711	-	919	838	-
Stage 2	0	-	-	-	-	0	886	838	-	739	710	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	1337	-	-	538	605	785	600	604	989
Mov Cap-2 Maneuver	-	-	-	-	-	-	538	605	-	600	604	-
Stage 1	-	-	-	-	-	-	769	711	-	919	837	-
Stage 2	-	-	-	-	-	-	797	837	-	719	710	-
Approach												
EB		WB			NB			SB				
HCM Control Delay, s	0			0.1			10.1			10.3		
HCM LOS							B			B		
Minor Lane/Major Mvmt												
NBLn1		EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2				
Capacity (veh/h)	732	-	-	1337	-	-	600	982				
HCM Lane V/C Ratio	0.035	-	-	0.001	-	-	0.13	0.101				
HCM Control Delay (s)	10.1	-	-	7.7	0	11.9	9.1					
HCM Lane LOS	B	-	-	A	A	B	A					
HCM 95th %tile Q(veh)	0.1	-	-	0	-	0.4	0.3					



Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑			↑↑	↑↑	
Traffic Volume (vph)	61	0	0	435	38	41
Future Volume (vph)	61	0	0	435	38	41
Satd. Flow (prot)	1712	0	0	3610	1957	0
Flt Permitted					0.977	
Satd. Flow (perm)	1712	0	0	3610	1957	0
Lane Group Flow (vph)	77	0	0	580	106	0
Sign Control	Free			Free	Stop	

Intersection Summary

Control Type: Unsignalized

Intersection Capacity Utilization 23.3%

ICU Level of Service A

Analysis Period (min) 15

Intersection						
Int Delay, s/veh	1.4					
Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑			↑↑	Y	
Traffic Vol, veh/h	61	0	0	435	38	41
Future Vol, veh/h	61	0	0	435	38	41
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	79	79	75	75	75	75
Heavy Vehicles, %	11	0	0	0	0	0
Mvmt Flow	77	0	0	580	51	55
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	-	-	-	367	77
Stage 1	-	-	-	-	77	-
Stage 2	-	-	-	-	290	-
Critical Hdwy	-	-	-	-	6.6	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	-	0	0	-	624	990
Stage 1	-	0	0	-	951	-
Stage 2	-	0	0	-	740	-
Platoon blocked, %	-					
Mov Cap-1 Maneuver	-	-	-	-	624	990
Mov Cap-2 Maneuver	-	-	-	-	624	-
Stage 1	-	-	-	-	951	-
Stage 2	-	-	-	-	740	-
Approach	EB	WB	NE			
HCM Control Delay, s	0	0	10.4			
HCM LOS			B			
Minor Lane/Major Mvmt	NELn1	EBT	WBT			
Capacity (veh/h)	772	-	-			
HCM Lane V/C Ratio	0.136	-	-			
HCM Control Delay (s)	10.4	-	-			
HCM Lane LOS	B	-	-			
HCM 95th %tile Q(veh)	0.5	-	-			



Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑				↑	
Traffic Volume (vph)	355	0	0	0	0	291
Future Volume (vph)	355	0	0	0	0	291
Satd. Flow (prot)	2091	0	0	0	0	1808
Flt Permitted						
Satd. Flow (perm)	2091	0	0	0	0	1808
Lane Group Flow (vph)	403	0	0	0	0	342
Sign Control	Free		Free	Free		

Intersection Summary

Control Type: Unsignalized

Intersection Capacity Utilization 43.4%

ICU Level of Service A

Analysis Period (min) 15



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			↑	↑		↑
Traffic Volume (vph)	0	0	708	291	0	820
Future Volume (vph)	0	0	708	291	0	820
Satd. Flow (prot)	0	0	1881	1568	0	1863
Flt Permitted						
Satd. Flow (perm)	0	0	1881	1568	0	1863
Lane Group Flow (vph)	0	0	761	313	0	932
Sign Control	Free		Free			Free

Intersection Summary

Control Type: Unsignalized

Intersection Capacity Utilization 46.5%

ICU Level of Service A

Analysis Period (min) 15



Lane Group	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations		↑↑	↑↑↑			
Traffic Volume (vph)	0	956	602	163	0	0
Future Volume (vph)	0	956	602	163	0	0
Satd. Flow (prot)	0	3574	4943	0	0	0
Flt Permitted						
Satd. Flow (perm)	0	3574	4943	0	0	0
Lane Group Flow (vph)	0	1112	822	0	0	0
Sign Control		Free	Free		Free	

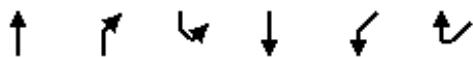
Intersection Summary

Control Type: Unsignalized

Intersection Capacity Utilization 29.8%

ICU Level of Service A

Analysis Period (min) 15



Lane Group	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations	↑↓			↑↑		
Traffic Volume (vph)	522	79	0	793	0	0
Future Volume (vph)	522	79	0	793	0	0
Satd. Flow (prot)	3507	0	0	3539	0	0
Flt Permitted						
Satd. Flow (perm)	3507	0	0	3539	0	0
Lane Group Flow (vph)	699	0	0	853	0	0
Sign Control	Free			Free	Free	

Intersection Summary

Control Type: Unsignalized

Intersection Capacity Utilization 25.3%

ICU Level of Service A

Analysis Period (min) 15

TTN_With Development 2035 SAT_v0
2: Bear Tavern Rd./Bear Tavern Rd, & 295 SB Ramp

WD2035

SAT Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	219	0	130	0	0	0	0	479	0	141	479	0
Future Volume (vph)	219	0	130	0	0	0	0	479	0	141	479	0
Satd. Flow (prot)	0	1948	1812	0	0	0	0	1863	0	1728	2007	0
Flt Permitted	0.950										0.284	
Satd. Flow (perm)	0	1948	1812	0	0	0	0	1863	0	516	2007	0
Satd. Flow (RTOR)			135									
Lane Group Flow (vph)	0	274	163	0	0	0	0	639	0	147	499	0
Turn Type	Split	NA	Free					NA		pm+pt	NA	
Protected Phases	8	8						6		5	2	
Permitted Phases			Free								2	
Total Split (s)	25.0	25.0						46.0		18.0	64.0	
Total Lost Time (s)		5.0						6.0		3.0	6.0	
Act Effct Green (s)	16.2	89.0						51.2		64.8	61.8	
Actuated g/C Ratio	0.18	1.00						0.58		0.73	0.69	
v/c Ratio	0.77	0.09						0.60		0.31	0.36	
Control Delay	49.4	0.1						16.2		5.9	6.9	
Queue Delay	0.0	0.0						0.0		0.0	0.0	
Total Delay	49.4	0.1						16.2		5.9	6.9	
LOS	D	A						B		A	A	
Approach Delay	31.0							16.2			6.7	
Approach LOS	C							B			A	
Queue Length 50th (ft)	147	0						215		21	100	
Queue Length 95th (ft)	192	0						274		44	171	
Internal Link Dist (ft)	715		3					143			335	
Turn Bay Length (ft)		100									163	
Base Capacity (vph)	437	1812						1072		579	1393	
Starvation Cap Reductn	0	0						0		0	0	
Spillback Cap Reductn	0	0						0		0	0	
Storage Cap Reductn	0	0						0		0	0	
Reduced v/c Ratio	0.63	0.09						0.60		0.25	0.36	

Intersection Summary

Cycle Length: 89

Actuated Cycle Length: 89

Offset: 0 (0%), Referenced to phase 6:NBT and 2:SBTL, Start of Yellow

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.77

Intersection Signal Delay: 16.4

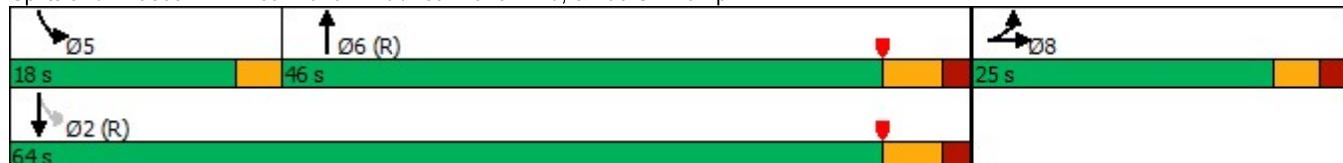
Intersection LOS: B

Intersection Capacity Utilization 57.7%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 2: Bear Tavern Rd./Bear Tavern Rd, & 295 SB Ramp





Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙	↗	↑	↗	↖	↑
Traffic Volume (vph)	35	74	544	47	69	536
Future Volume (vph)	35	74	544	47	69	536
Satd. Flow (prot)	1745	1830	1781	0	1745	1818
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1745	1830	1781	0	1745	1818
Lane Group Flow (vph)	47	99	664	0	73	570
Sign Control	Stop		Free			Free

Intersection Summary

Control Type: Unsignalized

Intersection Capacity Utilization 48.6%

ICU Level of Service A

Analysis Period (min) 15

Intersection						
Int Delay, s/veh	2.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Vol, veh/h	35	74	544	47	69	536
Future Vol, veh/h	35	74	544	47	69	536
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	None
Storage Length	0	60	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	75	75	89	89	94	94
Heavy Vehicles, %	0	0	2	2	0	1
Mvmt Flow	47	99	611	53	73	570
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	1354	638	0	0	664	0
Stage 1	638	-	-	-	-	-
Stage 2	716	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	167	480	-	-	935	-
Stage 1	530	-	-	-	-	-
Stage 2	488	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	154	480	-	-	935	-
Mov Cap-2 Maneuver	154	-	-	-	-	-
Stage 1	530	-	-	-	-	-
Stage 2	450	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	22	0		1		
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	154	480	935	-
HCM Lane V/C Ratio	-	-	0.303	0.206	0.079	-
HCM Control Delay (s)	-	-	38.2	14.4	9.2	-
HCM Lane LOS	-	-	E	B	A	-
HCM 95th %tile Q(veh)	-	-	1.2	0.8	0.3	-

TTN_With Development 2035 SAT_v0
4: Grand Ave./Bear Tavern Rd. & Upper Ferry Rd.

WD2035

SAT Peak

	↑	→	↓	↖	←	↗	↑	↖	↙	↓	↖	
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑	↑			↑	↑	↑	↑		↑	↑	
Traffic Volume (vph)	76	121	36	51	158	253	20	251	54	218	259	75
Future Volume (vph)	76	121	36	51	158	253	20	251	54	218	259	75
Satd. Flow (prot)	1728	1868	0	0	1735	1507	0	2050	0	1787	1938	0
Flt Permitted	0.513					0.878			0.997		0.950	
Satd. Flow (perm)	933	1868	0	0	1542	1507	0	2050	0	1787	1938	0
Satd. Flow (RTOR)			20						11			
Lane Group Flow (vph)	88	183	0	0	216	261	0	383	0	245	375	0
Turn Type	Perm	NA		Perm	NA	Perm	Split	NA		Split	NA	
Protected Phases		8				4		6	6		2	2
Permitted Phases	8			4		4						
Total Split (s)	36.0	36.0		36.0	36.0	36.0	24.0	24.0		24.0	24.0	
Total Lost Time (s)	5.0	5.0			5.0	5.0		5.0		5.0	5.0	
Act Effct Green (s)	20.6	20.6			20.6	20.6		18.0		30.5	30.5	
Actuated g/C Ratio	0.25	0.25			0.25	0.25		0.21		0.36	0.36	
v/c Ratio	0.39	0.39			0.57	0.71		0.86		0.38	0.53	
Control Delay	30.0	24.7			33.2	39.2		50.4		24.0	26.9	
Queue Delay	0.0	0.0			0.0	0.0		0.0		0.0	0.0	
Total Delay	30.0	24.7			33.2	39.2		50.4		24.0	26.9	
LOS	C	C			C	D		D		C	C	
Approach Delay		26.4			36.5			50.4			25.8	
Approach LOS		C			D			D			C	
Queue Length 50th (ft)	39	72			101	127		187		95	155	
Queue Length 95th (ft)	69	107			150	184		#295		180	#286	
Internal Link Dist (ft)		683			502			646			1370	
Turn Bay Length (ft)					22							
Base Capacity (vph)	344	702			569	556		472		648	702	
Starvation Cap Reductn	0	0			0	0		0		0	0	
Spillback Cap Reductn	0	0			0	0		0		0	0	
Storage Cap Reductn	0	0			0	0		0		0	0	
Reduced v/c Ratio	0.26	0.26			0.38	0.47		0.81		0.38	0.53	

Intersection Summary

Cycle Length: 84

Actuated Cycle Length: 84

Offset: 0 (0%), Referenced to phase 2:SBTL, Start of Yellow

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.86

Intersection Signal Delay: 34.2

Intersection LOS: C

Intersection Capacity Utilization 76.1%

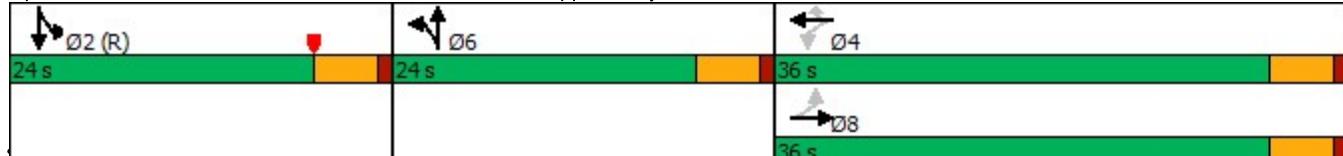
ICU Level of Service D

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

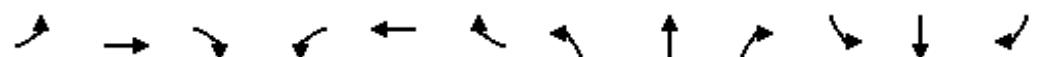
Queue shown is maximum after two cycles.

Splits and Phases: 4: Grand Ave./Bear Tavern Rd. & Upper Ferry Rd.



Lanes, Volumes, Timings

Page 4



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑	↑		↑	↑	↑	↑	↑		↑	↑	
Traffic Volume (vph)	48	10	37	9	21	16	0	364	0	0	340	0
Future Volume (vph)	48	10	37	9	21	16	0	364	0	0	340	0
Satd. Flow (prot)	1805	1676	0	1745	1900	1669	0	3574	0	0	3539	0
Flt Permitted	0.739				0.718							
Satd. Flow (perm)	1404	1676	0	1319	1900	1669	0	3574	0	0	3539	0
Satd. Flow (RTOR)				47		50						
Lane Group Flow (vph)	61	60	0	12	28	21	0	396	0	0	410	0
Turn Type	Perm	NA		Perm	NA	Perm		NA			NA	
Protected Phases			4			8			6		2	
Permitted Phases	4				8			8				
Total Split (s)	36.0	36.0		36.0	36.0	36.0		52.0			52.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0		7.0			7.0	
Act Effct Green (s)	9.6	9.6		9.6	9.6	9.6		69.4			69.4	
Actuated g/C Ratio	0.11	0.11		0.11	0.11	0.11		0.79			0.79	
v/c Ratio	0.40	0.27		0.08	0.14	0.09		0.14			0.15	
Control Delay	43.6	17.3		34.9	35.6	3.2		3.3			3.4	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0			0.0	
Total Delay	43.6	17.3		34.9	35.6	3.2		3.3			3.4	
LOS	D	B		C	D	A		A			A	
Approach Delay		30.6			24.3			3.3			3.4	
Approach LOS		C			C			A			A	
Queue Length 50th (ft)	32	7		6	14	0		26			27	
Queue Length 95th (ft)	59	32		18	31	1		47			44	
Internal Link Dist (ft)		230			119			322			532	
Turn Bay Length (ft)	100											
Base Capacity (vph)	478	602		449	647	601		2820			2792	
Starvation Cap Reductn	0	0		0	0	0		0			0	
Spillback Cap Reductn	0	0		0	0	0		0			0	
Storage Cap Reductn	0	0		0	0	0		0			0	
Reduced v/c Ratio	0.13	0.10		0.03	0.04	0.03		0.14			0.15	

Intersection Summary

Cycle Length: 88

Actuated Cycle Length: 88

Offset: 45 (51%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.40

Intersection Signal Delay: 8.0

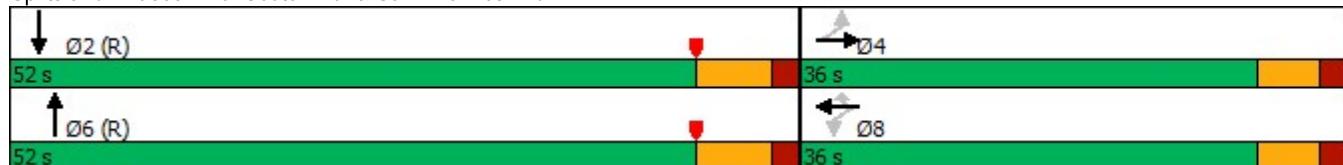
Intersection LOS: A

Intersection Capacity Utilization 40.0%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 5: Scotch Rd. & Sam Weinroth Rd.





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	76	1	1	26	0	0	0	1	17	3	47
Future Volume (vph)	0	76	1	1	26	0	0	0	1	17	3	47
Satd. Flow (prot)	0	1898	0	0	1959	0	0	1808	0	1865	1596	0
Flt Permitted						0.998					0.950	
Satd. Flow (perm)	0	1898	0	0	1959	0	0	1808	0	1865	1596	0
Lane Group Flow (vph)	0	93	0	0	31	0	0	1	0	23	67	0
Sign Control			Free			Free			Stop			Stop

Intersection Summary

Control Type: Unsignalized

Intersection Capacity Utilization 18.3%

ICU Level of Service A

Analysis Period (min) 15

Intersection												
Int Delay, s/veh	3.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑			↑		↑	↑		↑	↑	
Traffic Vol, veh/h	0	76	1	1	26	0	0	0	1	17	3	47
Future Vol, veh/h	0	76	1	1	26	0	0	0	1	17	3	47
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	0	-	172
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	88	88	88	75	75	75	75	75	75
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	6
Mvmt Flow	0	92	1	1	30	0	0	0	1	23	4	63
Major/Minor												
Major1		Major2		Minor1		Minor2						
Conflicting Flow All	-	0	0	93	0	0	159	125	93	125	125	30
Stage 1	-	-	-	-	-	-	93	93	-	32	32	-
Stage 2	-	-	-	-	-	-	66	32	-	93	93	-
Critical Hdwy	-	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.26
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	-	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.354
Pot Cap-1 Maneuver	0	-	-	1514	-	0	811	769	970	854	769	1033
Stage 1	0	-	-	-	-	0	919	822	-	990	872	-
Stage 2	0	-	-	-	-	0	950	872	-	919	822	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	1514	-	-	758	768	970	852	768	1033
Mov Cap-2 Maneuver	-	-	-	-	-	-	758	768	-	852	768	-
Stage 1	-	-	-	-	-	-	919	822	-	990	871	-
Stage 2	-	-	-	-	-	-	887	871	-	918	822	-
Approach												
EB		WB		NB		SB						
HCM Control Delay, s	0			0.3			8.7			8.9		
HCM LOS							A			A		
Minor Lane/Major Mvmt												
NBLn1		EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2				
Capacity (veh/h)	970	-	-	1514	-	-	852	1012				
HCM Lane V/C Ratio	0.001	-	-	0.001	-	-	0.027	0.066				
HCM Control Delay (s)	8.7	-	-	7.4	0	9.3	8.8					
HCM Lane LOS	A	-	-	A	A	A	A					
HCM 95th %tile Q(veh)	0	-	-	0	-	-	0.1	0.2				



Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑			↑↑	↑	
Traffic Volume (vph)	10	0	0	29	17	15
Future Volume (vph)	10	0	0	29	17	15
Satd. Flow (prot)	1900	0	0	3610	1965	0
Flt Permitted					0.974	
Satd. Flow (perm)	1900	0	0	3610	1965	0
Lane Group Flow (vph)	13	0	0	39	43	0
Sign Control	Free			Free	Stop	

Intersection Summary

Control Type: Unsignalized

Intersection Capacity Utilization 13.3%

ICU Level of Service A

Analysis Period (min) 15

Intersection						
Int Delay, s/veh	3.9					
Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑			↑↑	Y	
Traffic Vol, veh/h	10	0	0	29	17	15
Future Vol, veh/h	10	0	0	29	17	15
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	79	79	75	75	75	75
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	13	0	0	39	23	20
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	-	-	-	33	13
Stage 1	-	-	-	-	13	-
Stage 2	-	-	-	-	20	-
Critical Hdwy	-	-	-	-	6.6	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	-	0	0	-	984	1073
Stage 1	-	0	0	-	1015	-
Stage 2	-	0	0	-	1006	-
Platoon blocked, %	-					
Mov Cap-1 Maneuver	-	-	-	-	984	1073
Mov Cap-2 Maneuver	-	-	-	-	984	-
Stage 1	-	-	-	-	1015	-
Stage 2	-	-	-	-	1006	-
Approach	EB	WB	NE			
HCM Control Delay, s	0	0	8.7			
HCM LOS			A			
Minor Lane/Major Mvmt	NELn1	EBT	WBT			
Capacity (veh/h)	1024	-	-			
HCM Lane V/C Ratio	0.042	-	-			
HCM Control Delay (s)	8.7	-	-			
HCM Lane LOS	A	-	-			
HCM 95th %tile Q(veh)	0.1	-	-			



Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	141	0	0	0	0	157
Future Volume (vph)	141	0	0	0	0	157
Satd. Flow (prot)	2132	0	0	0	0	1808
Flt Permitted						
Satd. Flow (perm)	2132	0	0	0	0	1808
Lane Group Flow (vph)	147	0	0	0	0	162
Sign Control	Free		Free	Free		

Intersection Summary

Control Type: Unsignalized

Intersection Capacity Utilization 23.8%

ICU Level of Service A

Analysis Period (min) 15



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			↑	↑		↑
Traffic Volume (vph)	0	0	479	157	0	609
Future Volume (vph)	0	0	479	157	0	609
Satd. Flow (prot)	0	0	1863	1568	0	1881
Flt Permitted						
Satd. Flow (perm)	0	0	1863	1568	0	1881
Lane Group Flow (vph)	0	0	639	209	0	634
Sign Control	Free		Free			Free
Intersection Summary						
Control Type: Unsignalized						
Intersection Capacity Utilization 35.4%	ICU Level of Service A					
Analysis Period (min) 15						



Lane Group	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations		↑↑	↑↑↑			
Traffic Volume (vph)	0	428	340	67	0	0
Future Volume (vph)	0	428	340	67	0	0
Satd. Flow (prot)	0	3574	4974	0	0	0
Flt Permitted						
Satd. Flow (perm)	0	3574	4974	0	0	0
Lane Group Flow (vph)	0	465	491	0	0	0
Sign Control		Free	Free		Free	

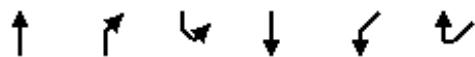
Intersection Summary

Control Type: Unsignalized

Intersection Capacity Utilization 15.2%

ICU Level of Service A

Analysis Period (min) 15



Lane Group	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations	↑↓			↑↑		
Traffic Volume (vph)	364	32	0	386	0	0
Future Volume (vph)	364	32	0	386	0	0
Satd. Flow (prot)	3534	0	0	3539	0	0
Flt Permitted						
Satd. Flow (perm)	3534	0	0	3539	0	0
Lane Group Flow (vph)	431	0	0	465	0	0
Sign Control	Free			Free	Free	

Intersection Summary

Control Type: Unsignalized

Intersection Capacity Utilization 14.4%

ICU Level of Service A

Analysis Period (min) 15

TTN_Without Development 2035 AM_v1
2: Bear Tavern Rd./Bear Tavern Rd, & 295 SB Ramp

WO2035

AM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	372	0	219	0	0	0	0	543	0	320	776	0
Future Volume (vph)	372	0	219	0	0	0	0	543	0	320	776	0
Satd. Flow (prot)	0	2025	1830	0	0	0	0	1759	0	1662	1894	0
Flt Permitted												0.118
Satd. Flow (perm)	0	2025	1830	0	0	0	0	1759	0	206	1894	0
Satd. Flow (RTOR)								167				
Lane Group Flow (vph)	0	448	264	0	0	0	0	714	0	364	882	0
Turn Type	Split	NA	Free						NA	pm+pt	NA	
Protected Phases	8	8							6	5	2	
Permitted Phases			Free								2	
Total Split (s)	26.0	26.0						45.0		18.0	63.0	
Total Lost Time (s)		5.0						6.0		3.0	6.0	
Act Effct Green (s)	20.8	89.0						39.4		60.2	57.2	
Actuated g/C Ratio	0.23	1.00						0.44		0.68	0.64	
v/c Ratio	0.95	0.14						0.92		0.95	0.72	
Control Delay	66.0	0.2						42.8		57.1	15.1	
Queue Delay	0.0	0.0						0.0		0.0	0.0	
Total Delay	66.0	0.2						42.8		57.1	15.1	
LOS	E	A						D		E	B	
Approach Delay	41.6							42.8			27.3	
Approach LOS	D							D			C	
Queue Length 50th (ft)	248	0						367		138	298	
Queue Length 95th (ft)	#373	0						404		#298	426	
Internal Link Dist (ft)	715		3					143			335	
Turn Bay Length (ft)		150									163	
Base Capacity (vph)	477	1830						777		385	1218	
Starvation Cap Reductn	0	0						0		0	0	
Spillback Cap Reductn	0	0						0		0	0	
Storage Cap Reductn	0	0						0		0	0	
Reduced v/c Ratio	0.94	0.14						0.92		0.95	0.72	

Intersection Summary

Cycle Length: 89

Actuated Cycle Length: 89

Offset: 0 (0%), Referenced to phase 6:NBT and 2:SBTL, Start of Yellow

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.95

Intersection Signal Delay: 35.3

Intersection LOS: D

Intersection Capacity Utilization 79.4%

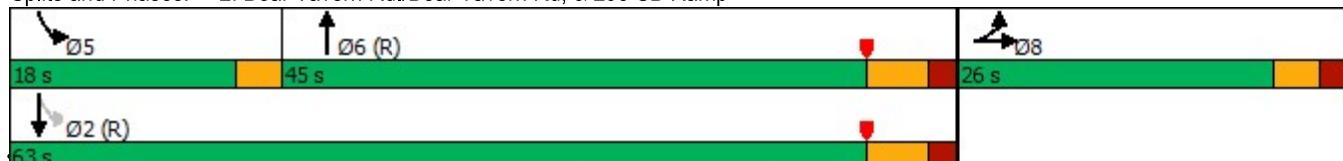
ICU Level of Service D

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 2: Bear Tavern Rd./Bear Tavern Rd, & 295 SB Ramp



Lanes, Volumes, Timings

Page 1



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	1	1	1		1	1
Traffic Volume (vph)	46	73	675	96	87	909
Future Volume (vph)	46	73	675	96	87	909
Satd. Flow (prot)	1745	1794	1697	0	1745	1733
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1745	1794	1697	0	1745	1733
Lane Group Flow (vph)	61	97	866	0	102	1069
Sign Control	Stop		Free			Free

Intersection Summary

Control Type: Unsignalized

Intersection Capacity Utilization 59.5% ICU Level of Service B

Analysis Period (min) 15

Intersection						
Int Delay, s/veh	10.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Vol, veh/h	46	73	675	96	87	909
Future Vol, veh/h	46	73	675	96	87	909
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	None
Storage Length	0	60	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	75	75	89	89	85	85
Heavy Vehicles, %	0	2	7	2	0	6
Mvmt Flow	61	97	758	108	102	1069
Major/Minor						
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	2085	812	0	0	866	0
Stage 1	812	-	-	-	-	-
Stage 2	1273	-	-	-	-	-
Critical Hdwy	6.4	6.22	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.318	-	-	2.2	-
Pot Cap-1 Maneuver	~ 59	379	-	-	786	-
Stage 1	440	-	-	-	-	-
Stage 2	266	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	~ 51	379	-	-	786	-
Mov Cap-2 Maneuver	~ 51	-	-	-	-	-
Stage 1	440	-	-	-	-	-
Stage 2	231	-	-	-	-	-
Approach						
Approach	WB	NB	SB			
HCM Control Delay, s	135.3	-	0	-	0.9	-
HCM LOS	F	-	-	-	-	-
Minor Lane/Major Mvmt						
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	51	379	786	-
HCM Lane V/C Ratio	-	-	1.203	0.257	0.13	-
HCM Control Delay (s)	-	\$	321.9	17.7	10.3	-
HCM Lane LOS	-	-	F	C	B	-
HCM 95th %tile Q(veh)	-	-	5.5	1	0.4	-
Notes						
~: Volume exceeds capacity	\$:	Delay exceeds 300s	+: Computation Not Defined	*:	All major volume in platoon	

TTN_Without Development 2035 AM_v1
4: Grand Ave./Bear Tavern Rd. & Upper Ferry Rd.

WO2035

AM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	1	2			1	2	1	2		1	2	
Traffic Volume (vph)	100	108	42	29	110	239	33	429	64	298	562	65
Future Volume (vph)	100	108	42	29	110	239	33	429	64	298	562	65
Satd. Flow (prot)	1601	1817	0	0	1605	1358	0	1986	0	1687	1889	0
Flt Permitted	0.617				0.909			0.997		0.950		
Satd. Flow (perm)	1036	1817	0	0	1474	1325	0	1986	0	1687	1889	0
Satd. Flow (RTOR)		22						8				
Lane Group Flow (vph)	112	168	0	0	158	272	0	599	0	339	713	0
Turn Type	Perm	NA		Perm	NA	Perm	Split	NA		Split	NA	
Protected Phases		8				4		6	6		2	2
Permitted Phases		8				4		4				
Total Split (s)	26.0	26.0		26.0	26.0	26.0	30.0	30.0		28.0	28.0	
Total Lost Time (s)	5.0	5.0			5.0	5.0		5.0		5.0	5.0	
Act Effct Green (s)	19.7	19.7			19.7	19.7		25.0		24.3	24.3	
Actuated g/C Ratio	0.23	0.23			0.23	0.23		0.30		0.29	0.29	
v/c Ratio	0.46	0.38			0.46	0.87		1.01		0.70	1.31	
Control Delay	34.0	25.6			31.9	59.6		69.3		36.3	179.9	
Queue Delay	0.0	0.0			0.0	0.0		0.0		0.0	0.0	
Total Delay	34.0	25.6			31.9	59.6		69.3		36.3	179.9	
LOS	C	C			C	E		E		D	F	
Approach Delay		29.0			49.4			69.3			133.6	
Approach LOS		C			D			E			F	
Queue Length 50th (ft)	50	63			70	136		~313		162	~505	
Queue Length 95th (ft)	99	116			124	#256		#513		#259	#692	
Internal Link Dist (ft)		683			502			646			1370	
Turn Bay Length (ft)					22							
Base Capacity (vph)	259	470			368	331		596		487	546	
Starvation Cap Reductn	0	0			0	0		0		0	0	
Spillback Cap Reductn	0	0			0	0		0		0	0	
Storage Cap Reductn	0	0			0	0		0		0	0	
Reduced v/c Ratio	0.43	0.36			0.43	0.82		1.01		0.70	1.31	

Intersection Summary

Cycle Length: 84

Actuated Cycle Length: 84

Offset: 0 (0%), Referenced to phase 2:SBTL, Start of Yellow

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.31

Intersection Signal Delay: 89.6

Intersection LOS: F

Intersection Capacity Utilization 98.4%

ICU Level of Service F

Analysis Period (min) 15

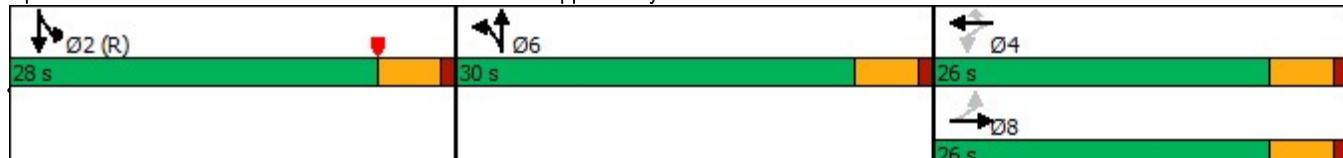
~ Volume exceeds capacity, queue is theoretically infinite.

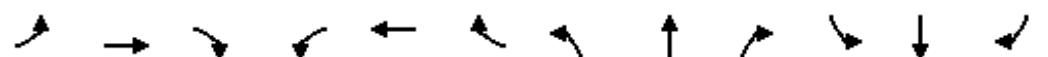
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 4: Grand Ave./Bear Tavern Rd. & Upper Ferry Rd.





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↓	↑		↓	↑	↑		↑↑			↑↑	
Traffic Volume (vph)	75	342	25	59	35	137	0	465	0	0	548	0
Future Volume (vph)	75	342	25	59	35	137	0	465	0	0	548	0
Satd. Flow (prot)	1671	1859	0	1419	1845	1545	0	3505	0	0	3505	0
Flt Permitted	0.728				0.269							
Satd. Flow (perm)	1281	1859	0	402	1845	1545	0	3505	0	0	3505	0
Satd. Flow (RTOR)				5		176						
Lane Group Flow (vph)	82	403	0	76	45	176	0	541	0	0	571	0
Turn Type	Perm	NA		Perm	NA	Perm		NA			NA	
Protected Phases			4			8			6		2	
Permitted Phases		4			8		8					
Total Split (s)	46.0	46.0		46.0	46.0	46.0		42.0			42.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0		7.0			7.0	
Act Effct Green (s)	25.0	25.0		25.0	25.0	25.0		50.0			50.0	
Actuated g/C Ratio	0.28	0.28		0.28	0.28	0.28		0.57			0.57	
v/c Ratio	0.23	0.76		0.67	0.09	0.31		0.27			0.29	
Control Delay	23.5	37.4		54.6	20.8	4.8		11.2			11.3	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0			0.0	
Total Delay	23.5	37.4		54.6	20.8	4.8		11.2			11.3	
LOS	C	D		D	C	A		B			B	
Approach Delay		35.0			20.0			11.2			11.3	
Approach LOS		D			B			B			B	
Queue Length 50th (ft)	35	201		37	18	0		74			79	
Queue Length 95th (ft)	61	263		66	32	25		124			138	
Internal Link Dist (ft)		230			119			322			532	
Turn Bay Length (ft)	100											
Base Capacity (vph)	582	847		182	838	798		1993			1993	
Starvation Cap Reductn	0	0		0	0	0		0			0	
Spillback Cap Reductn	0	0		0	0	0		0			0	
Storage Cap Reductn	0	0		0	0	0		0			0	
Reduced v/c Ratio	0.14	0.48		0.42	0.05	0.22		0.27			0.29	

Intersection Summary

Cycle Length: 88

Actuated Cycle Length: 88

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

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.76

Intersection Signal Delay: 18.7

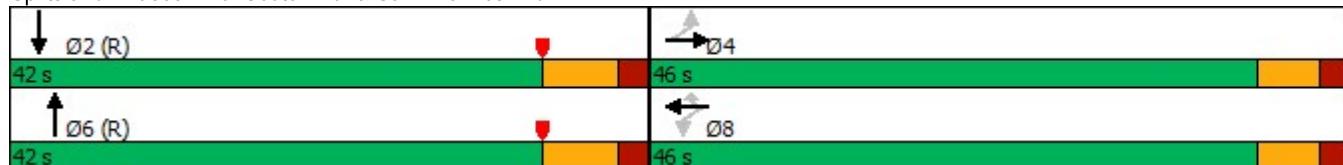
Intersection LOS: B

Intersection Capacity Utilization 56.3%

ICU Level of Service B

Analysis Period (min) 15

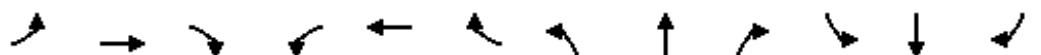
Splits and Phases: 5: Scotch Rd. & Sam Weinroth Rd.



TTN_Without Development 2035 AM_v1
6: Lockhead Ave./Scotch Rd. Ramp & Sam Weinroth Rd.

WO2035

AM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	112	2	2	34	0	2	0	3	327	12	69
Future Volume (vph)	0	112	2	2	34	0	2	0	3	327	12	69
Satd. Flow (prot)	0	1824	0	0	1912	0	0	1182	0	1865	1553	0
Flt Permitted					0.998			0.979		0.950		
Satd. Flow (perm)	0	1824	0	0	1912	0	0	1182	0	1865	1553	0
Lane Group Flow (vph)	0	140	0	0	40	0	0	7	0	367	91	0
Sign Control		Free			Free			Stop		Stop		

Intersection Summary

Control Type: Unsignalized

Intersection Capacity Utilization 37.5%

ICU Level of Service A

Analysis Period (min) 15

Intersection												
Int Delay, s/veh	9.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	112	2	2	34	0	2	0	3	327	12	69
Future Vol, veh/h	0	112	2	2	34	0	2	0	3	327	12	69
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	0	-	172
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	81	81	81	90	90	90	75	75	75	89	89	89
Heavy Vehicles, %	0	4	0	50	0	0	50	0	67	0	17	9
Mvmt Flow	0	138	2	2	38	0	3	0	4	367	13	78
Major/Minor												
Major1		Major2			Minor1			Minor2				
Conflicting Flow All	-	0	0	140	0	0	227	181	139	183	182	38
Stage 1	-	-	-	-	-	-	139	139	-	42	42	-
Stage 2	-	-	-	-	-	-	88	42	-	141	140	-
Critical Hdwy	-	-	-	4.6	-	-	7.6	6.5	6.87	7.1	6.67	6.29
Critical Hdwy Stg 1	-	-	-	-	-	-	6.6	5.5	-	6.1	5.67	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.6	5.5	-	6.1	5.67	-
Follow-up Hdwy	-	-	-	2.65	-	-	3.95	4	3.903	3.5	4.153	3.381
Pot Cap-1 Maneuver	0	-	-	1196	-	0	638	717	762	783	686	1014
Stage 1	0	-	-	-	-	0	762	785	-	978	831	-
Stage 2	0	-	-	-	-	0	814	864	-	867	753	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	1196	-	-	579	716	762	778	685	1014
Mov Cap-2 Maneuver	-	-	-	-	-	-	579	716	-	778	685	-
Stage 1	-	-	-	-	-	-	762	785	-	978	829	-
Stage 2	-	-	-	-	-	-	738	862	-	862	753	-
Approach												
EB			WB			NB			SB			
HCM Control Delay, s	0			0.4			10.4			12.8		
HCM LOS							B			B		
Minor Lane/Major Mvmt		NBLn1	EBT	EBR	WBL	WBT	SBLn1	SBLn2				
Capacity (veh/h)		676	-	-	1196	-	778	947				
HCM Lane V/C Ratio		0.01	-	-	0.002	-	0.472	0.096				
HCM Control Delay (s)		10.4	-	-	8	0	13.7	9.2				
HCM Lane LOS		B	-	-	A	A	B	A				
HCM 95th %tile Q(veh)		0	-	-	0	-	2.6	0.3				



Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑			↑↑	↑↑	
Traffic Volume (vph)	342	0	0	206	25	137
Future Volume (vph)	342	0	0	206	25	137
Satd. Flow (prot)	1881	0	0	3610	1893	0
Flt Permitted					0.992	
Satd. Flow (perm)	1881	0	0	3610	1893	0
Lane Group Flow (vph)	376	0	0	264	205	0
Sign Control	Free			Free	Stop	

Intersection Summary

Control Type: Unsignalized

Intersection Capacity Utilization 34.5%

ICU Level of Service A

Analysis Period (min) 15

Intersection						
Int Delay, s/veh	3.2					
Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑			↑↑	Y	
Traffic Vol, veh/h	342	0	0	206	25	137
Future Vol, veh/h	342	0	0	206	25	137
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	91	91	78	78	79	79
Heavy Vehicles, %	1	0	0	0	0	0
Mvmt Flow	376	0	0	264	32	173
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	-	-	-	508	376
Stage 1	-	-	-	-	376	-
Stage 2	-	-	-	-	132	-
Critical Hdwy	-	-	-	-	6.6	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	-	0	0	-	514	675
Stage 1	-	0	0	-	699	-
Stage 2	-	0	0	-	886	-
Platoon blocked, %	-					
Mov Cap-1 Maneuver	-	-	-	-	514	675
Mov Cap-2 Maneuver	-	-	-	-	514	-
Stage 1	-	-	-	-	699	-
Stage 2	-	-	-	-	886	-
Approach	EB	WB	NE			
HCM Control Delay, s	0	0	13.2			
HCM LOS			B			
Minor Lane/Major Mvmt	NELn1	EBT	WBT			
Capacity (veh/h)	644	-	-			
HCM Lane V/C Ratio	0.318	-	-			
HCM Control Delay (s)	13.2	-	-			
HCM Lane LOS	B	-	-			
HCM 95th %tile Q(veh)	1.4	-	-			



Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	320	0	0	0	0	269
Future Volume (vph)	320	0	0	0	0	269
Satd. Flow (prot)	2091	0	0	0	0	1725
Flt Permitted						
Satd. Flow (perm)	2091	0	0	0	0	1725
Lane Group Flow (vph)	364	0	0	0	0	302
Sign Control	Free		Free	Free		

Intersection Summary

Control Type: Unsignalized

Intersection Capacity Utilization 40.2%

ICU Level of Service A

Analysis Period (min) 15



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			↑	↑		↑
Traffic Volume (vph)	0	0	543	269	0	995
Future Volume (vph)	0	0	543	269	0	995
Satd. Flow (prot)	0	0	1759	1495	0	1776
Flt Permitted						
Satd. Flow (perm)	0	0	1759	1495	0	1776
Lane Group Flow (vph)	0	0	714	354	0	1131
Sign Control	Free		Free			Free
Intersection Summary						
Control Type: Unsignalized						
Intersection Capacity Utilization 55.7%	ICU Level of Service B					
Analysis Period (min) 15						



Lane Group	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations						
Traffic Volume (vph)	0	677	548	408	0	0
Future Volume (vph)	0	677	548	408	0	0
Satd. Flow (prot)	0	3505	4773	0	0	0
Flt Permitted						
Satd. Flow (perm)	0	3505	4773	0	0	0
Lane Group Flow (vph)	0	787	996	0	0	0
Sign Control		Free	Free		Free	

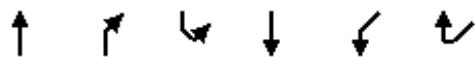
Intersection Summary

Control Type: Unsignalized

Intersection Capacity Utilization 23.1%

ICU Level of Service A

Analysis Period (min) 15



Lane Group	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations	↑	↗	↖	↓	↖	↑
Traffic Volume (vph)	465	162	0	632	0	0
Future Volume (vph)	465	162	0	632	0	0
Satd. Flow (prot)	3394	0	0	3505	0	0
Flt Permitted						
Satd. Flow (perm)	3394	0	0	3505	0	0
Lane Group Flow (vph)	729	0	0	658	0	0
Sign Control	Free			Free	Free	

Intersection Summary

Control Type: Unsignalized

Intersection Capacity Utilization 21.4%

ICU Level of Service A

Analysis Period (min) 15

TTN_Without Development 2035 PM_v0
2: Bear Tavern Rd./Bear Tavern Rd, & 295 SB Ramp

WO2035

PM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	205	0	171	0	0	0	0	683	0	355	618	0
Future Volume (vph)	205	0	171	0	0	0	0	683	0	355	618	0
Satd. Flow (prot)	0	2006	1812	0	0	0	0	1881	0	1694	1987	0
Flt Permitted											0.172	
Satd. Flow (perm)	0	2006	1812	0	0	0	0	1881	0	307	1987	0
Satd. Flow (RTOR)			169									
Lane Group Flow (vph)	0	230	192	0	0	0	0	734	0	403	702	0
Turn Type	Split	NA	Free					NA		pm+pt	NA	
Protected Phases	8	8						6		5	2	
Permitted Phases			Free							2		
Total Split (s)	25.0	25.0						46.0		18.0	64.0	
Total Lost Time (s)		5.0						6.0		3.0	6.0	
Act Effct Green (s)	14.5	89.0						45.5		66.5	63.5	
Actuated g/C Ratio	0.16	1.00						0.51		0.75	0.71	
v/c Ratio	0.71	0.11						0.76		0.87	0.50	
Control Delay	46.7	0.1						32.1		34.3	7.8	
Queue Delay	0.0	0.0						0.0		0.0	0.0	
Total Delay	46.7	0.1						32.1		34.3	7.8	
LOS	D	A						C		C	A	
Approach Delay	25.5							32.1			17.4	
Approach LOS	C							C			B	
Queue Length 50th (ft)	124	0						362		106	147	
Queue Length 95th (ft)	184	0						m397		#278	263	
Internal Link Dist (ft)	715		3					143			335	
Turn Bay Length (ft)		100								163		
Base Capacity (vph)	450	1812						962		463	1418	
Starvation Cap Reductn	0	0						0		0	0	
Spillback Cap Reductn	0	0						0		0	0	
Storage Cap Reductn	0	0						0		0	0	
Reduced v/c Ratio	0.51	0.11						0.76		0.87	0.50	

Intersection Summary

Cycle Length: 89

Actuated Cycle Length: 89

Offset: 0 (0%), Referenced to phase 6:NBT and 2:SBTL, Start of Yellow

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.87

Intersection Signal Delay: 23.7

Intersection LOS: C

Intersection Capacity Utilization 79.5%

ICU Level of Service D

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Bear Tavern Rd./Bear Tavern Rd, & 295 SB Ramp





Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↑	↑	↑		↑	↑
Traffic Volume (vph)	79	110	837	68	101	640
Future Volume (vph)	79	110	837	68	101	640
Satd. Flow (prot)	1745	1812	1769	0	1745	1783
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1745	1812	1769	0	1745	1783
Lane Group Flow (vph)	105	147	973	0	115	727
Sign Control	Stop		Free			Free

Intersection Summary

Control Type: Unsignalized

Intersection Capacity Utilization 68.1% ICU Level of Service C

Analysis Period (min) 15

Intersection						
Int Delay, s/veh	24.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Vol, veh/h	79	110	837	68	101	640
Future Vol, veh/h	79	110	837	68	101	640
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	None
Storage Length	0	60	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	75	75	93	93	88	88
Heavy Vehicles, %	0	1	3	0	0	3
Mvmt Flow	105	147	900	73	115	727
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	1894	937	0	0	973	0
Stage 1	937	-	-	-	-	-
Stage 2	957	-	-	-	-	-
Critical Hdwy	6.4	6.21	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.309	-	-	2.2	-
Pot Cap-1 Maneuver	~ 78	322	-	-	717	-
Stage 1	384	-	-	-	-	-
Stage 2	376	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	~ 66	322	-	-	717	-
Mov Cap-2 Maneuver	~ 66	-	-	-	-	-
Stage 1	384	-	-	-	-	-
Stage 2	316	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	195.5	0		1.5		
HCM LOS	F					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	66	322	717	-
HCM Lane V/C Ratio	-	-	1.596	0.455	0.16	-
HCM Control Delay (s)	-	\$ 432.7	25.2	11	-	-
HCM Lane LOS	-	-	F	D	B	-
HCM 95th %tile Q(veh)	-	-	9.2	2.3	0.6	-
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

TTN_Without Development 2035 PM_v0
4: Grand Ave./Bear Tavern Rd. & Upper Ferry Rd.

WO2035

PM Peak

	↙	→	↘	↖	←	↗	↑	↗	↘	↓	↖	
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↗	↖ ↗			↖ ↗	↖ ↗	↖ ↗	↖ ↗		↖ ↗	↖ ↗	
Traffic Volume (vph)	70	142	38	38	233	336	33	512	38	250	336	88
Future Volume (vph)	70	142	38	38	233	336	33	512	38	250	336	88
Satd. Flow (prot)	1694	1821	0	0	1717	1478	0	2068	0	1752	1940	0
Flt Permitted	0.426				0.930			0.997		0.950		
Satd. Flow (perm)	759	1821	0	0	1608	1446	0	2068	0	1752	1940	0
Satd. Flow (RTOR)			16						4			
Lane Group Flow (vph)	83	214	0	0	288	357	0	671	0	269	456	0
Turn Type	Perm	NA		Perm	NA	Perm	Split	NA		Split	NA	
Protected Phases		8				4		6	6		2	2
Permitted Phases		8				4		4				
Total Split (s)	35.0	35.0		35.0	35.0	35.0	31.0	31.0		23.0	23.0	
Total Lost Time (s)	5.0	5.0			5.0	5.0		5.0		5.0	5.0	
Act Effct Green (s)	26.0	26.0			26.0	26.0		26.0		22.0	22.0	
Actuated g/C Ratio	0.29	0.29			0.29	0.29		0.29		0.25	0.25	
v/c Ratio	0.38	0.39			0.61	0.85		1.11		0.62	0.95	
Control Delay	28.9	24.5			32.5	48.0		101.2		43.3	71.0	
Queue Delay	0.0	0.0			0.0	0.0		0.0		0.0	0.0	
Total Delay	28.9	24.5			32.5	48.0		101.2		43.3	71.0	
LOS	C	C			C	D		F		D	E	
Approach Delay		25.7			41.0			101.2			60.7	
Approach LOS		C			D			F			E	
Queue Length 50th (ft)	36	85			134	181		~434		159	~292	
Queue Length 95th (ft)	69	129			208	#303		#614		#268	#507	
Internal Link Dist (ft)		683			502			646			1370	
Turn Bay Length (ft)					22							
Base Capacity (vph)	255	624			542	487		606		432	479	
Starvation Cap Reductn	0	0			0	0		0		0	0	
Spillback Cap Reductn	0	0			0	0		0		0	0	
Storage Cap Reductn	0	0			0	0		0		0	0	
Reduced v/c Ratio	0.33	0.34			0.53	0.73		1.11		0.62	0.95	

Intersection Summary

Cycle Length: 89

Actuated Cycle Length: 89

Offset: 0 (0%), Referenced to phase 2:SBTL, Start of Yellow

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.11

Intersection Signal Delay: 62.5

Intersection LOS: E

Intersection Capacity Utilization 97.6%

ICU Level of Service F

Analysis Period (min) 15

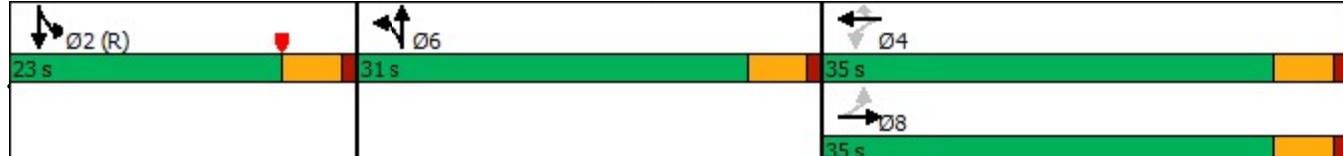
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 4: Grand Ave./Bear Tavern Rd. & Upper Ferry Rd.



5: Scotch Rd. & Sam Weinroth Rd.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑	↑		↑	↑	↑	↑	↑		↑	↑	
Traffic Volume (vph)	107	47	49	127	40	294	0	522	0	0	602	0
Future Volume (vph)	107	47	49	127	40	294	0	522	0	0	602	0
Satd. Flow (prot)	1770	1664	0	1745	1900	1669	0	3574	0	0	3539	0
Flt Permitted	0.722				0.679							
Satd. Flow (perm)	1345	1664	0	1247	1900	1669	0	3574	0	0	3539	0
Satd. Flow (RTOR)						232						
Lane Group Flow (vph)	135	121	0	169	53	392	0	607	0	0	647	0
Turn Type	Perm	NA		Perm	NA	Perm		NA			NA	
Protected Phases			4			8		6			2	
Permitted Phases		4			8		8					
Total Split (s)	36.0	36.0		36.0	36.0	36.0		52.0			52.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0		7.0			7.0	
Act Effct Green (s)	17.9	17.9		17.9	17.9	17.9		57.1			57.1	
Actuated g/C Ratio	0.20	0.20		0.20	0.20	0.20		0.65			0.65	
v/c Ratio	0.49	0.31		0.67	0.14	0.75		0.26			0.28	
Control Delay	35.6	16.2		44.0	26.6	21.6		7.8			7.9	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0			0.0	
Total Delay	35.6	16.2		44.0	26.6	21.6		7.8			7.9	
LOS	D	B		D	C	C		A			A	
Approach Delay		26.4			28.2			7.8			7.9	
Approach LOS		C			C			A			A	
Queue Length 50th (ft)	67	27		87	24	80		67			72	
Queue Length 95th (ft)	92	52		109	40	102		114			131	
Internal Link Dist (ft)		230			119			322			532	
Turn Bay Length (ft)	100											
Base Capacity (vph)	458	608		425	647	721		2318			2295	
Starvation Cap Reductn	0	0		0	0	0		0			0	
Spillback Cap Reductn	0	0		0	0	0		0			0	
Storage Cap Reductn	0	0		0	0	0		0			0	
Reduced v/c Ratio	0.29	0.20		0.40	0.08	0.54		0.26			0.28	

Intersection Summary

Cycle Length: 88

Actuated Cycle Length: 88

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

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 16.0

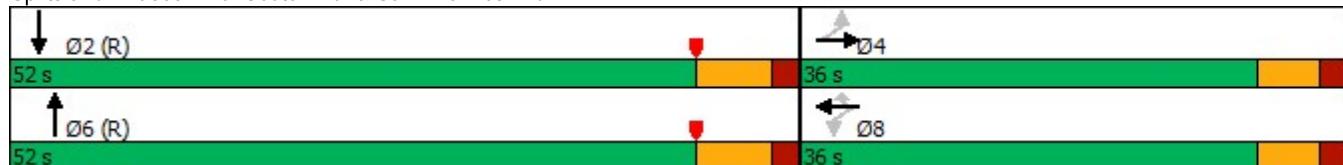
Intersection LOS: B

Intersection Capacity Utilization 54.4%

ICU Level of Service A

Analysis Period (min) 15

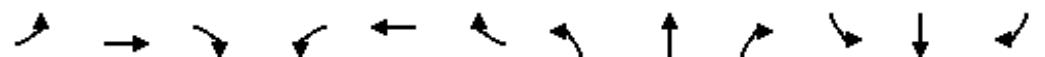
Splits and Phases: 5: Scotch Rd. & Sam Weinroth Rd.



TTN_Without Development 2035 PM_v0
6: Lockhead Ave./Scotch Rd. Ramp & Sam Weinroth Rd.

WO2035

PM Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	136	2	1	46	0	2	0	12	55	1	69
Future Volume (vph)	0	136	2	1	46	0	2	0	12	55	1	69
Satd. Flow (prot)	0	1878	0	0	1961	0	0	1721	0	1711	1625	0
Flt Permitted					0.999			0.992		0.950		
Satd. Flow (perm)	0	1878	0	0	1961	0	0	1721	0	1711	1625	0
Lane Group Flow (vph)	0	184	0	0	56	0	0	19	0	60	76	0
Sign Control		Free			Free			Stop		Stop		

Intersection Summary

Control Type: Unsignalized

Intersection Capacity Utilization 23.7%

ICU Level of Service A

Analysis Period (min) 15

Intersection												
Int Delay, s/veh	3.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	136	2	1	46	0	2	0	12	55	1	69
Future Vol, veh/h	0	136	2	1	46	0	2	0	12	55	1	69
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	0	-	172
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	84	84	84	75	75	75	92	92	92
Heavy Vehicles, %	0	1	0	0	0	0	0	0	8	9	0	3
Mvmt Flow	0	181	3	1	55	0	3	0	16	60	1	75
Major/Minor												
Major1		Major2			Minor1			Minor2				
Conflicting Flow All	-	0	0	184	0	0	278	240	183	248	241	55
Stage 1	-	-	-	-	-	-	183	183	-	57	57	-
Stage 2	-	-	-	-	-	-	95	57	-	191	184	-
Critical Hdwy	-	-	-	4.1	-	-	7.1	6.5	6.28	7.19	6.5	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.19	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.19	5.5	-
Follow-up Hdwy	-	-	-	2.2	-	-	3.5	4	3.372	3.581	4	3.327
Pot Cap-1 Maneuver	0	-	-	1403	-	0	678	665	844	691	664	1009
Stage 1	0	-	-	-	-	0	823	752	-	938	851	-
Stage 2	0	-	-	-	-	0	917	851	-	795	751	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	1403	-	-	626	664	844	677	663	1009
Mov Cap-2 Maneuver	-	-	-	-	-	-	626	664	-	677	663	-
Stage 1	-	-	-	-	-	-	823	752	-	938	850	-
Stage 2	-	-	-	-	-	-	847	850	-	780	751	-
Approach												
EB		WB			NB			SB				
HCM Control Delay, s	0			0.2			9.6			9.7		
HCM LOS							A			A		
Minor Lane/Major Mvmt												
NBLn1		EBT	EBR	WBL	WBT	WBR	NBL	SBLn1	SBLn2			
Capacity (veh/h)	804	-	-	1403	-	-	677	1002				
HCM Lane V/C Ratio	0.023	-	-	0.001	-	-	0.088	0.076				
HCM Control Delay (s)	9.6	-	-	7.6	0	10.8	8.9					
HCM Lane LOS	A	-	-	A	A	B	A					
HCM 95th %tile Q(veh)	0.1	-	-	0	-	0.3	0.2					



Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑			↑↑	↑	
Traffic Volume (vph)	47	0	0	432	29	41
Future Volume (vph)	47	0	0	432	29	41
Satd. Flow (prot)	1712	0	0	3610	1944	0
Flt Permitted					0.980	
Satd. Flow (perm)	1712	0	0	3610	1944	0
Lane Group Flow (vph)	59	0	0	576	94	0
Sign Control	Free			Free	Stop	

Intersection Summary

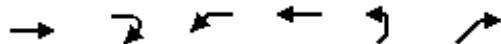
Control Type: Unsignalized

Intersection Capacity Utilization 22.7%

ICU Level of Service A

Analysis Period (min) 15

Intersection						
Int Delay, s/veh	1.3					
Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑			↑↑	Y	
Traffic Vol, veh/h	47	0	0	432	29	41
Future Vol, veh/h	47	0	0	432	29	41
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	79	79	75	75	75	75
Heavy Vehicles, %	11	0	0	0	0	0
Mvmt Flow	59	0	0	576	39	55
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	-	-	-	347	59
Stage 1	-	-	-	-	59	-
Stage 2	-	-	-	-	288	-
Critical Hdwy	-	-	-	-	6.6	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	-	0	0	-	641	1012
Stage 1	-	0	0	-	969	-
Stage 2	-	0	0	-	741	-
Platoon blocked, %	-					
Mov Cap-1 Maneuver	-	-	-	-	641	1012
Mov Cap-2 Maneuver	-	-	-	-	641	-
Stage 1	-	-	-	-	969	-
Stage 2	-	-	-	-	741	-
Approach	EB	WB	NE			
HCM Control Delay, s	0	0	10			
HCM LOS			B			
Minor Lane/Major Mvmt	NELn1	EBT	WBT			
Capacity (veh/h)	816	-	-			
HCM Lane V/C Ratio	0.114	-	-			
HCM Control Delay (s)	10	-	-			
HCM Lane LOS	B	-	-			
HCM 95th %tile Q(veh)	0.4	-	-			



Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑				↑	
Traffic Volume (vph)	355	0	0	0	0	282
Future Volume (vph)	355	0	0	0	0	282
Satd. Flow (prot)	2091	0	0	0	0	1808
Flt Permitted						
Satd. Flow (perm)	2091	0	0	0	0	1808
Lane Group Flow (vph)	403	0	0	0	0	332
Sign Control	Free		Free	Free		

Intersection Summary

Control Type: Unsignalized

Intersection Capacity Utilization 42.8%

ICU Level of Service A

Analysis Period (min) 15



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			↑	↑		↑
Traffic Volume (vph)	0	0	683	282	0	789
Future Volume (vph)	0	0	683	282	0	789
Satd. Flow (prot)	0	0	1881	1568	0	1863
Flt Permitted						
Satd. Flow (perm)	0	0	1881	1568	0	1863
Lane Group Flow (vph)	0	0	734	303	0	897
Sign Control	Free		Free			Free

Intersection Summary

Control Type: Unsignalized

Intersection Capacity Utilization 44.9%

ICU Level of Service A

Analysis Period (min) 15



Lane Group	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations		↑↑	↑↑↑			
Traffic Volume (vph)	0	923	602	125	0	0
Future Volume (vph)	0	923	602	125	0	0
Satd. Flow (prot)	0	3574	4970	0	0	0
Flt Permitted						
Satd. Flow (perm)	0	3574	4970	0	0	0
Lane Group Flow (vph)	0	1073	781	0	0	0
Sign Control		Free	Free		Free	

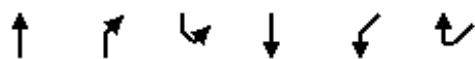
Intersection Summary

Control Type: Unsignalized

Intersection Capacity Utilization 28.8%

ICU Level of Service A

Analysis Period (min) 15



Lane Group	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations	↑↓			↑↑		
Traffic Volume (vph)	522	70	0	778	0	0
Future Volume (vph)	522	70	0	778	0	0
Satd. Flow (prot)	3514	0	0	3539	0	0
Flt Permitted						
Satd. Flow (perm)	3514	0	0	3539	0	0
Lane Group Flow (vph)	688	0	0	837	0	0
Sign Control	Free			Free	Free	

Intersection Summary

Control Type: Unsignalized

Intersection Capacity Utilization 24.8%

ICU Level of Service A

Analysis Period (min) 15

TTN_Without Development 2035SAT_v0
2: Bear Tavern Rd./Bear Tavern Rd, & 295 SB Ramp

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SAT Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	219	0	127	0	0	0	0	466	0	141	466	0
Future Volume (vph)	219	0	127	0	0	0	0	466	0	141	466	0
Satd. Flow (prot)	0	1948	1812	0	0	0	0	1863	0	1728	2007	0
Flt Permitted												0.295
Satd. Flow (perm)	0	1948	1812	0	0	0	0	1863	0	536	2007	0
Satd. Flow (RTOR)												135
Lane Group Flow (vph)	0	274	159	0	0	0	0	621	0	147	485	0
Turn Type	Split	NA	Free					NA		pm+pt	NA	
Protected Phases	8	8						6		5	2	
Permitted Phases			Free								2	
Total Split (s)	25.0	25.0						46.0		18.0	64.0	
Total Lost Time (s)		5.0						6.0		3.0	6.0	
Act Effct Green (s)	16.2	89.0						51.2		64.8	61.8	
Actuated g/C Ratio	0.18	1.00						0.58		0.73	0.69	
v/c Ratio	0.77	0.09						0.58		0.30	0.35	
Control Delay	49.4	0.1						15.8		5.8	6.8	
Queue Delay	0.0	0.0						0.0		0.0	0.0	
Total Delay	49.4	0.1						15.8		5.8	6.8	
LOS	D	A						B		A	A	
Approach Delay	31.3							15.8			6.6	
Approach LOS	C							B			A	
Queue Length 50th (ft)	147	0						206		21	97	
Queue Length 95th (ft)	192	0						265		44	165	
Internal Link Dist (ft)	715		3					143			335	
Turn Bay Length (ft)		100									163	
Base Capacity (vph)	437	1812						1072		591	1393	
Starvation Cap Reductn	0	0						0		0	0	
Spillback Cap Reductn	0	0						0		0	0	
Storage Cap Reductn	0	0						0		0	0	
Reduced v/c Ratio	0.63	0.09						0.58		0.25	0.35	

Intersection Summary

Cycle Length: 89

Actuated Cycle Length: 89

Offset: 0 (0%), Referenced to phase 6:NBT and 2:SBTL, Start of Yellow

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.77

Intersection Signal Delay: 16.3

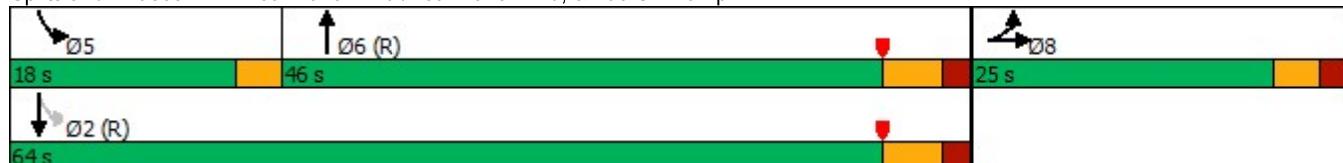
Intersection LOS: B

Intersection Capacity Utilization 57.0%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 2: Bear Tavern Rd./Bear Tavern Rd, & 295 SB Ramp





Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↑	↑	↑		↑	↑
Traffic Volume (vph)	27	57	544	36	53	536
Future Volume (vph)	27	57	544	36	53	536
Satd. Flow (prot)	1745	1830	1786	0	1745	1818
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1745	1830	1786	0	1745	1818
Lane Group Flow (vph)	36	76	651	0	56	570
Sign Control	Stop		Free			Free

Intersection Summary

Control Type: Unsignalized

Intersection Capacity Utilization 47.5%

ICU Level of Service A

Analysis Period (min) 15

Intersection						
Int Delay, s/veh	2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Vol, veh/h	27	57	544	36	53	536
Future Vol, veh/h	27	57	544	36	53	536
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	None
Storage Length	0	60	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	75	75	89	89	94	94
Heavy Vehicles, %	0	0	2	2	0	1
Mvmt Flow	36	76	611	40	56	570
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	1313	631	0	0	651	0
Stage 1	631	-	-	-	-	-
Stage 2	682	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	176	485	-	-	945	-
Stage 1	534	-	-	-	-	-
Stage 2	506	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	166	485	-	-	945	-
Mov Cap-2 Maneuver	166	-	-	-	-	-
Stage 1	534	-	-	-	-	-
Stage 2	476	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	19.8	0		0.8		
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	166	485	945	-
HCM Lane V/C Ratio	-	-	0.217	0.157	0.06	-
HCM Control Delay (s)	-	-	32.6	13.8	9.1	-
HCM Lane LOS	-	-	D	B	A	-
HCM 95th %tile Q(veh)	-	-	0.8	0.6	0.2	-

TTN_Without Development 2035SAT_v0
4: Grand Ave./Bear Tavern Rd. & Upper Ferry Rd.

WO2035

SAT Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	1	1			1	1		1		1	1	
Traffic Volume (vph)	70	121	36	51	158	251	20	248	54	214	256	74
Future Volume (vph)	70	121	36	51	158	251	20	248	54	214	256	74
Satd. Flow (prot)	1728	1868	0	0	1735	1507	0	2050	0	1787	1938	0
Flt Permitted	0.511				0.877			0.997		0.950		
Satd. Flow (perm)	929	1868	0	0	1540	1507	0	2050	0	1787	1938	0
Satd. Flow (RTOR)			20						11			
Lane Group Flow (vph)	81	183	0	0	216	259	0	380	0	240	371	0
Turn Type	Perm	NA		Perm	NA	Perm	Split	NA		Split	NA	
Protected Phases		8				4		6	6		2	2
Permitted Phases	8			4		4						
Total Split (s)	36.0	36.0		36.0	36.0	36.0	24.0	24.0		24.0	24.0	
Total Lost Time (s)	5.0	5.0			5.0	5.0		5.0		5.0	5.0	
Act Effct Green (s)	20.4	20.4			20.4	20.4		17.9		30.6	30.6	
Actuated g/C Ratio	0.24	0.24			0.24	0.24		0.21		0.36	0.36	
v/c Ratio	0.36	0.39			0.58	0.71		0.85		0.37	0.52	
Control Delay	29.4	24.9			33.5	39.3		50.0		23.8	26.5	
Queue Delay	0.0	0.0			0.0	0.0		0.0		0.0	0.0	
Total Delay	29.4	24.9			33.5	39.3		50.0		23.8	26.5	
LOS	C	C			C	D		D		C	C	
Approach Delay		26.3			36.6			50.0			25.4	
Approach LOS		C			D			D			C	
Queue Length 50th (ft)	36	72			101	126		185		92	153	
Queue Length 95th (ft)	64	107			150	183		#292		176	#273	
Internal Link Dist (ft)		683			502			646			1370	
Turn Bay Length (ft)					22							
Base Capacity (vph)	342	702			568	556		472		651	707	
Starvation Cap Reductn	0	0			0	0		0		0	0	
Spillback Cap Reductn	0	0			0	0		0		0	0	
Storage Cap Reductn	0	0			0	0		0		0	0	
Reduced v/c Ratio	0.24	0.26			0.38	0.47		0.81		0.37	0.52	

Intersection Summary

Cycle Length: 84

Actuated Cycle Length: 84

Offset: 0 (0%), Referenced to phase 2:SBTL, Start of Yellow

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.85

Intersection Signal Delay: 34.0

Intersection LOS: C

Intersection Capacity Utilization 75.7%

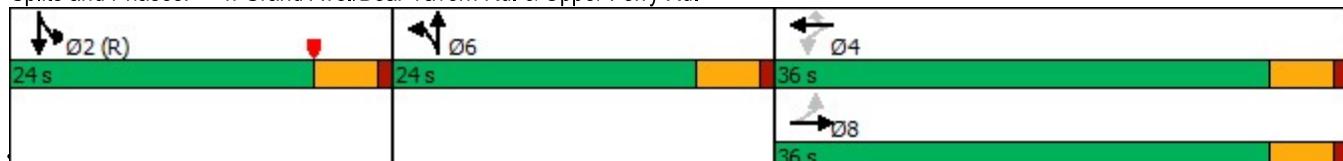
ICU Level of Service D

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 4: Grand Ave./Bear Tavern Rd. & Upper Ferry Rd.



Lanes, Volumes, Timings

Page 4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑	↑		↑	↑	↑		↑			↑	↑
Traffic Volume (vph)	37	8	28	9	16	16	0	364	0	0	340	0
Future Volume (vph)	37	8	28	9	16	16	0	364	0	0	340	0
Satd. Flow (prot)	1805	1678	0	1745	1900	1669	0	3574	0	0	3539	0
Flt Permitted	0.744				0.728							
Satd. Flow (perm)	1414	1678	0	1337	1900	1669	0	3574	0	0	3539	0
Satd. Flow (RTOR)				35		50						
Lane Group Flow (vph)	47	45	0	12	21	21	0	396	0	0	410	0
Turn Type	Perm	NA		Perm	NA	Perm		NA			NA	
Protected Phases			4			8			6			2
Permitted Phases		4			8		8					
Total Split (s)	36.0	36.0		36.0	36.0	36.0		52.0			52.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0		7.0			7.0	
Act Effct Green (s)	8.8	8.8		8.8	8.8	8.8		70.2			70.2	
Actuated g/C Ratio	0.10	0.10		0.10	0.10	0.10		0.80			0.80	
v/c Ratio	0.34	0.23		0.09	0.11	0.10		0.14			0.15	
Control Delay	42.8	18.7		36.2	36.2	3.4		3.0			3.1	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0			0.0	
Total Delay	42.8	18.7		36.2	36.2	3.4		3.0			3.1	
LOS	D	B		D	D	A		A			A	
Approach Delay		31.0			23.5			3.0			3.1	
Approach LOS		C			C			A			A	
Queue Length 50th (ft)	25	5		6	11	0		24			25	
Queue Length 95th (ft)	49	29		18	26	1		44			41	
Internal Link Dist (ft)		230			119			322			532	
Turn Bay Length (ft)	100											
Base Capacity (vph)	482	595		455	647	601		2852			2824	
Starvation Cap Reductn	0	0		0	0	0		0			0	
Spillback Cap Reductn	0	0		0	0	0		0			0	
Storage Cap Reductn	0	0		0	0	0		0			0	
Reduced v/c Ratio	0.10	0.08		0.03	0.03	0.03		0.14			0.15	

Intersection Summary

Cycle Length: 88

Actuated Cycle Length: 88

Offset: 45 (51%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.34

Intersection Signal Delay: 6.9

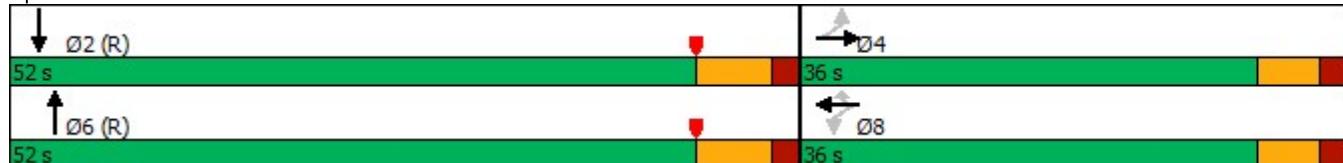
Intersection LOS: A

Intersection Capacity Utilization 40.0%

ICU Level of Service A

Analysis Period (min) 15

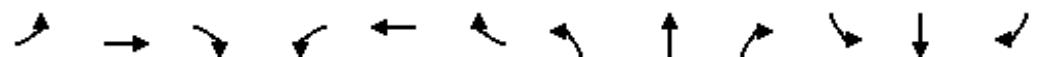
Splits and Phases: 5: Scotch Rd. & Sam Weinroth Rd.



TTN_Without Development 2035SAT_v0
6: Lockhead Ave./Scotch Rd. Ramp & Sam Weinroth Rd.

WO2035

SAT Peak



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑			↑			↑		↑	↑	
Traffic Volume (vph)	0	58	1	1	20	0	0	0	1	13	2	36
Future Volume (vph)	0	58	1	1	20	0	0	0	1	13	2	36
Satd. Flow (prot)	0	1896	0	0	1959	0	0	1808	0	1865	1596	0
Flt Permitted					0.998					0.950		
Satd. Flow (perm)	0	1896	0	0	1959	0	0	1808	0	1865	1596	0
Lane Group Flow (vph)	0	71	0	0	24	0	0	1	0	17	51	0
Sign Control		Free			Free			Stop		Stop		

Intersection Summary

Control Type: Unsignalized

Intersection Capacity Utilization 17.4%

ICU Level of Service A

Analysis Period (min) 15

Intersection													
Int Delay, s/veh	3.8												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↑			↑		↑	↓		↑	↑		
Traffic Vol, veh/h	0	58	1	1	20	0	0	0	1	13	2	36	
Future Vol, veh/h	0	58	1	1	20	0	0	0	1	13	2	36	
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop	
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None	
Storage Length	-	-	-	-	-	-	-	-	-	0	-	172	
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-	
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-	
Peak Hour Factor	83	83	83	88	88	88	75	75	75	75	75	75	
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	6	
Mvmt Flow	0	70	1	1	23	0	0	0	1	17	3	48	
Major/Minor													
Major1		Major2			Minor1			Minor2					
Conflicting Flow All	-	0	0	71	0	0	122	96	71	96	96	23	
Stage 1	-	-	-	-	-	-	71	71	-	25	25	-	
Stage 2	-	-	-	-	-	-	51	25	-	71	71	-	
Critical Hdwy	-	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.26	
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-	
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-	
Follow-up Hdwy	-	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.354	
Pot Cap-1 Maneuver	0	-	-	1542	-	0	858	798	997	891	798	1042	
Stage 1	0	-	-	-	-	0	944	840	-	998	878	-	
Stage 2	0	-	-	-	-	0	967	878	-	944	840	-	
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-	
Mov Cap-1 Maneuver	-	-	-	1542	-	-	816	797	997	889	797	1042	
Mov Cap-2 Maneuver	-	-	-	-	-	-	816	797	-	889	797	-	
Stage 1	-	-	-	-	-	-	944	840	-	998	877	-	
Stage 2	-	-	-	-	-	-	919	877	-	943	840	-	
Approach													
EB		WB			NB			SB					
HCM Control Delay, s	0		0.3			8.6			8.8				
HCM LOS						A			A				
Minor Lane/Major Mvmt		NBLn1	EBT	EBR	WBL	WBT	SBLn1	SBLn2					
Capacity (veh/h)	997		-	-	1542	-	889	1025					
HCM Lane V/C Ratio	0.001		-	-	0.001	-	0.019	0.049					
HCM Control Delay (s)	8.6		-	-	7.3	0	9.1	8.7					
HCM Lane LOS	A		-	-	A	A	A	A					
HCM 95th %tile Q(veh)	0		-	-	0	-	0.1	0.2					



Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑			↑↑	↑	
Traffic Volume (vph)	8	0	0	28	13	15
Future Volume (vph)	8	0	0	28	13	15
Satd. Flow (prot)	1900	0	0	3610	1952	0
Flt Permitted					0.978	
Satd. Flow (perm)	1900	0	0	3610	1952	0
Lane Group Flow (vph)	10	0	0	37	37	0
Sign Control	Free			Free	Stop	

Intersection Summary

Control Type: Unsignalized

Intersection Capacity Utilization 13.3%

ICU Level of Service A

Analysis Period (min) 15

Intersection						
Int Delay, s/veh	3.8					
Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations	↑			↑↑	Y	
Traffic Vol, veh/h	8	0	0	28	13	15
Future Vol, veh/h	8	0	0	28	13	15
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	79	79	75	75	75	75
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	10	0	0	37	17	20
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	-	-	-	29	10
Stage 1	-	-	-	-	10	-
Stage 2	-	-	-	-	19	-
Critical Hdwy	-	-	-	-	6.6	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	-	0	0	-	989	1077
Stage 1	-	0	0	-	1018	-
Stage 2	-	0	0	-	1007	-
Platoon blocked, %	-					
Mov Cap-1 Maneuver	-	-	-	-	989	1077
Mov Cap-2 Maneuver	-	-	-	-	989	-
Stage 1	-	-	-	-	1018	-
Stage 2	-	-	-	-	1007	-
Approach	EB	WB	NE			
HCM Control Delay, s	0	0	8.6			
HCM LOS			A			
Minor Lane/Major Mvmt	NELn1	EBT	WBT			
Capacity (veh/h)	1034	-	-			
HCM Lane V/C Ratio	0.036	-	-			
HCM Control Delay (s)	8.6	-	-			
HCM Lane LOS	A	-	-			
HCM 95th %tile Q(veh)	0.1	-	-			



Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	141	0	0	0	0	153
Future Volume (vph)	141	0	0	0	0	153
Satd. Flow (prot)	2132	0	0	0	0	1808
Flt Permitted						
Satd. Flow (perm)	2132	0	0	0	0	1808
Lane Group Flow (vph)	147	0	0	0	0	158
Sign Control	Free		Free	Free		

Intersection Summary

Control Type: Unsignalized

Intersection Capacity Utilization 23.6%

ICU Level of Service A

Analysis Period (min) 15

TTN_Without Development 2035SAT_v0
29: Bear Tavern Rd. & 295 SB Ramp

WO2035
SAT Peak



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			↑	↑		↑
Traffic Volume (vph)	0	0	466	153	0	593
Future Volume (vph)	0	0	466	153	0	593
Satd. Flow (prot)	0	0	1863	1568	0	1881
Flt Permitted						
Satd. Flow (perm)	0	0	1863	1568	0	1881
Lane Group Flow (vph)	0	0	621	204	0	618
Sign Control	Free		Free			Free

Intersection Summary

Control Type: Unsignalized

Intersection Capacity Utilization 34.5%

ICU Level of Service A

Analysis Period (min) 15



Lane Group	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations		↑↑	↑↑↑			
Traffic Volume (vph)	0	417	340	51	0	0
Future Volume (vph)	0	417	340	51	0	0
Satd. Flow (prot)	0	3574	5001	0	0	0
Flt Permitted						
Satd. Flow (perm)	0	3574	5001	0	0	0
Lane Group Flow (vph)	0	453	471	0	0	0
Sign Control		Free	Free		Free	

Intersection Summary

Control Type: Unsignalized

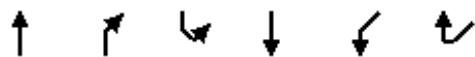
Intersection Capacity Utilization 14.9%

ICU Level of Service A

Analysis Period (min) 15

TTN_Without Development 2035SAT_v0
39: Scotch Rd. & Scotch Rd. Ramp

WO2035
SAT Peak



Lane Group	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations	↑↓			↑↑		
Traffic Volume (vph)	364	28	0	377	0	0
Future Volume (vph)	364	28	0	377	0	0
Satd. Flow (prot)	3537	0	0	3539	0	0
Flt Permitted						
Satd. Flow (perm)	3537	0	0	3539	0	0
Lane Group Flow (vph)	426	0	0	454	0	0
Sign Control	Free			Free	Free	

Intersection Summary

Control Type: Unsignalized

Intersection Capacity Utilization 14.3%

ICU Level of Service A

Analysis Period (min) 15