



Consulting



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March 2, 2021

Brolex Properties, LLC
5912 North Burdick Street
East Syracuse, NY 13057

Attn: Mr. Joshua Heintz

**Re: Traffic Impact Assessment Addendum – Proposed Crego Road Housing
Tappan Street Review**

Dear Mr. Heintz:

As requested by the Town of Van Buren, I have completed a supplemental analysis of Tappan Street and the Tappan Street/Syracuse Street (NYS Route 48) intersection associated with the proposed Crego Road Housing development located to the north and west of Crego Road and Tappan Street Road in the Town of Van Buren, NY. This letter serves as an addendum to the February 16th, 2021 Traffic Impact Assessment completed by GTS Consulting for this project.

Additional Data Collection

Site visits were conducted on Wednesday – February 24th, 2021 and Saturday – February 27th, 2021 to collect the following:

- Existing Traffic Volume Counts – Traffic turning movement counts were collected at the intersection of Tappan Street with Syracuse Street (NYS Route 48) during the weekday morning (7-9am) and evening (4-6pm) peak travel periods on the 24th and during the Saturday midday (11am-1pm) peak travel period on the 27th to ensure that actual peak hours of the intersection were captured. The traffic counts included separate heavy vehicle counts per direction. There were minimal pedestrian volumes during the traffic count periods and all area schools were in session.
- Operational Data - Other data needed to evaluate traffic operations, such as intersection geometry, control, and speeds limits were also collected. Existing signal timing data was obtained from NYSDOT to ensure that the signal was properly modeled.

Existing Operations

Tappan Street Road has one lane in each direction between the site and Syracuse Street. There are no auxiliary lanes at the Syracuse Street intersection. Syracuse Street (NYS Route 48) has one lane in each direction at Tappan Street with no auxiliary lanes. The Tappan Street / Syracuse Street intersection is controlled by a two phase traffic signal with a fixed 46 second northbound/southbound phase and an actuated Tappan Street phase up to 25 seconds in length.

Mr. Heintz
March 2, 2021
Page 2 of 5

**Re: Traffic Impact Assessment Addendum – Proposed Crego Road Housing
Tappan Street Review**

Based on the traffic counts collected, the peak hours for the intersection were identified as follows:

Morning Peak Hour – 8:00 am to 9:00am
Evening Peak Hour – 4:15pm to 5:15pm
Saturday Peak Hour – 11:15am to 12:15pm

The highest peak hourly volumes at the Tappan Street / Syracuse Street intersection were used even though the peak hours do not match up directly with the peak hours on Downer Street that were used in the study in order to provide the worst case analysis.

The 2021 existing traffic volumes collected in November, January and February for the entire project study area are shown in the attached Figure 1 for the weekday morning, weekday evening and Saturday midday peak hours.

Consistent with the February traffic impact study, the 2021 existing traffic volumes at the Tappan Street/Syracuse Street intersection were adjusted by a conservative factor of +20% during all three peak hours to account for current COVID impacts, applied to all traffic movements through the intersection. The adjusted 2021 existing traffic volumes for the entire study area are shown in Figure 2.

Tappan Street Road/Tappan Street is a local residential collector roadway. The roadway carries approximately 100-150 vehicles in each direction between the site and Syracuse Street during the morning peak hour, approximately 175-225 vehicles in each direction during the evening, and approximately 150-200 vehicles in each direction during the Saturday peak hour. The traffic count data for the Tappan Street/Syracuse Street intersection has been attached.

Capacity analysis of the traffic operations at the Tappan Street/Syracuse Street intersection was completed using Synchro10, consistent with the February traffic impact assessment. Simtraffic analyses were not completed as the intersection is signalized and not showing any capacity issues.

The results of the Synchro capacity analysis indicate that all traffic movements at the signalized intersection of Tappan Street with Syracuse Street are operating at Levels of Service C or better during the three peak hours. The overall intersection is operating at Level of Service B during all three peak hours.

The detailed Level of Service summary, Queue summary and capacity analysis printouts have been attached.

There are no concerns with existing traffic operations on Tappan Street @ Syracuse Street. There are acceptable delays at the adjacent signalized intersection with acceptable Levels of Service for all traffic movements.

**Re: Traffic Impact Assessment Addendum – Proposed Crego Road Housing
Tappan Street Review**

Accident Analysis

An accident analysis was completed for Tappan Street between Crego Road and Syracuse Street using history reports obtained for a three year period from November 2017 through October 2020. Over the three year period, there were 25 total accidents along the corridor with the following distribution:

- Tappan Street @ Syracuse Street – 11 accidents including 10 rearend accidents and 1 overtaking accident. Assuming that the evening peak hour volumes are 9% of the total daily traffic traveling through the intersection, the accident rate is 0.52 accidents per million entering vehicles, which is above the statewide average of 0.32 accidents per million entering vehicles for similar facilities.
- Tappan Street @ Mcharrie Street – 1 right angle accident. The intersection accident rate was not calculated since traffic counts were not collected at this location and there was only 1 accident.
- Tappan Street @ Crego Road – 1 overturn accident. This accident was a result of unsafe travel speeds and resulted in a fatality. The intersection accident rate was not calculated as there was only 1 accident.
- Tappan Street @ Overlook Drive – 1 fixed object accident. The intersection accident rate was not calculated since traffic counts were not collected at this location and there was only 1 accident.
- Tappan Street Midblock – 6 accidents including 3 fixed object accidents, 2 animal accidents and 1 backing accident. With 9 total midblock accidents including the accidents at Crego, Mcharrie and Overlook, assuming that the evening peak hour volumes are 9% of the total daily traffic traveling on Tappan Street, the accident rate is 2.10 accidents per million vehicle miles, which is below the statewide average of 2.23 accidents per million vehicle miles for similar facilities.
- Canton Street – 1 right angle accident to the south of Tappan Street.
- Syracuse Street – 1 rearend accident to the south of Tappan Street
- Division Street – 1 backing accident and 1 overtaking accident, both to the south of Tappan Street.
- Mcharrie Street – 1 right angle accident to the south of Tappan Street.

Overall, 23 (92%) of the accidents were property damage only accidents with 1 injury accident and the 1 noted fatality accident. There are no distinct patterns noted.

Mr. Heintz
March 2, 2021
Page 4 of 5

**Re: Traffic Impact Assessment Addendum – Proposed Crego Road Housing
Tappan Street Review**

The detailed accident summary has been attached.

2026 Background Operations

The 2026 base morning, evening and Saturday peak hour volumes for the entire study area with 1% growth per year are shown in Figure 3. The approved trips associated with the Village Apartments are shown in Figure 4 with the assumption that 20% of the trips generated travel to/from the north on Syracuse Street past Tappan Street. The proposed trips associated with the Taco Bell Development are shown in Figure 5 with the assumption that 20% of the Downer Street trips to/from the east continue to/from the north on Syracuse Street past the Tappan Street intersection. The 2026 background traffic volumes with growth and the approved/proposed developments for the entire study area are shown in Figure 6.

Capacity analysis of the 2026 background condition at the Tappan Street/Syracuse Street intersection shows minor increases in delays at the signalized intersection during the peak hours. All movements continue to operate at acceptable Levels of Service C or better with overall intersection Level of Service B during all three peak hours.

The detailed Level of Service summary, Queue summary and capacity analysis printouts have been attached.

Trip Distribution

The trip distribution was expanded through the Tappan Street/Syracuse Street intersection as shown in Figure 7. It is assumed that 90% of the traffic traveling to/from the east on Tappan Street will travel to/from the north on Syracuse Street and 10% will travel to/from the south on Syracuse Street.

The trips generated during each peak hour are shown in Figure 8 and the resultant full build traffic volumes for the entire study area expected when the development is complete are shown in Figure 9.

Build Operations

Capacity analysis of Tappan Street/Syracuse Street intersection under the build condition with the proposed Crego Road Housing development indicates that the development will have minor impacts on traffic operations with minor increases in delay. The analysis indicates that the intersection will continue to operate at overall LOS B during the three peak hours with no changes in any movement Level of Service from the background condition. There are no increases in delay more than 2 seconds for any specific movement.

The detailed Level of Service, Queue summary and capacity analysis printouts have been attached.

**Proposed Crego Road Housing Development – Crego Road / Tappan Street Road, Town of Van Buren, NY
Intersection Level of Service & Queue Summary**

Morning Peak Hour

Intersection	Available Storage	2021 Existing		2026 Background		2026 Build	
		LOS	Queue	LOS	Queue	LOS	Queue
Tappan Street @ Syracuse Street		B(14)		B(15)		B(17)	
EB Left/Right	-	C(31)	82	C(31)	85	C(33)	100
NB Left/Through	-	B(11)	226	B(12)	256	B(13)	258
SB Through/Right	-	B(12)	307	B(14)	349	B(15)	357

A(9) – Signalized Level of Service (Average Delay per Vehicle in Seconds) – Synchro
Maximum Queues from Synchro Analysis = 95th Percentile Queues in Feet

Evening Peak Hour

Intersection	Available Storage	2021 Existing		2026 Background		2026 Build	
		LOS	Queue	LOS	Queue	LOS	Queue
Tappan Street @ Syracuse Street		B(16)		B(18)		B(20)	
EB Left/Right	-	C(29)	124	C(30)	130	C(30)	139
NB Left/Through	-	B(15)	405	B(18)	544	B(19)	562
SB Through/Right	-	B(14)	409	B(16)	547	B(19)	587

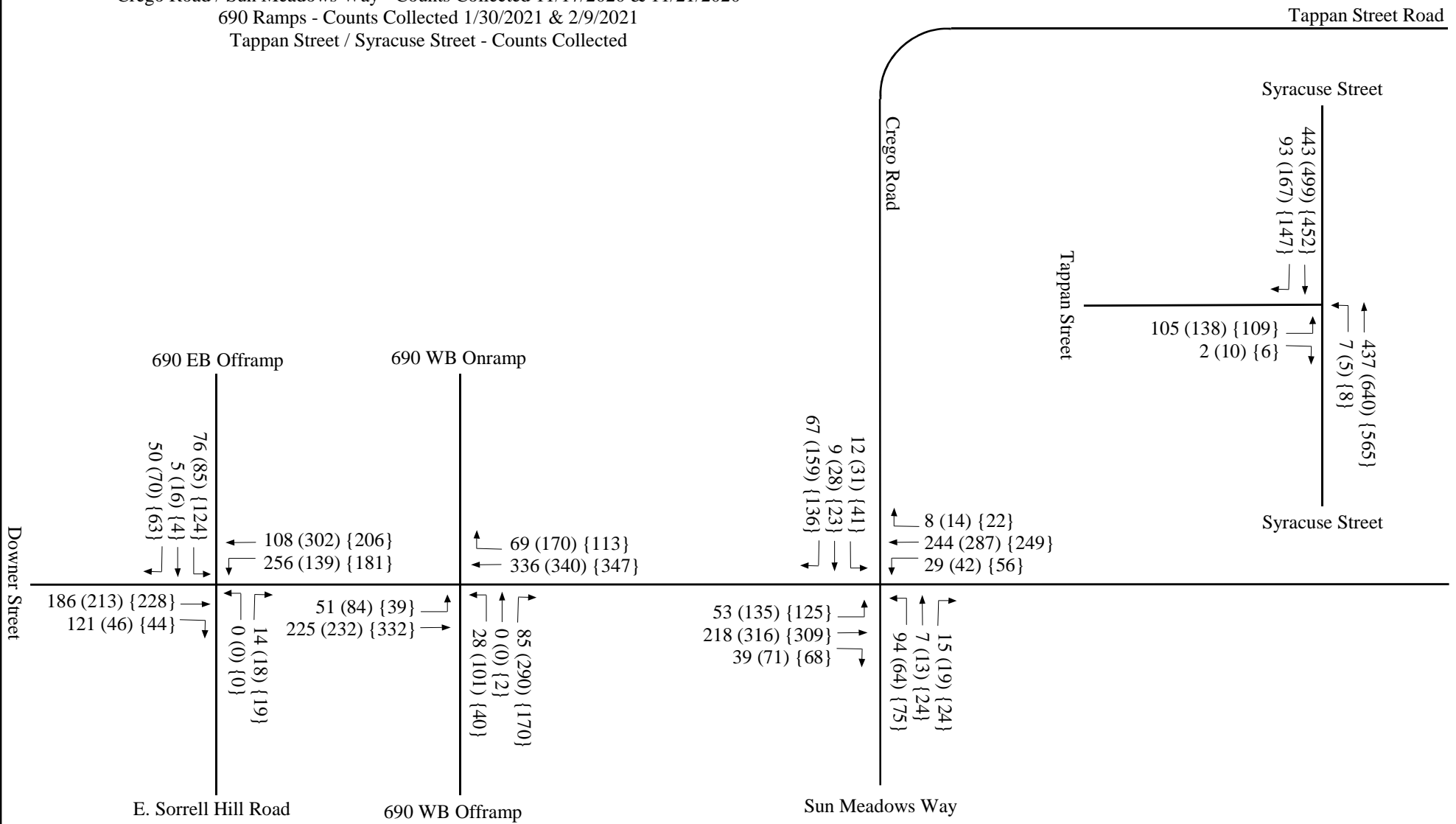
A(9) – Signalized Level of Service (Average Delay per Vehicle in Seconds) – Synchro
Maximum Queues from Synchro Analysis = 95th Percentile Queues in Feet

Saturday Peak Hour

Intersection	Available Storage	2021 Existing		2026 Background		2026 Build	
		LOS	Queue	LOS	Queue	LOS	Queue
Tappan Street @ Syracuse Street		B(11)		B(13)		B(14)	
EB Left/Right	-	C(28)	98	C(29)	102	C(29)	115
NB Left/Through	--	A(9)	278	B(11)	321	B(11)	343
SB Through/Right	-	A(9)	277	B(11)	322	B(12)	359

A(9) – Signalized Level of Service (Average Delay per Vehicle in Seconds) – Synchro
Maximum Queues from Synchro Analysis = 95th Percentile Queues in Feet

Crego Road / Sun Meadows Way - Counts Collected 11/17/2020 & 11/21/2020
 690 Ramps - Counts Collected 1/30/2021 & 2/9/2021
 Tappan Street / Syracuse Street - Counts Collected



Proposed Crego Road Housing Development - Crego Road & Tappan Street Road - Town of Van Buren, NY

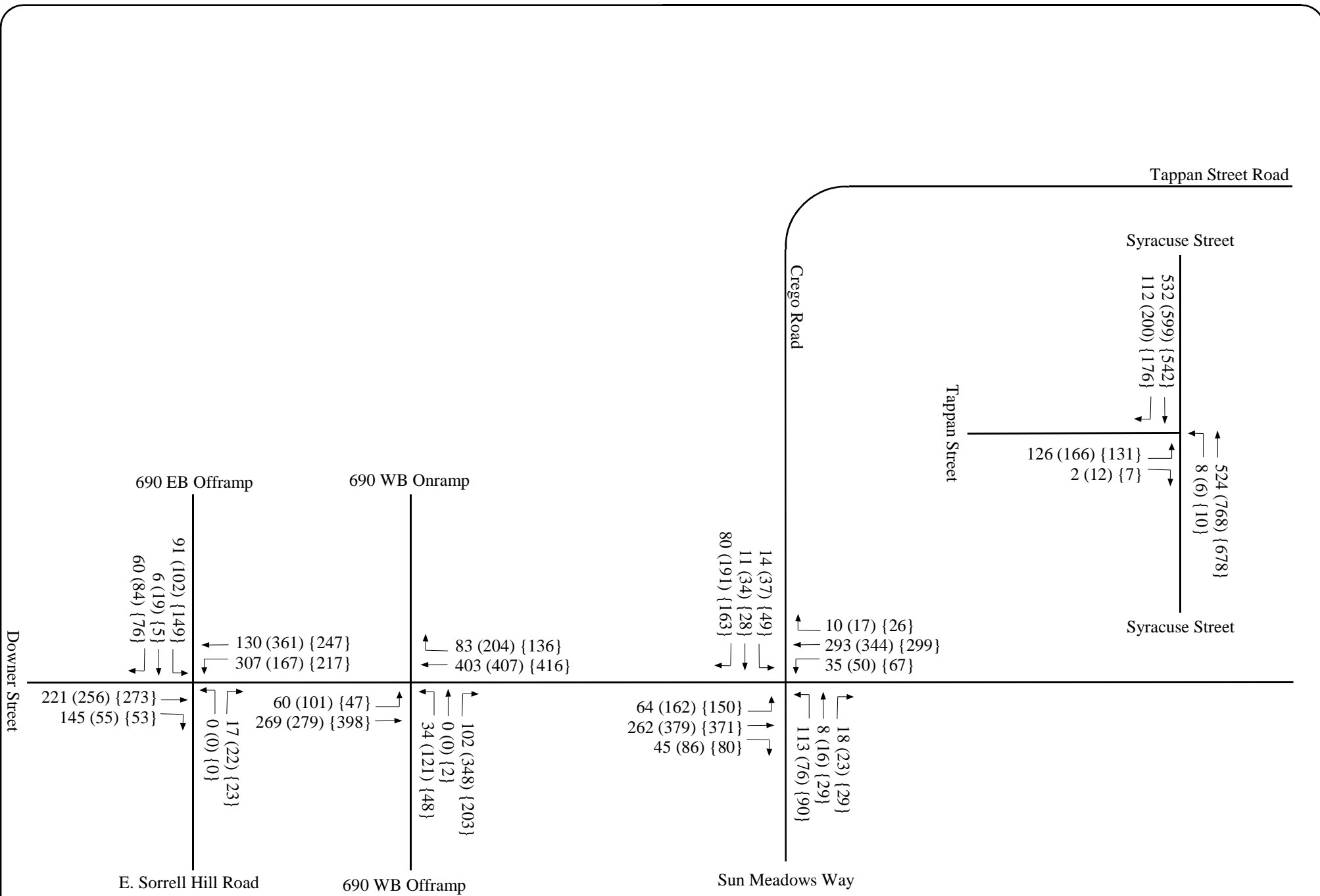
2021 Existing Traffic Volumes - Collected November 2020 & January/February 2021

Weekday Morning (Evening) {Saturday} Peak Hour



Figure 1

Not To Scale



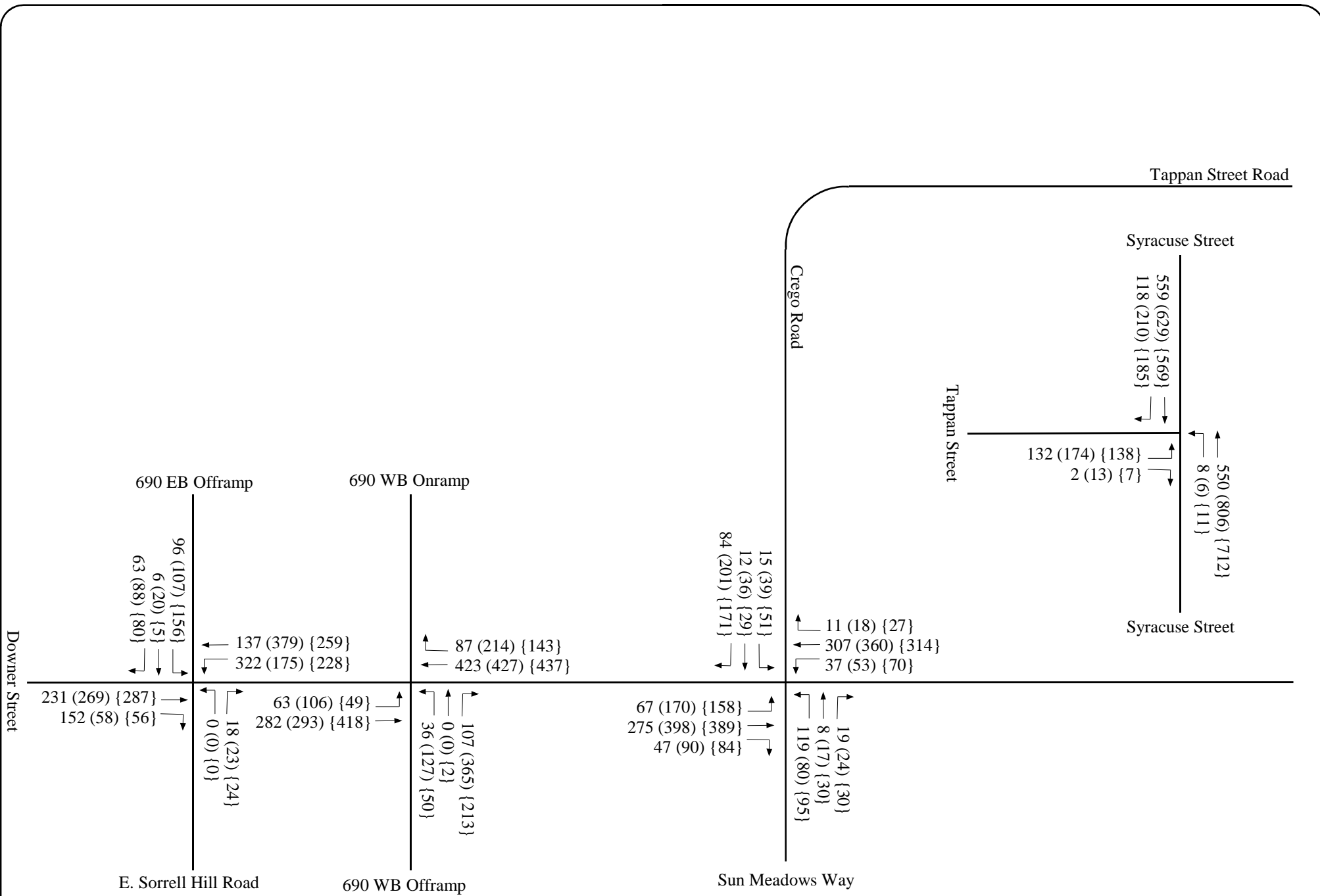
Proposed Crego Road Housing Development - Crego Road & Tappan Street Road - Town of Van Buren, NY

2021 Existing Traffic Volumes - Adjusted with 20% Increase
 Weekday Morning (Evening) {Saturday} Peak Hour



Figure 2

Not To Scale



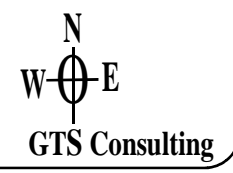
Proposed Crego Road Housing Development - Crego Road & Tappan Street Road - Town of Van Buren, NY

2026 Base Traffic Volumes - With 1% Growth per Year (5% Total)

Weekday Morning (Evening) {Saturday} Peak Hour

Figure 3

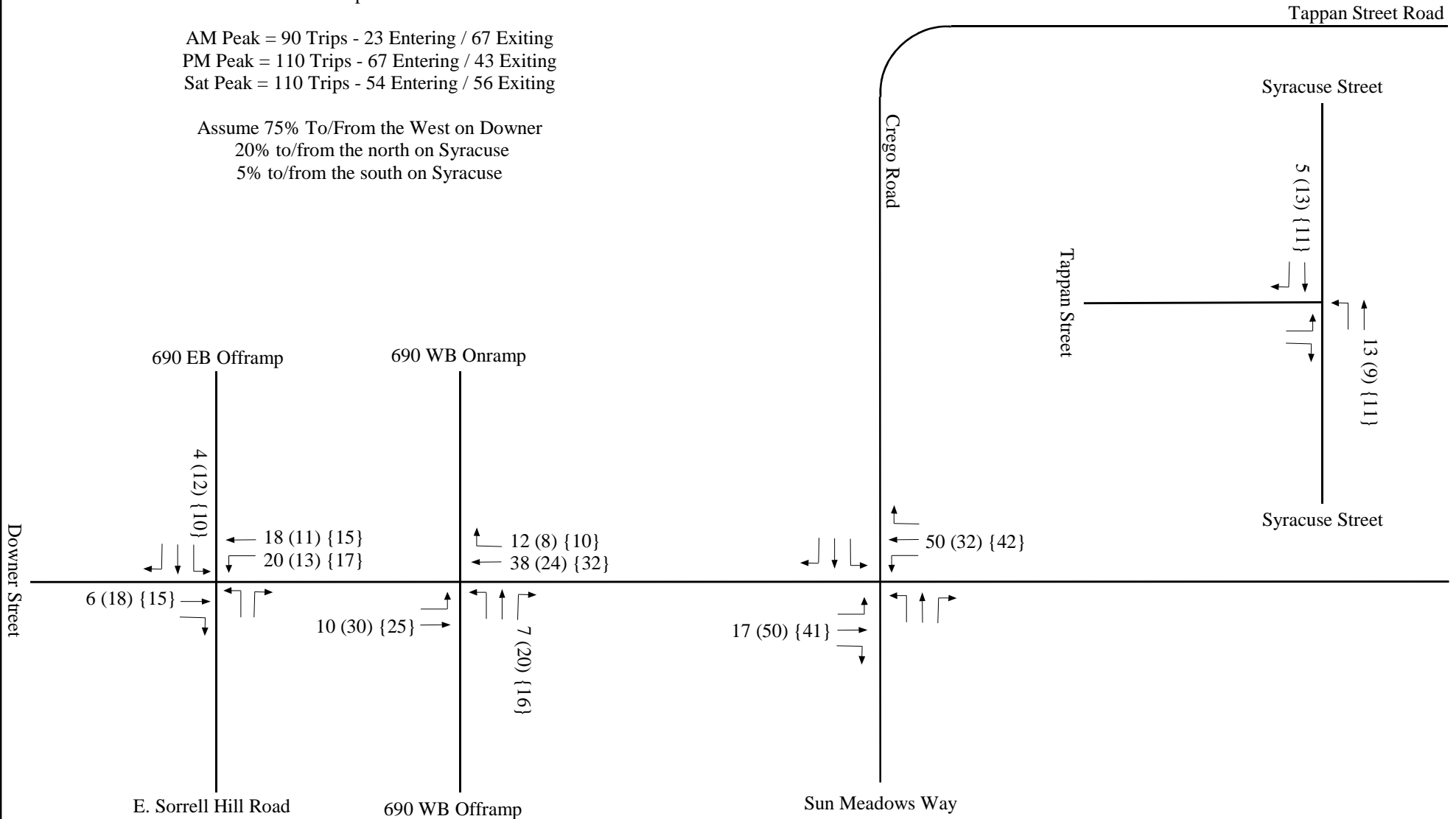
Not To Scale



ITE Trip Generation, 10th Edition
250 Apartments

AM Peak = 90 Trips - 23 Entering / 67 Exiting
PM Peak = 110 Trips - 67 Entering / 43 Exiting
Sat Peak = 110 Trips - 54 Entering / 56 Exiting

Assume 75% To/From the West on Downer
20% to/from the north on Syracuse
5% to/from the south on Syracuse



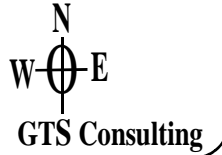
Proposed Crego Road Housing Development - Crego Road & Tappan Street Road - Town of Van Buren, NY

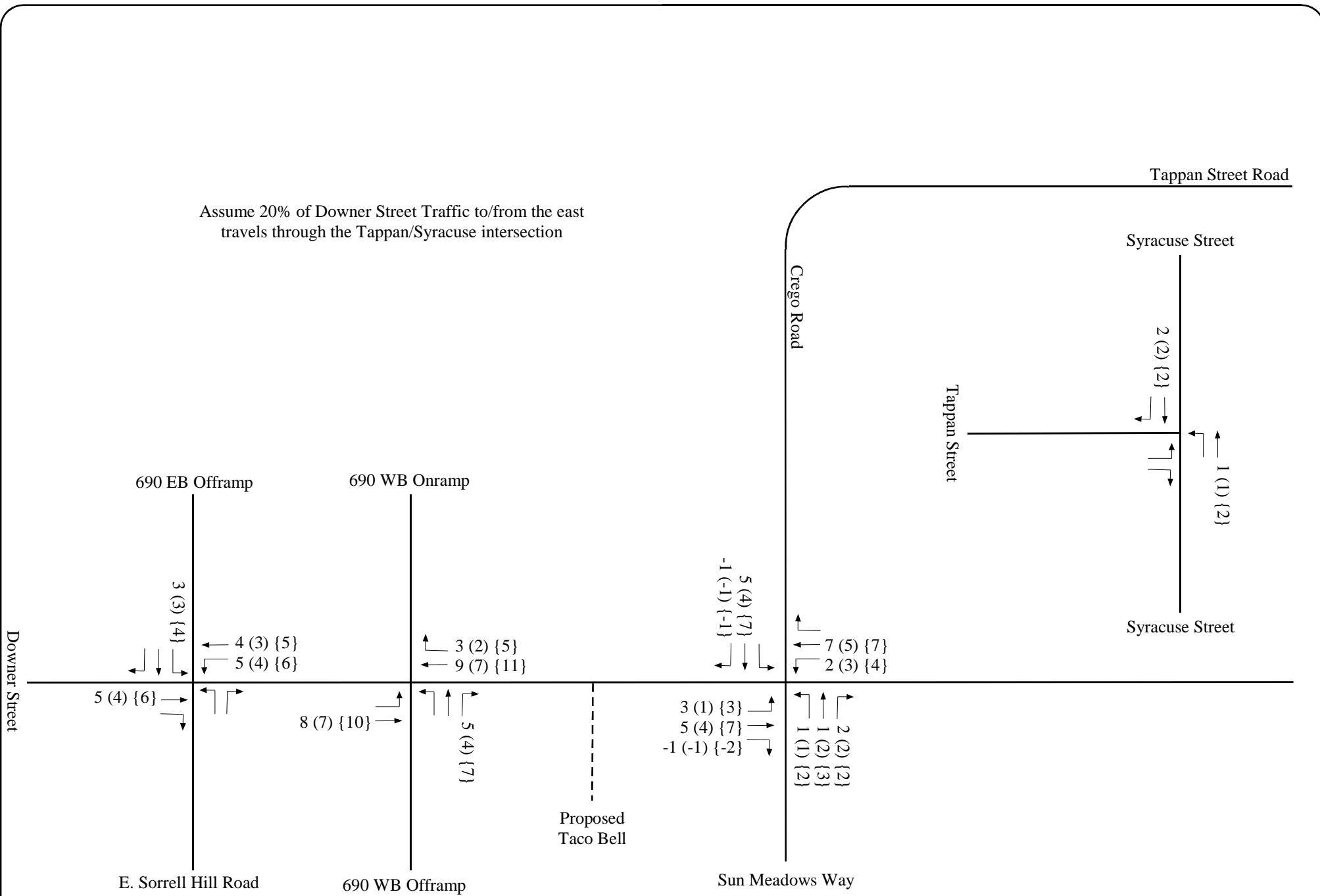
Approved Development Trips - Village Apartments - 250 Apartments

Weekday Morning (Evening) {Saturday} Peak Hour

Figure 4

Not To Scale





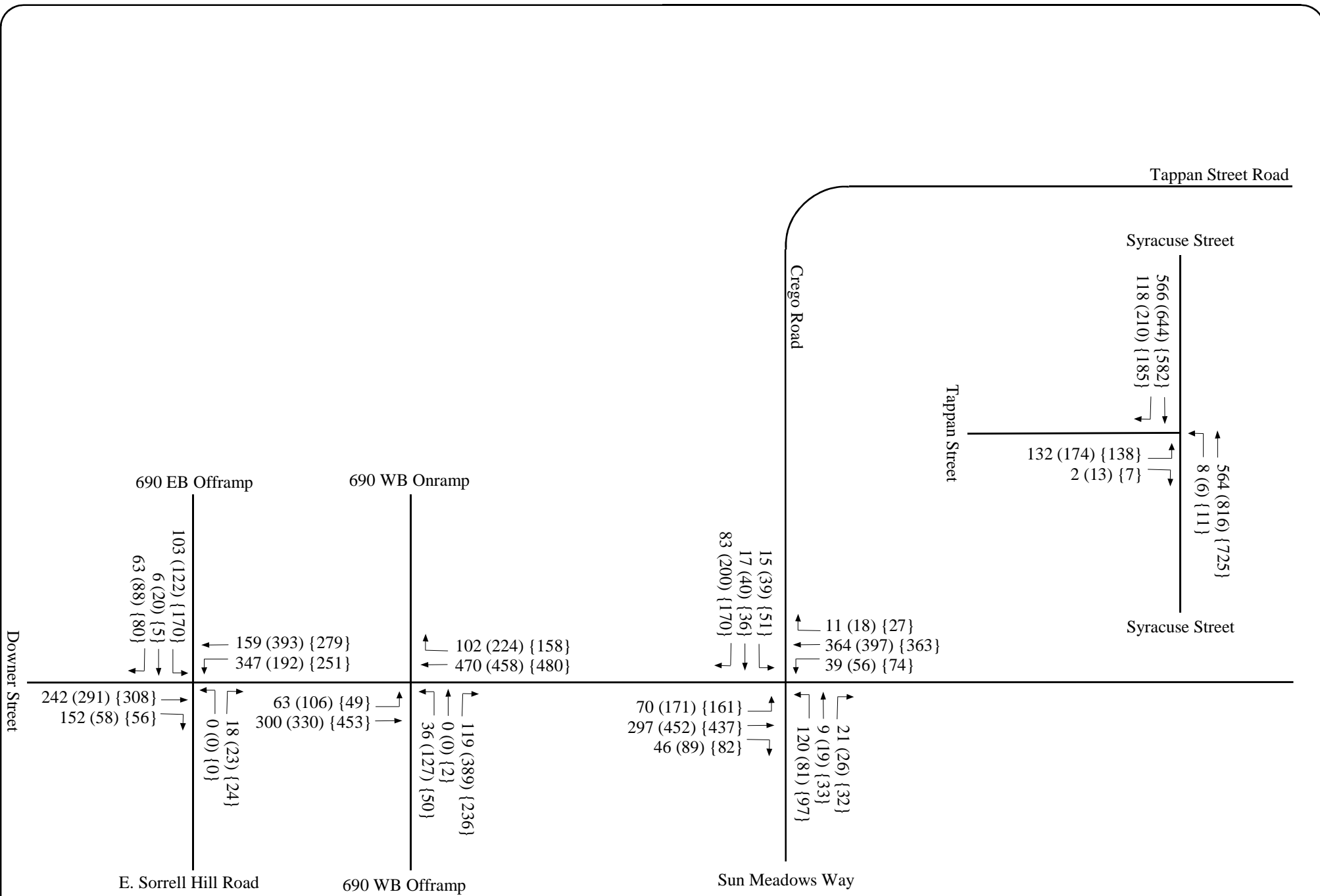
Proposed Crego Road Housing Development - Crego Road & Tappan Street Road - Town of Van Buren, NY

Proposed Development Trips - Taco Bell
 Weekday Morning (Evening) {Saturday} Peak Hour



Figure 5

Not To Scale

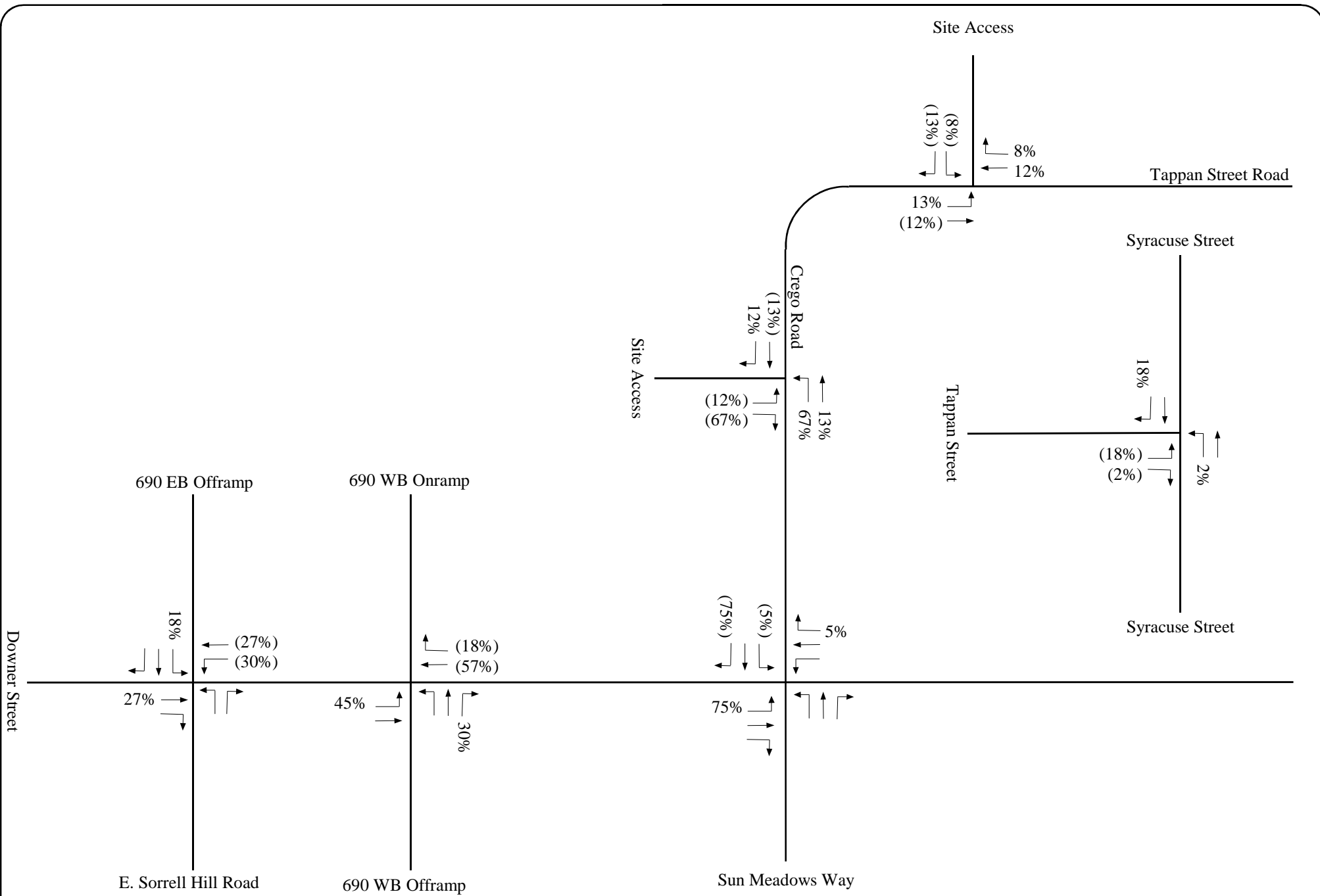


Proposed Crego Road Housing Development - Crego Road & Tappan Street Road - Town of Van Buren, NY
 2026 Background Traffic Volumes - With 5% Growth & Approved/Proposed Developments
 Weekday Morning (Evening) {Saturday} Peak Hour

Figure 6

Not To Scale





Proposed Crego Road Housing Development - Crego Road & Tappan Street Road - Town of Van Buren, NY

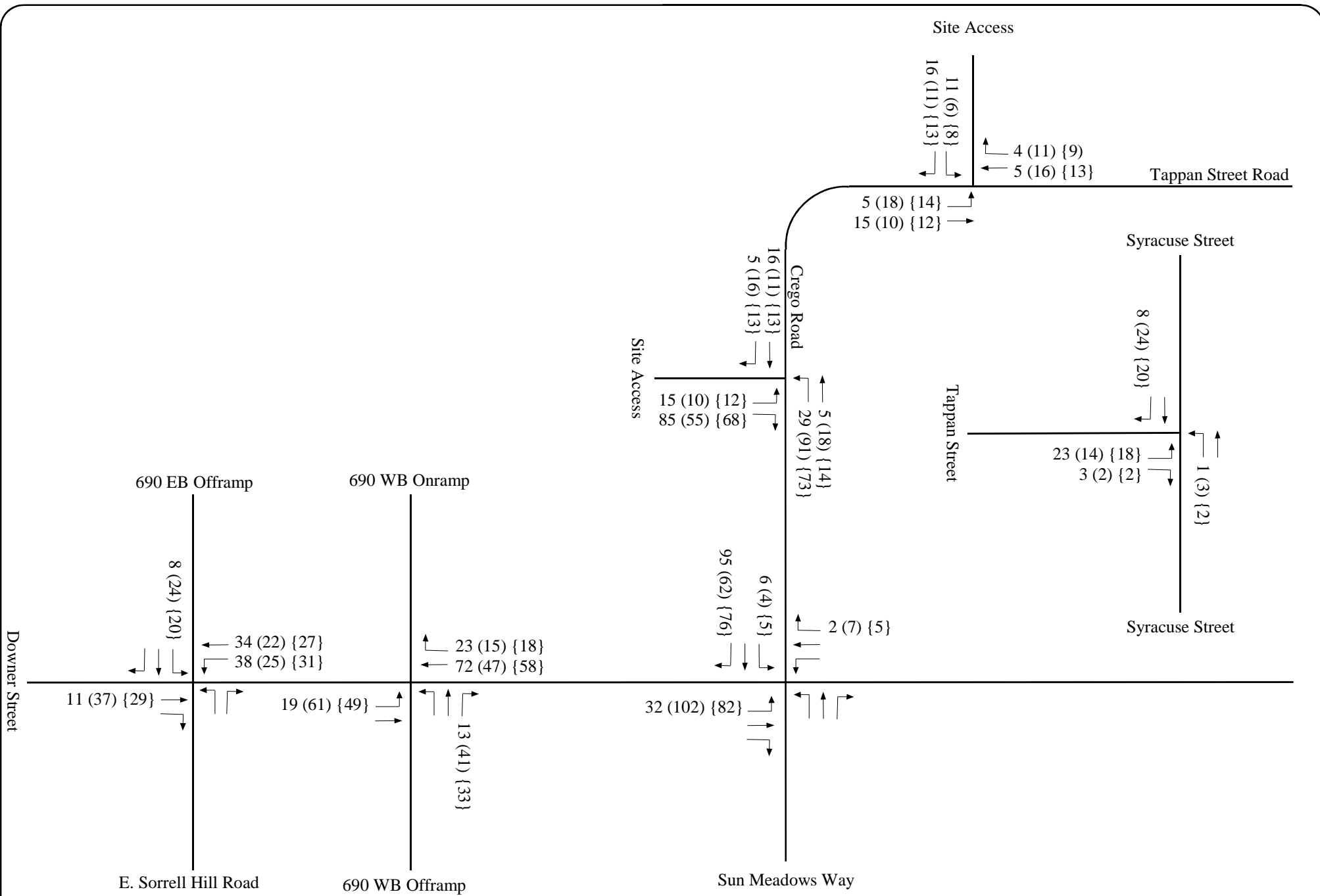
Arrival/Departure Trip Distribution
 Entering (Exiting) Trip Percentage



Figure 7

Not To Scale

GTS Consulting



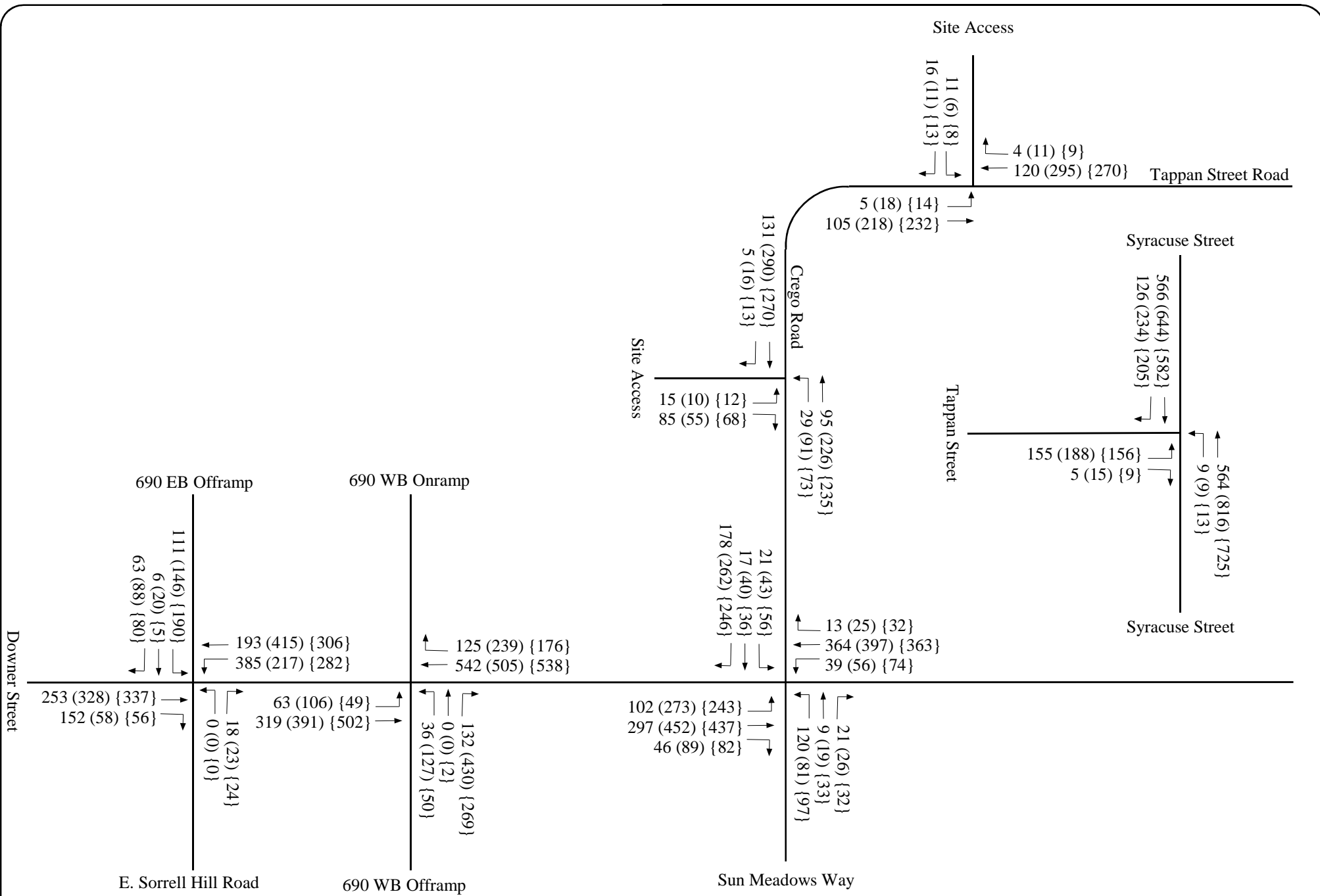
Proposed Crego Road Housing Development - Crego Road & Tappan Street Road - Town of Van Buren, NY

Trips Generated
 Weekday Morning (Evening) {Saturday} Peak Hour



Figure 8

Not To Scale

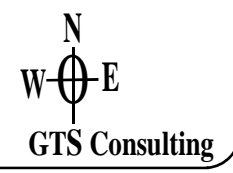


Proposed Crego Road Housing Development - Crego Road & Tappan Street Road - Town of Van Buren, NY

2026 Build Traffic Volumes - With Proposed Crego Road Housing Development
 Weekday Morning (Evening) {Saturday} Peak Hour

Figure 9

Not To Scale



**Proposed Crego Road Housing Development - Crego Road / Tappan Street Road, Town of Van Buren, NY
Accident History Summaries - November 1, 2017 Through October 31, 2020**

Accident #	Date	Location	Type	# Cars	Severity	Direction	Conditions	Contributing Factors
1	12/1/2017	Syracuse @ Tappan	Rearend	2	PDO	NB / NB Stopped	Wet	Following Too Closely
2	12/20/2017	Syracuse @ Tappan	Rearend	3	PDO	SB / SB Stopped (2)	Icy	Following Too Closely
3	12/20/2017	Canton - S of Tappan	Right Angle	2	PDO	EB / NB	Icy	Pavement Slippery
4	12/30/2017	Syracuse - 61m S of Tappan	Rearend	2	PDO	SB / SB Right	Icy	Following Too Closely
5	1/2/2018	Midblock Tappan	Fixed Object	1	PDO	WB / Sign Post	Icy	Pavement Slippery
6	12/31/2017	Mcharrie @ Tappan	Right Angle	2	PDO	EB / SB	Icy	Unsafe Speed
7	3/31/2018	Syracuse @ Tappan	Rearend	2	PDO	SB / SB	Dry	Following Too Closely
8	4/20/2018	Syracuse @ Tappan	Rearend	2	PDO	SB / SB	Dry	Unknown
9	5/1/2018	Syracuse @ Tappan	Rearend	2	PDO	NB / NB Stopped	Dry	Following Too Closely
10	5/26/2018	Midblock Tappan	Animal	1	PDO	WB / Animal	Dry	Animal's Actions
11	6/12/2018	Midblock Tappan	Animal	2	PDO	EB / EB / Animal	Dry	Animal's Actions
12	8/21/2018	Midblock Tappan	Fixed Object	1	INJ	EB / Utility Pole	Dry	Driver Inexperience
13	10/21/2018	Midblock Tappan	Fixed Object	1	PDO	EB / Fixed Object	Dry	Lost Consciousness
14	8/21/2018	Tappan @ Crego	Overtaken	2	FAT	EB / NB Parked	Dry	Unsafe Speed
15	12/14/2018	Overlook @ Tappan	Fixed Object	1	PDO	WB / Tree	Dry	Reaction to Another Vehicle
16	4/26/2019	Division - S of Tappan	Backing	2	PDO	EB Backing / NB Parked	Dry	Backing Unsafely
17	5/30/2019	Division - S of Tappan	Overtaking	2	PDO	NB / NB Parked	Wet	Passenger Distraction
18	6/17/2019	Syracuse @ Tappan	Rearend	2	PDO	NB / NB	Dry	Following Too Closely
19	6/24/2019	Syracuse @ Tappan	Rearend	2	PDO	NB / NB	Dry	Following Too Closely
20	7/12/2019	Syracuse @ Tappan	Rearend	2	PDO	EB / EB Stopped	Dry	Driver Inattention
21	8/15/2019	Syracuse @ Tappan	Overtaking	2	PDO	SB Right / SB Right	Dry	Passing Improper
22	1/13/2020	Syracuse @ Tappan	Rearend	2	PDO	NB / NB Stopped	Dry	Following Too Closely
23	1/24/2020	Syracuse @ Tappan	Rearend	3	PDO	NB / NB Stopped (2)	Dry	Following Too Closely
24	4/4/2020	Midblock Tappan	Backing	2	PDO	NB Backing / EB	Dry	Backing Unsafely
25	4/9/2020	Mcharrie - S of Tappan	Right Angle	2	PDO	EB Right / SB Parked	Wet	Turning Improper

Tappan @ Syracuse - 11 Accidents
10 - Rear-end Accidents
1 - Overtaking Accident

Tappan Street Midblock - 6 Accidents
3 - Fixed Object Accidents
2 - Animal Accidents
1 - Backing Accident

Canton Midblock - 1 Right Angle Accident
Syracuse Midblock - 1 Rear-end accident
Division Midblock 1 Backing Accident / 1 Overtaking Accident
Mcharrie Midblock - 1 Right Angle Accident

Tappan @ Mcharrie - 1 Right Angle Accident
Tappan @ Crego - 1 Overturn Accident
Tappan @ Overlook - 1 Fixed Object Accident

Tappan Street @ Syracuse Street Intersection - Evening Peak Hour - 1,751 Vehicles. Assumed PM Peak is 9% of AADT, AADT = 19,456 Vehicles

Tappan Street - Evening Peak Hour - 320 Vehicles. Assumed PM Peak is 9% of AADT, AADT = 3,556 Vehicles

Intersection Accident Rates

$$\frac{\# \text{ Accidents} \times 1,000,000}{\text{AADT} \times \# \text{ Years} \times 365 \text{ Days}}$$

Time Period = 3 years

Tappan @ Syracuse - 11 Accidents

Accident Rate = 0.52 accidents per million entering vehicles

Statewide average for similar facilities = 0.32 accidents per million entering vehicles (Urban - 3 Legged Signal Intersection - 1-4 Lanes)

Intersection Accident History is Above the Statewide Average

Link Accident Rates

$$\frac{\# \text{ Accidents} \times 1,000,000}{\text{Link Length} \times \text{AADT} \times \# \text{ Years} \times 365 \text{ Days}}$$

Time Period = 3 years

Tapan Link Length = 1.1 Miles

Tappan Street Midblock - 9 Accidents

Accident Rate = 2.10 accidents per million vehicle miles

Statewide average for similar facilities = 2.23 accidents per million vehicle miles Urban - Free Access - 2 Lanes - Undivided - Mainline Accidents Only)

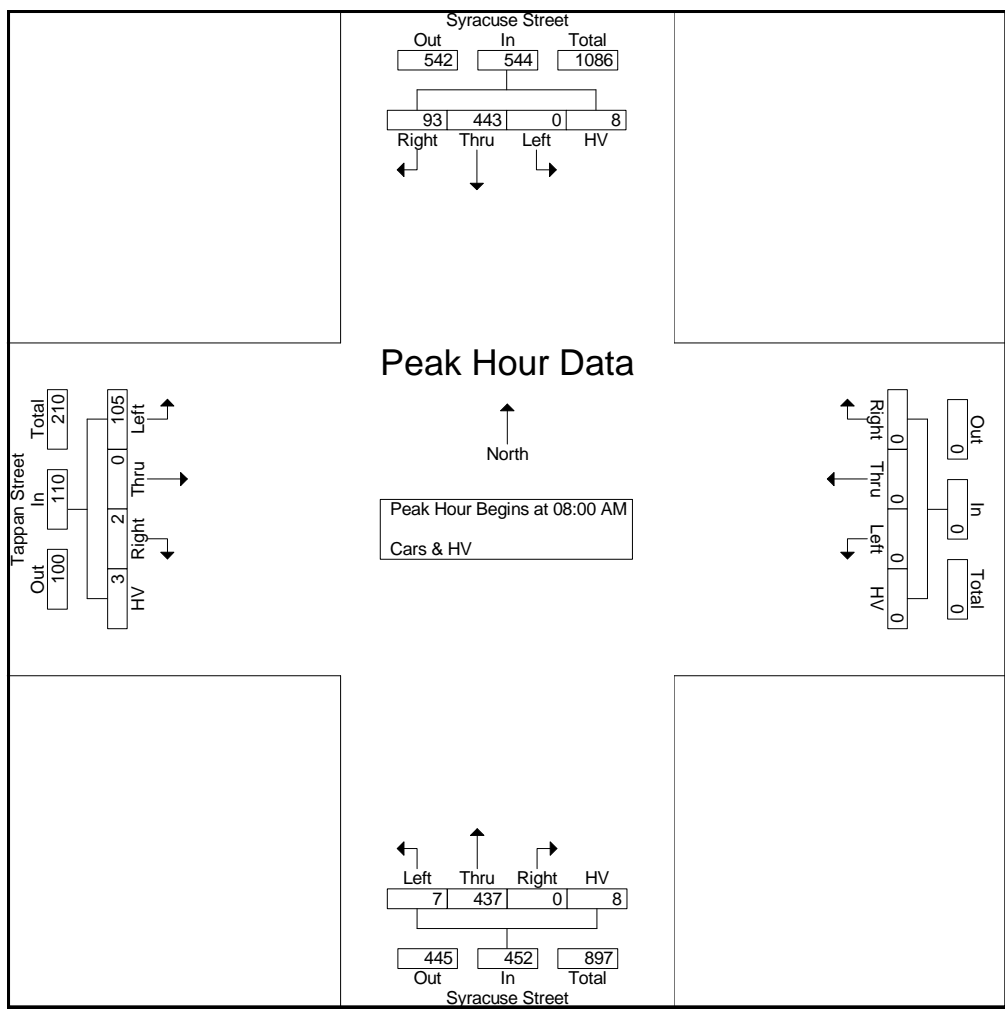
Link Accident History is Below the Statewide Average

File Name : Tappan Street @ Syracuse Street AMPM
 Site Code : 00000000
 Start Date : 2/24/2021
 Page No : 1

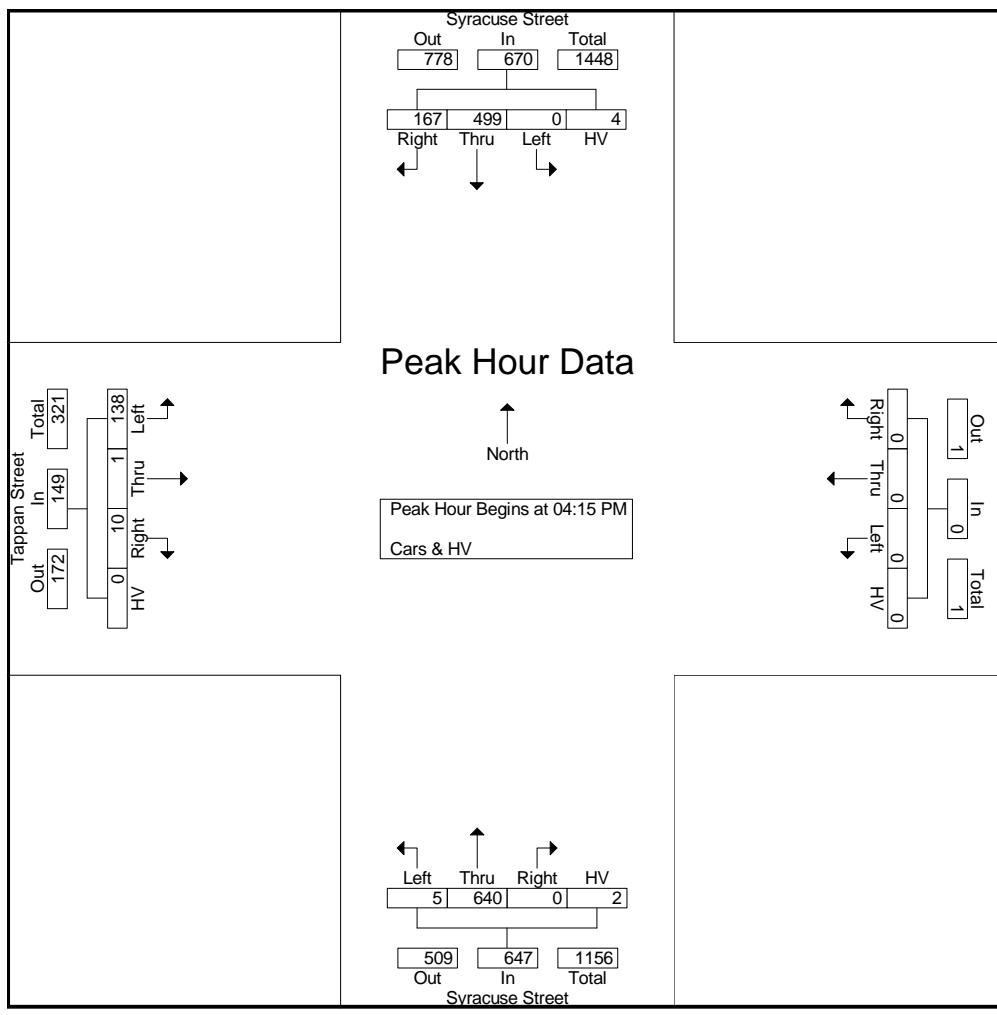
Groups Printed- Cars & HV

Start Time	Syracuse Street Southbound				Westbound				Syracuse Street Northbound				Tappan Street Eastbound				Int. Total
	Right	Thru	Left	HV	Right	Thru	Left	HV	Right	Thru	Left	HV	Right	Thru	Left	HV	
07:00 AM	14	120	0	1	0	0	0	0	0	130	0	1	2	0	17	0	285
07:15 AM	24	92	0	2	0	0	0	0	0	123	0	2	1	0	21	0	265
07:30 AM	16	117	0	1	0	0	0	0	0	93	1	1	0	0	21	0	250
07:45 AM	22	126	0	3	0	0	0	0	0	112	1	0	2	0	20	0	286
Total	76	455	0	7	0	0	0	0	0	458	2	4	5	0	79	0	1086
08:00 AM	24	109	0	2	0	0	0	0	0	90	2	1	1	0	18	1	248
08:15 AM	22	135	0	2	0	0	0	0	0	82	2	1	0	0	11	1	256
08:30 AM	22	116	0	1	0	0	0	0	0	128	0	1	1	0	29	0	298
08:45 AM	25	83	0	3	0	0	0	0	0	137	3	5	0	0	47	1	304
Total	93	443	0	8	0	0	0	0	0	437	7	8	2	0	105	3	1106
04:00 PM	40	133	0	2	0	0	0	0	0	165	1	2	0	0	36	0	379
04:15 PM	42	134	0	0	0	0	0	0	0	183	2	0	1	0	41	0	403
04:30 PM	38	113	0	1	0	0	0	0	0	150	1	1	3	0	31	0	338
04:45 PM	36	125	0	2	0	0	0	0	0	142	1	0	1	0	30	0	337
Total	156	505	0	5	0	0	0	0	0	640	5	3	5	0	138	0	1457
05:00 PM	51	127	0	1	0	0	0	0	0	165	1	1	5	1	36	0	388
05:15 PM	34	159	0	1	0	0	0	0	0	174	0	1	2	0	31	0	402
05:30 PM	27	120	0	0	0	0	0	0	0	124	3	0	3	0	29	1	307
05:45 PM	31	104	0	0	0	0	0	0	0	112	2	0	1	1	30	0	281
Total	143	510	0	2	0	0	0	0	0	575	6	2	11	2	126	1	1378
Grand Total	468	1913	0	22	0	0	0	0	0	2110	20	17	23	2	448	4	5027
Apprch %	19.5	79.6	0	0.9	0	0	0	0	0	98.3	0.9	0.8	4.8	0.4	93.9	0.8	
Total %	9.3	38.1	0	0.4	0	0	0	0	0	42	0.4	0.3	0.5	0	8.9	0.1	

Start Time	Syracuse Street Southbound					Westbound					Syracuse Street Northbound					Tappan Street Eastbound					Int. Total
	Right	Thru	Left	HV	App. Total	Right	Thru	Left	HV	App. Total	Right	Thru	Left	HV	App. Total	Right	Thru	Left	HV	App. Total	
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	24	109	0	2	135	0	0	0	0	0	0	90	2	1	93	1	0	18	1	20	248
08:15 AM	22	135	0	2	159	0	0	0	0	0	0	82	2	1	85	0	0	11	1	12	256
08:30 AM	22	116	0	1	139	0	0	0	0	0	0	128	0	1	129	1	0	29	0	30	298
08:45 AM	25	83	0	3	111	0	0	0	0	0	0	137	3	5	145	0	0	47	1	48	304
Total Volume	93	443	0	8	544	0	0	0	0	0	0	437	7	8	452	2	0	105	3	110	1106
% App. Total	17.1	81.4	0	1.5		0	0	0	0		0	96.7	1.5	1.8		1.8	0	95.5	2.7		
PHF	.930	.820	.000	.667	.855	.000	.000	.000	.000	.000	.000	.797	.583	.400	.779	.500	.000	.559	.750	.573	.910



Start Time	Syracuse Street Southbound					Westbound					Syracuse Street Northbound					Tappan Street Eastbound					Int. Total
	Right	Thru	Left	HV	App. Total	Right	Thru	Left	HV	App. Total	Right	Thru	Left	HV	App. Total	Right	Thru	Left	HV	App. Total	
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	42	134	0	0	176	0	0	0	0	0	0	183	2	0	185	1	0	41	0	42	403
04:30 PM	38	113	0	1	152	0	0	0	0	0	0	150	1	1	152	3	0	31	0	34	338
04:45 PM	36	125	0	2	163	0	0	0	0	0	0	142	1	0	143	1	0	30	0	31	337
05:00 PM	51	127	0	1	179	0	0	0	0	0	0	165	1	1	167	5	1	36	0	42	388
Total Volume	167	499	0	4	670	0	0	0	0	0	0	640	5	2	647	10	1	138	0	149	1466
% App. Total	24.9	74.5	0	0.6		0	0	0	0	0	0	98.9	0.8	0.3		6.7	0.7	92.6	0		
PHF	.819	.931	.000	.500	.936	.000	.000	.000	.000	.000	.000	.874	.625	.500	.874	.500	.250	.841	.000	.887	.909



File Name : Tappan Street @ Syracuse Street AMPM
 Site Code : 00000000
 Start Date : 2/24/2021
 Page No : 1

Groups Printed- Peds

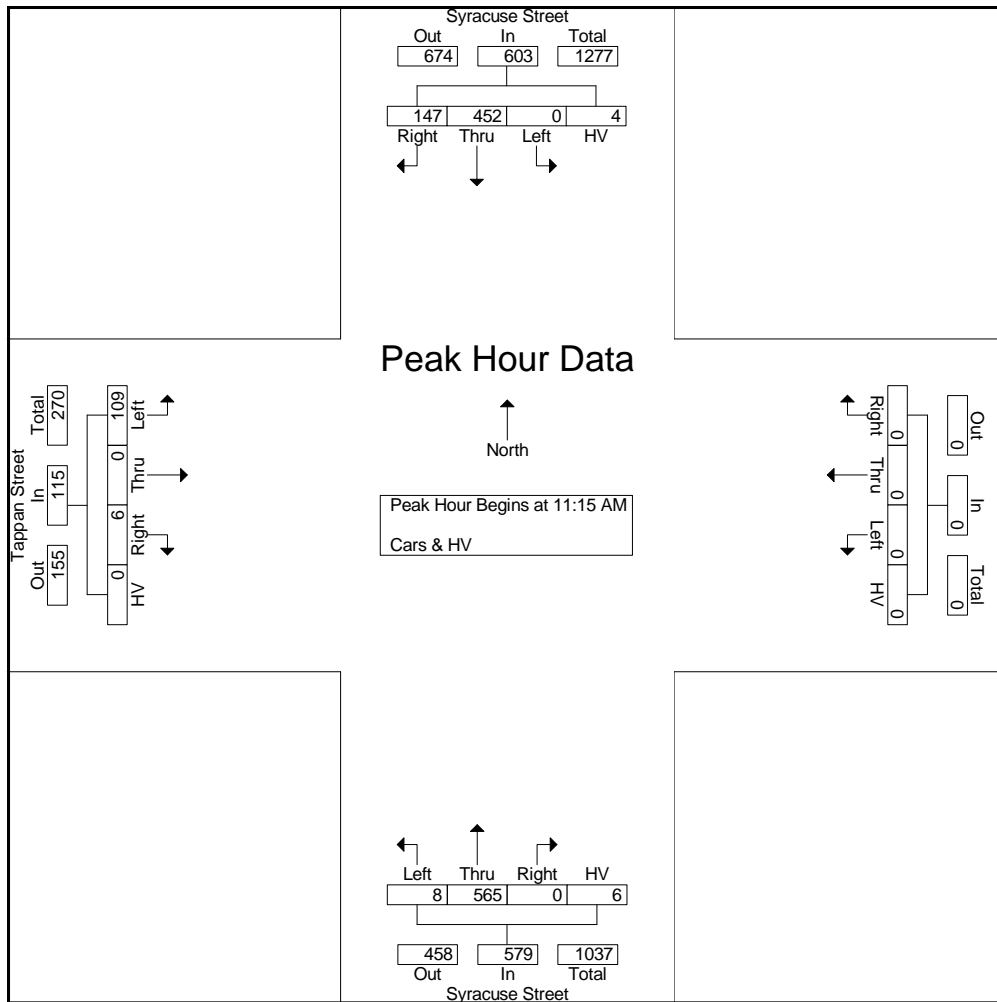
Start Time	Syracuse Street Southbound				Westbound				Syracuse Street Northbound				Tappan Street Eastbound				Int. Total		
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds			
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	
08:45 AM	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
Total	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2
04:30 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	2	2
04:45 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	3	3
Total	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	5	7	7
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
05:30 PM	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
Total	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	3	3
Grand Total	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	7	13	13
Apprch %	0	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	100		
Total %	0	0	0	46.2	0	0	0	0	0	0	0	0	0	0	0	0	53.8		

File Name : Tappan Street @ Syracuse Street Sat
 Site Code : 00000000
 Start Date : 2/27/2021
 Page No : 1

Groups Printed- Cars & HV










Start Time	Syracuse Street Southbound				Westbound				Syracuse Street Northbound				Tappan Street Eastbound				Int. Total
	Right	Thru	Left	HV	Right	Thru	Left	HV	Right	Thru	Left	HV	Right	Thru	Left	HV	
11:00 AM	26	99	0	1	0	0	0	0	0	142	1	1	2	0	24	0	296
11:15 AM	35	114	0	2	0	0	0	0	0	144	1	1	1	0	27	0	325
11:30 AM	39	110	0	0	0	0	0	0	0	133	1	2	2	0	23	0	310
11:45 AM	34	113	0	0	0	0	0	0	0	139	3	1	2	0	32	0	324
Total	134	436	0	3	0	0	0	0	0	558	6	5	7	0	106	0	1255
12:00 PM	39	115	0	2	0	0	0	0	0	149	3	2	1	0	27	0	338
12:15 PM	34	97	0	2	0	0	0	0	0	155	1	2	3	0	28	0	322
12:30 PM	28	117	0	0	0	0	0	0	0	126	1	1	3	0	29	0	305
12:45 PM	35	118	0	0	0	0	0	0	0	139	3	1	1	0	31	0	328
Total	136	447	0	4	0	0	0	0	0	569	8	6	8	0	115	0	1293
Grand Total	270	883	0	7	0	0	0	0	0	1127	14	11	15	0	221	0	2548
Apprch %	23.3	76.1	0	0.6	0	0	0	0	0	97.8	1.2	1	6.4	0	93.6	0	
Total %	10.6	34.7	0	0.3	0	0	0	0	0	44.2	0.5	0.4	0.6	0	8.7	0	

Start Time	Syracuse Street Southbound					Westbound					Syracuse Street Northbound					Tappan Street Eastbound					Int. Total
	Right	Thru	Left	HV	App. Total	Right	Thru	Left	HV	App. Total	Right	Thru	Left	HV	App. Total	Right	Thru	Left	HV	App. Total	
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:15 AM																					
11:15 AM	35	114	0	2	151	0	0	0	0	0	0	144	1	1	146	1	0	27	0	28	325
11:30 AM	39	110	0	0	149	0	0	0	0	0	0	133	1	2	136	2	0	23	0	25	310
11:45 AM	34	113	0	0	147	0	0	0	0	0	0	139	3	1	143	2	0	32	0	34	324
12:00 PM	39	115	0	2	156	0	0	0	0	0	0	149	3	2	154	1	0	27	0	28	338
Total Volume	147	452	0	4	603	0	0	0	0	0	0	565	8	6	579	6	0	109	0	115	1297
% App. Total	24.4	75	0	0.7		0	0	0	0		0	97.6	1.4	1		5.2	0	94.8	0		
PHF	.942	.983	.000	.500	.966	.000	.000	.000	.000	.000	.000	.948	.667	.750	.940	.750	.000	.852	.000	.846	.959



Lanes, Volumes, Timings 3: Syracuse Street & Tappan Street







03/01/2021

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	126	2	8	524	532	112
Future Volume (vph)	126	2	8	524	532	112
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1754	0	0	1861	1820	0
Flt Permitted	0.953			0.989		
Satd. Flow (perm)	1748	0	0	1842	1820	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	1				24	
Link Speed (mph)	30			30	30	
Link Distance (ft)	552			533	520	
Travel Time (s)	12.5			12.1	11.8	
Confl. Peds. (#/hr)	2					
Peak Hour Factor	0.57	0.57	0.78	0.78	0.86	0.86
Heavy Vehicles (%)	3%	3%	2%	2%	2%	2%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	225	0	0	682	749	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Detector Phase	4		2	2	6	
Switch Phase						
Minimum Initial (s)	8.0		40.0	40.0	40.0	
Minimum Split (s)	25.0		46.0	46.0	46.0	
Total Split (s)	25.0		46.0	46.0	46.0	
Total Split (%)	35.2%		64.8%	64.8%	64.8%	
Yellow Time (s)	2.5		4.0	4.0	4.0	
All-Red Time (s)	2.5		2.0	2.0	2.0	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	5.0			6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None		Min	Min	Min	
Act Effect Green (s)	13.5			40.1	40.1	
Actuated g/C Ratio	0.21			0.62	0.62	
v/c Ratio	0.61			0.60	0.66	
Control Delay	30.5			11.0	12.0	
Queue Delay	0.0			0.0	0.0	
Total Delay	30.5			11.0	12.0	
LOS	C			B	B	
Approach Delay	30.5			11.0	12.0	

Lanes, Volumes, Timings

3: Syracuse Street & Tappan Street

03/01/2021




						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Approach LOS	C			B	B	
Queue Length 50th (ft)	80			140	156	
Queue Length 95th (ft)	82			226	307	
Internal Link Dist (ft)	472			453	440	
Turn Bay Length (ft)						
Base Capacity (vph)	544			1142	1138	
Starvation Cap Reductn	0			0	0	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.41			0.60	0.66	

Intersection Summary

Area Type: Other
 Cycle Length: 71
 Actuated Cycle Length: 64.7
 Natural Cycle: 75
 Control Type: Semi Act-Uncoord
 Maximum v/c Ratio: 0.66
 Intersection Signal Delay: 14.1
 Intersection Capacity Utilization 51.1%
 Analysis Period (min) 15

Intersection LOS: B
 ICU Level of Service A










Splits and Phases: 3: Syracuse Street & Tappan Street

 Ø2	 Ø4
46 s	25 s
 Ø6	
46 s	

Lanes, Volumes, Timings

3: Syracuse Street & Tappan Street







03/01/2021

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	166	12	6	768	599	200
Future Volume (vph)	166	12	6	768	599	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1780	0	0	1881	1807	0
Flt Permitted	0.955			0.994		
Satd. Flow (perm)	1774	0	0	1870	1807	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	5				39	
Link Speed (mph)	30			30	30	
Link Distance (ft)	552			533	520	
Travel Time (s)	12.5			12.1	11.8	
Confl. Peds. (#/hr)	2		3			3
Peak Hour Factor	0.89	0.89	0.87	0.87	0.94	0.94
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	200	0	0	890	850	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Detector Phase	4		2	2	6	
Switch Phase						
Minimum Initial (s)	8.0		40.0	40.0	40.0	
Minimum Split (s)	25.0		46.0	46.0	46.0	
Total Split (s)	25.0		46.0	46.0	46.0	
Total Split (%)	35.2%		64.8%	64.8%	64.8%	
Yellow Time (s)	2.5		4.0	4.0	4.0	
All-Red Time (s)	2.5		2.0	2.0	2.0	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	5.0			6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None		Min	Min	Min	
Act Effect Green (s)	12.4			40.1	40.1	
Actuated g/C Ratio	0.20			0.63	0.63	
v/c Ratio	0.57			0.75	0.74	
Control Delay	29.1			14.8	13.7	
Queue Delay	0.0			0.0	0.0	
Total Delay	29.1			14.8	13.7	
LOS	C			B	B	
Approach Delay	29.1			14.8	13.7	

Lanes, Volumes, Timings

3: Syracuse Street & Tappan Street

03/01/2021




						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Approach LOS	C			B	B	
Queue Length 50th (ft)	69			204	181	
Queue Length 95th (ft)	124			405	#409	
Internal Link Dist (ft)	472			453	440	
Turn Bay Length (ft)						
Base Capacity (vph)	565			1181	1155	
Starvation Cap Reductn	0			0	0	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.35			0.75	0.74	

Intersection Summary

Area Type: Other
 Cycle Length: 71
 Actuated Cycle Length: 63.5
 Natural Cycle: 75
 Control Type: Semi Act-Uncoord
 Maximum v/c Ratio: 0.75
 Intersection Signal Delay: 15.8
 Intersection Capacity Utilization 64.3%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service C










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

Splits and Phases: 3: Syracuse Street & Tappan Street

 Ø2	 Ø4
46 s	25 s
 Ø6	
46 s	

Lanes, Volumes, Timings 3: Syracuse Street & Tappan Street







03/01/2021

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	131	7	10	678	542	176
Future Volume (vph)	131	7	10	678	542	176
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1784	0	0	1879	1809	0
Flt Permitted	0.955			0.989		
Satd. Flow (perm)	1772	0	0	1860	1809	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	4				38	
Link Speed (mph)	30			30	30	
Link Distance (ft)	552			533	520	
Travel Time (s)	12.5			12.1	11.8	
Confl. Peds. (#/hr)	4		2			2
Peak Hour Factor	0.85	0.85	0.94	0.94	0.97	0.97
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	162	0	0	732	740	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Detector Phase	4		2	2	6	
Switch Phase						
Minimum Initial (s)	8.0		40.0	40.0	40.0	
Minimum Split (s)	25.0		46.0	46.0	46.0	
Total Split (s)	25.0		46.0	46.0	46.0	
Total Split (%)	35.2%		64.8%	64.8%	64.8%	
Yellow Time (s)	2.5		4.0	4.0	4.0	
All-Red Time (s)	2.5		2.0	2.0	2.0	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	5.0			6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None		Min	Min	Min	
Act Effect Green (s)	11.2			44.1	44.1	
Actuated g/C Ratio	0.18			0.71	0.71	
v/c Ratio	0.50			0.56	0.57	
Control Delay	28.0			8.7	8.7	
Queue Delay	0.0			0.0	0.0	
Total Delay	28.0			8.7	8.7	
LOS	C			A	A	
Approach Delay	28.0			8.7	8.7	

Lanes, Volumes, Timings

3: Syracuse Street & Tappan Street

03/01/2021




						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Approach LOS	C			A	A	
Queue Length 50th (ft)	54			134	129	
Queue Length 95th (ft)	98			278	277	
Internal Link Dist (ft)	472			453	440	
Turn Bay Length (ft)						
Base Capacity (vph)	577			1317	1292	
Starvation Cap Reductn	0			0	0	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.28			0.56	0.57	

Intersection Summary

Area Type: Other
 Cycle Length: 71
 Actuated Cycle Length: 62.2
 Natural Cycle: 75
 Control Type: Semi Act-Uncoord
 Maximum v/c Ratio: 0.57
 Intersection Signal Delay: 10.6
 Intersection Capacity Utilization 60.5%
 Analysis Period (min) 15

Intersection LOS: B
 ICU Level of Service B










Splits and Phases: 3: Syracuse Street & Tappan Street

 Ø2	 Ø4
46 s	25 s
 Ø6	
46 s	

Lanes, Volumes, Timings

3: Syracuse Street & Tappan Street







03/01/2021

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	132	2	8	564	566	118
Future Volume (vph)	132	2	8	564	566	118
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1754	0	0	1861	1820	0
Flt Permitted	0.953			0.989		
Satd. Flow (perm)	1748	0	0	1842	1820	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	1				24	
Link Speed (mph)	30			30	30	
Link Distance (ft)	552			533	520	
Travel Time (s)	12.5			12.1	11.8	
Confl. Peds. (#/hr)	2					
Peak Hour Factor	0.57	0.57	0.78	0.78	0.86	0.86
Heavy Vehicles (%)	3%	3%	2%	2%	2%	2%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	236	0	0	733	795	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Detector Phase	4		2	2	6	
Switch Phase						
Minimum Initial (s)	8.0		40.0	40.0	40.0	
Minimum Split (s)	25.0		46.0	46.0	46.0	
Total Split (s)	25.0		46.0	46.0	46.0	
Total Split (%)	35.2%		64.8%	64.8%	64.8%	
Yellow Time (s)	2.5		4.0	4.0	4.0	
All-Red Time (s)	2.5		2.0	2.0	2.0	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	5.0			6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None		Min	Min	Min	
Act Effect Green (s)	13.9			40.1	40.1	
Actuated g/C Ratio	0.21			0.62	0.62	
v/c Ratio	0.63			0.65	0.70	
Control Delay	30.8			12.3	13.6	
Queue Delay	0.0			0.0	0.0	
Total Delay	30.8			12.3	13.6	
LOS	C			B	B	
Approach Delay	30.8			12.3	13.6	

Lanes, Volumes, Timings

3: Syracuse Street & Tappan Street

03/01/2021




						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Approach LOS	C			B	B	
Queue Length 50th (ft)	85			160	178	
Queue Length 95th (ft)	85			256	349	
Internal Link Dist (ft)	472			453	440	
Turn Bay Length (ft)						
Base Capacity (vph)	541			1135	1130	
Starvation Cap Reductn	0			0	0	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.44			0.65	0.70	

Intersection Summary

Area Type: Other
 Cycle Length: 71
 Actuated Cycle Length: 65.1
 Natural Cycle: 75
 Control Type: Semi Act-Uncoord
 Maximum v/c Ratio: 0.70
 Intersection Signal Delay: 15.3
 Intersection Capacity Utilization 53.6%
 Analysis Period (min) 15










Intersection LOS: B
 ICU Level of Service A

Splits and Phases: 3: Syracuse Street & Tappan Street

 Ø2	 Ø4
46 s	25 s
 Ø6	
46 s	

Lanes, Volumes, Timings 3: Syracuse Street & Tappan Street







03/01/2021

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	174	13	6	816	644	210
Future Volume (vph)	174	13	6	816	644	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1780	0	0	1881	1809	0
Flt Permitted	0.956			0.994		
Satd. Flow (perm)	1775	0	0	1870	1809	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	5				38	
Link Speed (mph)	30			30	30	
Link Distance (ft)	552			533	520	
Travel Time (s)	12.5			12.1	11.8	
Confl. Peds. (#/hr)	2		3			3
Peak Hour Factor	0.89	0.89	0.87	0.87	0.94	0.94
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	211	0	0	945	908	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Detector Phase	4		2	2	6	
Switch Phase						
Minimum Initial (s)	8.0		40.0	40.0	40.0	
Minimum Split (s)	25.0		46.0	46.0	46.0	
Total Split (s)	25.0		46.0	46.0	46.0	
Total Split (%)	35.2%		64.8%	64.8%	64.8%	
Yellow Time (s)	2.5		4.0	4.0	4.0	
All-Red Time (s)	2.5		2.0	2.0	2.0	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	5.0			6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None		Min	Min	Min	
Act Effect Green (s)	12.7			40.1	40.1	
Actuated g/C Ratio	0.20			0.63	0.63	
v/c Ratio	0.59			0.80	0.79	
Control Delay	29.5			17.5	16.4	
Queue Delay	0.0			0.0	0.0	
Total Delay	29.5			17.5	16.4	
LOS	C			B	B	
Approach Delay	29.5			17.5	16.4	

Lanes, Volumes, Timings

3: Syracuse Street & Tappan Street

03/01/2021




						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Approach LOS	C			B	B	
Queue Length 50th (ft)	73			236	212	
Queue Length 95th (ft)	130			#544	#547	
Internal Link Dist (ft)	472			453	440	
Turn Bay Length (ft)						
Base Capacity (vph)	562			1174	1150	
Starvation Cap Reductn	0			0	0	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.38			0.80	0.79	

Intersection Summary

Area Type: Other
 Cycle Length: 71
 Actuated Cycle Length: 63.9
 Natural Cycle: 75
 Control Type: Semi Act-Uncoord
 Maximum v/c Ratio: 0.80
 Intersection Signal Delay: 18.2
 Intersection Capacity Utilization 67.3%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service C

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










Splits and Phases: 3: Syracuse Street & Tappan Street

 Ø2	 Ø4
46 s	25 s
 Ø6	
46 s	

Lanes, Volumes, Timings

3: Syracuse Street & Tappan Street







03/01/2021

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	138	7	11	725	582	185
Future Volume (vph)	138	7	11	725	582	185
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1786	0	0	1879	1810	0
Flt Permitted	0.955			0.987		
Satd. Flow (perm)	1774	0	0	1857	1810	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	3				37	
Link Speed (mph)	30			30	30	
Link Distance (ft)	552			533	520	
Travel Time (s)	12.5			12.1	11.8	
Confl. Peds. (#/hr)	4		2			2
Peak Hour Factor	0.85	0.85	0.94	0.94	0.97	0.97
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	170	0	0	783	791	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Detector Phase	4		2	2	6	
Switch Phase						
Minimum Initial (s)	8.0		40.0	40.0	40.0	
Minimum Split (s)	25.0		46.0	46.0	46.0	
Total Split (s)	25.0		46.0	46.0	46.0	
Total Split (%)	35.2%		64.8%	64.8%	64.8%	
Yellow Time (s)	2.5		4.0	4.0	4.0	
All-Red Time (s)	2.5		2.0	2.0	2.0	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	5.0			6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None		Min	Min	Min	
Act Effect Green (s)	11.4			40.6	40.6	
Actuated g/C Ratio	0.18			0.64	0.64	
v/c Ratio	0.52			0.66	0.67	
Control Delay	28.6			10.9	10.9	
Queue Delay	0.0			0.0	0.0	
Total Delay	28.6			10.9	10.9	
LOS	C			B	B	
Approach Delay	28.6			10.9	10.9	

Lanes, Volumes, Timings

3: Syracuse Street & Tappan Street

03/01/2021




						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Approach LOS	C			B	B	
Queue Length 50th (ft)	58			153	148	
Queue Length 95th (ft)	102			321	322	
Internal Link Dist (ft)	472			453	440	
Turn Bay Length (ft)						
Base Capacity (vph)	570			1195	1178	
Starvation Cap Reductn	0			0	0	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.30			0.66	0.67	

Intersection Summary

Area Type: Other
 Cycle Length: 71
 Actuated Cycle Length: 63
 Natural Cycle: 75
 Control Type: Semi Act-Uncoord
 Maximum v/c Ratio: 0.67
 Intersection Signal Delay: 12.7
 Intersection Capacity Utilization 64.2%
 Analysis Period (min) 15

Intersection LOS: B
 ICU Level of Service C










Splits and Phases: 3: Syracuse Street & Tappan Street

 Ø2	 Ø4
46 s	25 s
 Ø6	
46 s	

Lanes, Volumes, Timings

3: Syracuse Street & Tappan Street







03/01/2021

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	155	5	9	564	566	126
Future Volume (vph)	155	5	9	564	566	126
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1753	0	0	1861	1816	0
Flt Permitted	0.954			0.986		
Satd. Flow (perm)	1747	0	0	1837	1816	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	2				26	
Link Speed (mph)	30			30	30	
Link Distance (ft)	552			533	520	
Travel Time (s)	12.5			12.1	11.8	
Confl. Peds. (#/hr)	2					
Peak Hour Factor	0.57	0.57	0.78	0.78	0.86	0.86
Heavy Vehicles (%)	3%	3%	2%	2%	2%	2%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	281	0	0	735	805	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Detector Phase	4		2	2	6	
Switch Phase						
Minimum Initial (s)	8.0		40.0	40.0	40.0	
Minimum Split (s)	25.0		46.0	46.0	46.0	
Total Split (s)	25.0		46.0	46.0	46.0	
Total Split (%)	35.2%		64.8%	64.8%	64.8%	
Yellow Time (s)	2.5		4.0	4.0	4.0	
All-Red Time (s)	2.5		2.0	2.0	2.0	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	5.0			6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None		Min	Min	Min	
Act Effect Green (s)	15.3			40.1	40.1	
Actuated g/C Ratio	0.23			0.60	0.60	
v/c Ratio	0.69			0.66	0.73	
Control Delay	32.7			13.3	15.0	
Queue Delay	0.0			0.0	0.0	
Total Delay	32.7			13.3	15.0	
LOS	C			B	B	
Approach Delay	32.7			13.3	15.0	

Lanes, Volumes, Timings

3: Syracuse Street & Tappan Street

03/01/2021




						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Approach LOS	C			B	B	
Queue Length 50th (ft)	104			177	201	
Queue Length 95th (ft)	100			258	357	
Internal Link Dist (ft)	472			453	440	
Turn Bay Length (ft)						
Base Capacity (vph)	530			1108	1106	
Starvation Cap Reductn	0			0	0	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.53			0.66	0.73	

Intersection Summary

Area Type: Other
 Cycle Length: 71
 Actuated Cycle Length: 66.5
 Natural Cycle: 75
 Control Type: Semi Act-Uncoord
 Maximum v/c Ratio: 0.73
 Intersection Signal Delay: 17.0
 Intersection Capacity Utilization 55.5%
 Analysis Period (min) 15

Intersection LOS: B
 ICU Level of Service B










Splits and Phases: 3: Syracuse Street & Tappan Street

 Ø2	 Ø4
46 s	25 s
 Ø6	
46 s	

Lanes, Volumes, Timings

3: Syracuse Street & Tappan Street







03/01/2021

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	188	15	9	816	644	234
Future Volume (vph)	188	15	9	816	644	234
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1780	0	0	1879	1803	0
Flt Permitted	0.956			0.990		
Satd. Flow (perm)	1775	0	0	1862	1803	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	6				42	
Link Speed (mph)	30			30	30	
Link Distance (ft)	552			533	520	
Travel Time (s)	12.5			12.1	11.8	
Confl. Peds. (#/hr)	2		3			3
Peak Hour Factor	0.89	0.89	0.87	0.87	0.94	0.94
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	228	0	0	948	934	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Detector Phase	4		2	2	6	
Switch Phase						
Minimum Initial (s)	8.0		40.0	40.0	40.0	
Minimum Split (s)	25.0		46.0	46.0	46.0	
Total Split (s)	25.0		46.0	46.0	46.0	
Total Split (%)	35.2%		64.8%	64.8%	64.8%	
Yellow Time (s)	2.5		4.0	4.0	4.0	
All-Red Time (s)	2.5		2.0	2.0	2.0	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	5.0			6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None		Min	Min	Min	
Act Effect Green (s)	13.4			40.1	40.1	
Actuated g/C Ratio	0.21			0.62	0.62	
v/c Ratio	0.61			0.82	0.82	
Control Delay	29.8			18.7	18.5	
Queue Delay	0.0			0.0	0.0	
Total Delay	29.8			18.7	18.5	
LOS	C			B	B	
Approach Delay	29.8			18.7	18.5	

Lanes, Volumes, Timings

3: Syracuse Street & Tappan Street

03/01/2021




						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Approach LOS	C			B	B	
Queue Length 50th (ft)	79			247	233	
Queue Length 95th (ft)	139			#562	#587	
Internal Link Dist (ft)	472			453	440	
Turn Bay Length (ft)						
Base Capacity (vph)	557			1157	1136	
Starvation Cap Reductn	0			0	0	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.41			0.82	0.82	

Intersection Summary

Area Type: Other
 Cycle Length: 71
 Actuated Cycle Length: 64.5
 Natural Cycle: 75
 Control Type: Semi Act-Uncoord
 Maximum v/c Ratio: 0.82
 Intersection Signal Delay: 19.8
 Intersection Capacity Utilization 70.6%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service C

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










Splits and Phases: 3: Syracuse Street & Tappan Street

 Ø2	 Ø4
46 s	25 s
 Ø6	
46 s	

Lanes, Volumes, Timings

3: Syracuse Street & Tappan Street







03/01/2021

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	156	9	13	725	582	205
Future Volume (vph)	156	9	13	725	582	205
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1782	0	0	1879	1805	0
Flt Permitted	0.955			0.984		
Satd. Flow (perm)	1770	0	0	1851	1805	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	4				41	
Link Speed (mph)	30			30	30	
Link Distance (ft)	552			533	520	
Travel Time (s)	12.5			12.1	11.8	
Confl. Peds. (#/hr)	4		2			2
Peak Hour Factor	0.85	0.85	0.94	0.94	0.97	0.97
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	195	0	0	785	811	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Detector Phase	4		2	2	6	
Switch Phase						
Minimum Initial (s)	8.0		40.0	40.0	40.0	
Minimum Split (s)	25.0		46.0	46.0	46.0	
Total Split (s)	25.0		46.0	46.0	46.0	
Total Split (%)	35.2%		64.8%	64.8%	64.8%	
Yellow Time (s)	2.5		4.0	4.0	4.0	
All-Red Time (s)	2.5		2.0	2.0	2.0	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	5.0			6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None		Min	Min	Min	
Act Effect Green (s)	12.2			40.1	40.1	
Actuated g/C Ratio	0.19			0.63	0.63	
v/c Ratio	0.56			0.67	0.70	
Control Delay	29.1			11.8	12.2	
Queue Delay	0.0			0.0	0.0	
Total Delay	29.1			11.8	12.2	
LOS	C			B	B	
Approach Delay	29.1			11.8	12.2	

Lanes, Volumes, Timings

3: Syracuse Street & Tappan Street

03/01/2021




						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Approach LOS	C			B	B	
Queue Length 50th (ft)	67			163	163	
Queue Length 95th (ft)	115			343	359	
Internal Link Dist (ft)	472			453	440	
Turn Bay Length (ft)						
Base Capacity (vph)	566			1171	1157	
Starvation Cap Reductn	0			0	0	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.34			0.67	0.70	

Intersection Summary

Area Type: Other
 Cycle Length: 71
 Actuated Cycle Length: 63.3
 Natural Cycle: 75
 Control Type: Semi Act-Uncoord
 Maximum v/c Ratio: 0.70
 Intersection Signal Delay: 13.9
 Intersection Capacity Utilization 66.9%
 Analysis Period (min) 15

Intersection LOS: B
 ICU Level of Service C

Splits and Phases: 3: Syracuse Street & Tappan Street

 Ø2	 Ø4
46 s	25 s
 Ø6	
46 s	