



T Consulting



1396 White Bridge Road
Chittenango, NY 13037

Tel: (315) 391-5110 Fax: (315) 687-6267

June 25, 2023

Keystone Associates
58 Exchange Street
Binghamton, NY 13901

Attn: Mr. Kenneth Ellsworth

**Re: Updated Traffic Impact Study – Proposed Five Mile Point Warehouse Development
Grosset Drive – Town of Kirkwood, NY**

Dear Mr. Ellsworth:

I have completed my updated review of traffic operations associated with the proposed Five Mile Point warehouse development in the Town of Kirkwood, NY. This letter summarizes the work completed in this review as well as my findings.

Project Understanding

The existing Five Mile Point Speedway is located to the southeast of the intersection of Frances Street with Roberts Street in the Town of Kirkwood, NY. The proposed redevelopment of the site includes two warehouse buildings. Warehouse building #1 is 191,400 SF and Warehouse building #2 is 264,000 SF, for a total site build out of 455,400 SF. The proposed development will be accessed from Grosset Drive via NYS Route 11. There will be no access to Frances Street.

Grosset Drive also provides access to the existing Triumph Business Center. With 436,814 SF of occupied space in the Triumph Business Center, the proposed Five Mile Point Warehouse development is anticipated to have similar traffic operations.

A layout plan developed by Keystone Associates, dated March 21st, 2023, has been attached.

Data Collection

Site visits were conducted on Wednesday, March 9th, 2022 and Wednesday May 24th, 2023 to collect the following:

- Existing Traffic Volume Counts – Traffic turning movement counts were collected at following 5 study area intersections during the weekday morning (7-9am), and weekday evening (4-6pm) peak travel periods to ensure that the actual peak hours of the adjacent streets were captured.
 - Frances Street @ I-81 / I-86 access road
 - Frances Street @ Crescent Drive
 - Frances Street @ Roberts Street
 - US Route 11 @ Crescent Drive / Water Street
 - US Route 11 @ Grosset Drive

**Re: Traffic Impact Study – Proposed Five Mile Point Warehouse Development
Grosset Drive – Town of Kirkwood, NY**

The traffic counts included separate heavy vehicles per approach and pedestrians. There were minor pedestrian volumes during the traffic count periods and all area schools were in session.

- I-81 / I-86 Access Road and US Route 11 Gap Data – Gap data was collected to assess the ability for vehicles to turn on and off the primary roadways in the area. In order for a vehicle to turn right onto the I-81 / I-86 access road from Frances Street, the vehicle only requires a gap in the eastbound direction on the access road. A vehicle only requires a gap in the northbound direction on US Route 11 to turn right off Crescent Drive or Grosset Drive. These gaps would also apply to vehicles turning left onto Frances Street from the access road or left onto Crescent Drive or Grosset Drive from US Route 11. A vehicle requires a gap in traffic in both directions at the same time to turn left onto US Route 11 from Crescent Drive or Grosset Drive.

These gaps in traffic were observed and timed on the I-81 / I-86 access road at Frances Street and on US Route 11 at both Crescent Drive and Grosset Drive during the weekday traffic count periods. The gaps were then converted to a number of vehicles that could turn left or right out of side roads during each gap and then totaled for the peak hour. For example, one vehicle can turn from the side road with a 6-9 second gap in traffic, two can turn with a 10-13 second gap, 3 with a 14-17 second gap, 4 with an 18-19 second gap, etc.

- Spot Speed Measurements – 50 speed measurements were collected in each direction on the I-81 / I-86 access road passing Frances Street and on US Route 11 passing both Crescent Drive and Grosset Drive to identify average and 85th percentile operating speeds in the area passing the primary access locations to the study area. The data was collected for free flow traffic during off-peak times. The weather was sunny and the roadway was dry.
- Sight Distance Measurements – Sight lines looking west along the access road from Frances Street, and north/south along US Route 11 from both Crescent Drive and Grosset Drive were collected for comparison to design standards in order to confirm that adequate sight lines are available for safe ingress and egress from the site and primary roadways.
- Operational Data - Other data needed to evaluate traffic operations, such as intersection geometry, control, and speeds limits were also collected

Existing Operations

Frances Street, Crescent Drive, and Robert Street have one lane in each direction through the study area. Frances Street and Crescent Drive operate as a cut through roadway between US Route 11 to the south of the study area and the I-81 / I-86 access road. Frances Street has free flow traffic movement with side street stop sign control at the intersections with Crescent Drive and Roberts Drive. The posted speed limits on Frances Street is 35 mph to the west of Crescent Drive and 30 mph to the east.

Mr. Ellsworth
June 25, 2023
Page 3 of 13

**Re: Traffic Impact Study – Proposed Five Mile Point Warehouse Development
Grosset Drive – Town of Kirkwood, NY**

The posted speed limit on Crescent Drive is 35 mph to the south of Frances Street and 30 mph to the north.

The I-81 / I-86 access road connects US Route 11 north of the study area to I-81 and I-86. The roadway has two lanes in each direction with a 30-40 foot grass median and an auxiliary westbound left turn lanes at Frances Street. Frances Street is stop controlled at the access road with right turns only allowed. The speed limit on the access road is assumed to be 55 mph.

US Route 11 has one lane southbound and two lanes northbound at the Crescent Drive intersection with auxiliary northbound and southbound left turn lanes. There is a northbound right turn slip ramp onto Crescent Drive. Crescent Drive and Water Street are stop sign controlled at the intersection with free flow traffic movements on US Route 11. The posted speed limit on US Route 11 is 55 mph.

US Route 11 has one lane in each direction at the Grosset Drive intersection. Grosset Drive also has one lane in each direction and is stop signed controlled at US Route 11 with free flow traffic on US Route 11. The posted speed limit on US Route 11 is 55 mph. The assumed speed limit on Grosset Drive is 30 mph.

Based on the traffic counts collected at the 5 study area intersections, the area peak hours were identified as follows:

Weekday Morning Peak Hour –8:00-9:00am
Weekday Evening Peak Hour – 4:00pm to 5:00pm

The 2022 existing traffic volumes collected in March are shown in the attached Figure 1 for the weekday morning and weekday evening peak hours.

The existing traffic counts were reviewed and compared to historical traffic volume data in the area to identify any necessary adjustments to account for seasonal adjustments or for lingering impacts from the Covid pandemic. Specifically, the following 3 historical directional traffic counts were reviewed:

- Frances Street EB/WB – 11/2/2015 – Collected 136 yards north of Crescent Drive.
- Frances Street EB/WB – 5/1/2018 – Collected 200 feet east of Robert Street.
- Crescent Drive NB/SB – 5/12/2015 – Collected 204 feet north of Williams Street.

The 2022 total directional traffic volumes traveling past the 3 count locations were compared to the total directional volumes from historical counts and were found to be 22% higher in 2022 during the morning peak hour and 29% lower in 2022 during the evening peak hour. The 2022 existing March traffic volumes were therefore not adjusted during the morning peak hour since they were significantly higher than historical counts. The 2022 evening peak hour volumes were adjusted by applying a +30% adjustment factor to account for both seasonal variations in traffic as well as any lingering impacts

**Re: Traffic Impact Study – Proposed Five Mile Point Warehouse Development
Grosset Drive – Town of Kirkwood, NY**

from the COVID pandemic. The adjusted 2022 weekday morning and weekday evening peak hour traffic volumes are shown in Figure 2. The 2022 traffic count data has also been attached.

Frances Street and Crescent Drive carry approximately 100-200 vehicles in each direction between the I-81 / I-86 access road and US Route 11 during both peak hours. There are less than 100 vehicles in each direction during the peak hours on both Frances Street and Crescent Drive to the north and east of the Frances/Crescent intersection during both peak hours. The I-81 / I-86 access road and US Route 11 each carry approximately 200-300 vehicles in each direction passing the study area. Overall, this area would be considered to have low to moderate traffic volumes during the peak hours.

Based on the gap data collected, there are sufficient gaps in traffic to accommodate over 550 vehicles turning right onto the I-81 / I-86 access road from Frances Street during both peak hours. These gaps are also available for vehicles turning left onto Frances Street. US Route 11 has sufficient gaps to accommodate over 600 vehicles turning right off Crescent Drive and 500 or more vehicles turning left off Crescent Drive during the peak hours. At Grosset Drive, US Route 11 has sufficient gaps in traffic to accommodate over 500 vehicles turning right off Grosset Drive during each peak hour and over 450 vehicles turning left off Grosset Drive during both peak hours. There are no concerns with available gaps in traffic on the primary roadways to accommodate traffic generated by the proposed warehouse development. The gap data is attached.

The posted speed limits passing the site are 55 mph on both the access road and US Route 11. The speed data collected indicates that the average speeds passing Frances Street on the I-81 / I-86 access road are 51 mph in both directions with 85th percentile speeds of 54 mph eastbound and 53 mph westbound. Speeds are slightly lower on US Route 11 passing Crescent Drive with average speeds of 49 mph northbound / 48 mph southbound and 85th percentile speeds of 52 mph in both directions. The average speeds observed on US Route 11 at Grosset Drive were 50-51 mph in each direction with 85th percentile speeds of 55 mph northbound and 55.5 mph southbound. The speed data has been attached.

The following table provides a summary of the recommended sight distances along the I-81/ I-86 access road and US Route 11 from the AASHTO [A Policy on Design of Highways and Streets](#) as well as the available sight distances based on field measurements at the Grosset Drive access and primary roadways. The site distance turning left onto US Route 11 was adjusted for the additional lane to be crossed when turning off Crescent Drive.

**Re: Traffic Impact Study – Proposed Five Mile Point Warehouse Development
Grosset Drive – Town of Kirkwood, NY**

Sight Distance Summary

Location	Operating Speed	Direction	AASHTO Recommended Sight Distance	Available Sight Distance
Grosset Drive @ US Route 11 – Turning Left	55 mph	Looking Left Looking Right	610 feet 610 feet	1,000+ feet 1,000+ feet
Grosset Drive @ US Route 11 – Turning Right	55 mph	Looking Left	530 feet	1,000+ feet
Frances Street @ I-81 / I-86 Access Road – Turning Right	55 mph	Looking Left	530 feet	960 feet
Crescent Drive @ US Route 11 – Turning Left	55 mph	Looking Left Looking Right	610 feet 610 feet	1,400+ feet 1,400+ feet
Crescent Drive @ US Route 11 – Turning Right	55 mph	Looking Left	530 feet	1,400+ feet

There are more than adequate sight distances available at both of the existing Grosset Drive and Crescent Drive connections to US Route 11 as well the connection of Frances Street to the access road. There are no concerns with sight distances and safety for ingress and egress from the proposed development.

Capacity analysis of the existing traffic operations was completed using Synchro11. Synchro is industry accepted standard for the analysis of both signalized and unsignalized intersections that is based on methodologies developed in the Highway Capacity Manual. Intersection and individual movement operations are graded in terms of Level of Service ranging from A to F, as described in the HCM. For example, an unsignalized intersection movement with an average delay of 5 seconds per vehicle is considered a Level of Service A while an average delay per vehicle of 20 seconds is considered a C. A Level of Service D or better is generally considered acceptable for a signalized intersection while a Level of Service E or better is generally considered acceptable for an unsignalized intersection.

The results of the capacity analysis indicate that all traffic movements in the study area are operating at acceptable Levels of Service B or better during both the morning and evening peak hours.

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

Accident Analysis

An accident analysis was completed for the project study area using history reports obtained for a three year period from November 2018 through October 2021. Over the three year period, there were 18 total accidents in the study area dispersed over the following locations:

**Re: Traffic Impact Study – Proposed Five Mile Point Warehouse Development
Grosset Drive – Town of Kirkwood, NY**

There were 4 midblock accidents along Frances Street including 3 fixed object accidents, and 1 backing on accident. The calculated accident rate is 2.24 accidents per million vehicle miles along Frances Street, which is statistically equal to the statewide average of 2.23 accidents per million vehicle miles for similar facilities.

There were 2 midblock accidents along Crescent Drive including 1 left turn accident and 1 right turn accident. The calculated accident rate is 2.56 accidents per million vehicle miles along Crescent Drive, which is above the statewide average of 2.23 accidents per million vehicle miles for similar facilities.

There were 2 midblock fixed object accidents along US Route 11. The calculated accident rate is 0.35 accidents per million vehicle miles along US Route 11 which is below the statewide average of 2.23 accidents per million vehicle miles for similar facilities.

Frances Street @ I-81 / I-86 Access Road – 4 accidents – There were 3 left turn accidents and 1 right turn accident. Assuming that the evening peak hour volumes are 9% of the total daily traffic traveling through the intersection, the accident rate is 0.43 accidents per million entering vehicles, which is above the statewide average of 0.12 accidents per million entering vehicles for similar facilities.

Frances Street @ Crescent Avenue – 1 Accident – There was 1 right angle accident at the intersection. Assuming that the evening peak hour volumes are 9% of the total daily traffic traveling through the intersection, the accident rate is 0.19 accidents per million entering vehicles, which is below the statewide average of 0.29 accidents per million entering vehicles for similar facilities.

Frances Street @ Roberts Street – 1 Accident – There was 1 right angle accident at the intersection. Assuming that the evening peak hour volumes are 9% of the total daily traffic traveling through the intersection, the accident rate is 0.71 accidents per million entering vehicles, which is above the statewide average of 0.29 accidents per million entering vehicles for similar facilities.

Crescent Drive @ US Route 11 – 1 Accident – There was 1 rearend accident at the intersection. Assuming that the evening peak hour volumes are 9% of the total daily traffic traveling through the intersection, the accident rate is 0.14 accidents per million entering vehicles, which is below the statewide average of 0.29 accidents per million entering vehicles for similar facilities.

Grosset Drive @ US Route 11 – 1 Accident – There was 1 animal related accident at the intersection. Assuming that the evening peak hour volumes are 9% of the total daily traffic traveling through the intersection, the accident rate is 0.16 accidents per million entering vehicles, which is below the statewide average of 0.18 accidents per million entering vehicles for similar facilities.

There was 1 accident in an area parking lot and 1 accident with an unknown location.

Overall, 13 (72%) of the accidents in the study area were property damage only accidents with 5 injury accidents (28%). There were no fatalities.

**Re: Traffic Impact Study – Proposed Five Mile Point Warehouse Development
Grosset Drive – Town of Kirkwood, NY**

With 4 accidents or less at each of the intersections and on each midblock segment, there are no clear accident patterns noted. The accidents rates are skewed by the low traffic volumes in the area and do not demonstrate any significant safety concern.

The detailed accident summary has been attached.

2024 Background Operations

The proposed Five Mile Point warehouse development is assumed to be completed in 2024, therefore 2024 was used as the design year for this study. In order to fully understand the impacts of the development on the adjacent roadway system, analysis of the operations immediately before the project opening must first be completed. The existing traffic volumes were first adjusted by a growth rate to account for any unknown development that may occur prior to completion of the project.

Historical traffic volumes along Crescent Drive, the I-81 / I-86 access road and US Route 11 were taken from the NYSDOT Traffic Data Viewer website and reviewed in order to identify an appropriate background growth rate. The long term growth rates in the area on the three roadways were -1.2% per year on Crescent Drive (2000 to 2019), -1.0% per year on the access road (2000 to 2019), and -0.8% per year on US Route 11 (2009 to 2019). In order to maintain a conservative analysis, a positive +0.5% per year growth was chosen and used to grow the 2022 existing traffic volumes to the 2024 background condition.

The Town of Kirkwood was contacted and indicated that there were no specific developments that needed to be included in the background growth projections.

The 2024 background traffic volumes with 1% total growth are shown in Figure 3 for the weekday morning and weekday evening peak hours.

The capacity analysis of the 2024 background condition shows minor increases in delay at the study area intersections during the peak hours studied. All traffic movements continue to operate at Level of Service B or better during both peak hours. The detailed Level of Service summary and capacity analysis printouts have been attached.

Trip Generation Estimate and Distribution

The proposed Five Mile Point warehouse development includes a 191,400 SF warehouse building (#1) and a 264,000 SF warehouse building #2, for a total development of 455,400 SF.

As noted previously, the proposed development is similar in size to the existing Triumph Business Center which has 436,814 SF of occupied space. Tri-State Traffic Data was contracted to collect existing traffic generation counts for the Triumph Business Center on Grosset Drive using automated

**Re: Traffic Impact Study – Proposed Five Mile Point Warehouse Development
Grosset Drive – Town of Kirkwood, NY**

traffic recorders (road tubes) for a one week period between Friday, March 17th and Friday, March 24th, 2023. The counts were collected just south of the Triumph driveways to avoid capturing any of the other business traffic along Grosset Drive. Tri-State is a professional data collection firm out of Pennsylvania that has been collecting data for area engineering firms for over 28 years.

Based on the data collected, the existing Triumph Business Center development generally generates less than 20 trips entering and exiting per hour over the course of a typical weekday, with approximately 20-25 total trips entering and exiting during the weekday morning and evening peak commuter hours. The following provides a summary of the daily and peak hour traffic volumes generated during each day between the 17th and the 24th.

Saturday – March 18th, 2023

- Total Trips Generated = 203 vehicles – 107 Entering / 96 Exiting
 - 8:00-9:00am – 7 vehicles entered / 4 vehicles exited
 - 4:00-5:00pm – 1 vehicles entered / 2 vehicles exited

Sunday – March 19th, 2023

- Total Trips Generated = 179 vehicles – 95 Entering / 84 Exiting
 - 8:00-9:00am – 6 vehicles entered / 6 vehicles exited
 - 4:00-5:00pm – 4 vehicles entered / 5 vehicles exited

Monday – March 20th, 2023

- Total Trips Generated = 500 vehicles – 256 Entering / 244 Exiting
 - 8:00-9:00am – 20 vehicles entered / 10 vehicles exited
 - 4:00-5:00pm – 20 vehicles entered / 23 vehicles exited

Tuesday – March 21st, 2023

- Total Trips Generated = 451 vehicles – 227 Entering / 224 Exiting
 - 8:00-9:00am – 24 vehicles entered / 12 vehicles exited
 - 4:00-5:00pm – 14 vehicles entered / 16 vehicles exited

Wednesday – March 22nd, 2023

- Total Trips Generated = 510 vehicles – 269 Entering / 241 Exiting
 - 8:00-9:00am – 29 vehicles entered / 16 vehicles exited
 - 4:00-5:00pm – 12 vehicles entered / 12 vehicles exited

Thursday – March 23rd, 2023

- Total Trips Generated = 553 vehicles – 287 Entering / 266 Exiting
 - 8:00-9:00am – 24 vehicles entered / 11 vehicles exited
 - 4:00-5:00pm – 14 vehicles entered / 23 vehicles exited

**Re: Traffic Impact Study – Proposed Five Mile Point Warehouse Development
Grosset Drive – Town of Kirkwood, NY**

Friday – March 19th, 2023 Morning Hours plus March 24th, 2023 – Afternoon/Evening Hours

- Total Trips Generated = 459 vehicles – 259 Entering / 200 Exiting
 - 8:00-9:00am – 19 vehicles entered / 10 vehicles exited
 - 4:00-5:00pm – 12 vehicles entered / 18 vehicles exited

Based on the count data collected at the Triumph Business Center, the existing development is generating an average of 23 vehicles entering/ 12 vehicles exiting during the weekday morning peak hour and 14 vehicles entering / 18 vehicles exiting during the weekday evening peak hour.

The detailed hourly count data is summarized below.

Hour Beginning	Fri – 3/17		Sat – 3/18		Sun – 3/19		Mon – 3/20		Tues – 3/21		Wed – 3/22		Thurs – 3/23		Fri – 3/24	
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
12am	-	-	2	2	2	2	4	2	7	2	5	3	3	1	7	3
1am	-	-	0	0	5	1	4	0	3	4	0	3	2	3	0	6
2am	-	-	3	1	0	1	10	6	8	4	11	2	11	5	10	3
3am	-	-	2	3	3	3	8	3	7	5	10	4	7	2	3	4
4am	-	-	5	4	5	3	2	3	5	4	7	8	3	3	4	2
5am	-	-	9	1	6	5	11	5	9	6	9	4	11	7	16	8
6am	-	-	15	5	14	9	19	10	22	10	26	11	28	14	25	13
7am	-	-	5	9	3	4	13	9	12	8	15	8	14	7	13	8
8am	-	-	7	4	6	6	20	10	24	12	29	16	24	11	19	10
9am	-	-	7	4	2	2	17	12	10	9	18	12	16	8	24	13
10am	-	-	4	3	3	2	22	17	11	13	10	10	21	21	11	15
11am	-	-	12	12	2	4	12	16	17	14	24	23	26	22	15	16
12pm	23	25	8	11	7	2	20	26	15	22	10	19	16	28	-	-
1pm	12	12	1	2	3	4	11	12	14	12	14	12	9	12	-	-
2pm	11	16	4	10	7	8	17	17	15	15	17	16	23	18	-	-
3pm	12	22	2	3	1	4	17	22	14	33	10	26	17	22	-	-
4pm	12	18	1	2	4	5	20	23	14	16	12	12	14	23	-	-
5pm	12	15	2	2	7	5	11	24	6	16	16	21	13	21	-	-
6pm	8	9	4	6	4	6	7	11	7	7	8	13	10	11	-	-
7pm	2	3	2	2	0	1	2	4	2	5	2	2	3	5	-	-
8pm	3	3	0	1	1	0	3	1	2	2	3	5	2	4	-	-
9pm	2	3	4	1	4	3	3	4	1	3	4	4	6	5	-	-
10pm	2	2	5	6	3	2	0	1	0	1	6	3	5	9	-	-
11pm	3	1	3	2	3	2	3	6	2	1	3	4	3	4	-	-

**Re: Traffic Impact Study – Proposed Five Mile Point Warehouse Development
 Grosset Drive – Town of Kirkwood, NY**

The trips generated by the proposed Five Mile Point Warehouse development were estimated using the Institute of Transportation Engineers (ITE) Trip Generation, 11th Edition, which is the industry accepted standard for estimating traffic generated by new developments. Estimates were prepared for the following five most common types of industrial development:

- Land Use 110 – General Light Industrial
- Land Use 140 – Manufacturing
- Land Use 150 – Warehousing
- Land Use 155 – High Cube Fulfillment Center with Small Package Sorting
- Land Use 157 – High Cube Cold Storage Warehouse

The warehouse land use most closely resembles the existing operations at the Triumph Business Center and realistically represents the anticipated types of development that will utilize the proposed spaces at the proposed Five Mill Point Warehouse development. The following table summarizes the expected trip generation for the proposed development.

Trip Generation Summary – Expected Warehouse Uses

	Morning Peak Hour		Evening Peak Hour	
	Entering	Exiting	Entering	Exiting
Warehouse – 455,400 SF	59	18	23	59

The detailed trip generation calculations have been attached.

The ITE Trip Generation includes estimates for specific truck traffic generated by the various industrial uses reviewed. The anticipated warehouse truck generation estimates based on 455,400 SF is 136 truck entering and 136 trucks exiting per day. Assuming a typical 16 hour operation over two shifts, 136 trucks entering and exiting would average to approximately 8-9 trucks entering/exiting per hour. This equates to only 1 truck every 7-8 minutes. It is noted that the total trip generation estimate includes the truck trips, therefore the truck trips noted above are not additional to the overall estimate.

Based on existing traffic patterns and population centers in the area, the following distribution of new trips is assumed:

- 55% travels to/from I-81 / I-86 on Frances Street
- 30% travels to/from the north on US Route 11
- 15% travel to/from the south on US Route 11

The arrival / departure trip distribution is shown in Figure 4. The trips generated during each peak

**Re: Traffic Impact Study – Proposed Five Mile Point Warehouse Development
Grosset Drive – Town of Kirkwood, NY**

hour are shown in Figure 5. The resultant full build traffic volumes expected when the development is complete are shown in Figure 6 for the weekday morning and weekday evening peak hours.

Build Operations

Capacity analysis of the build condition with the proposed Five Mile Point warehouse development was completed with no improvements assumed on the area roadways.

The results of the analysis indicate that the development will have very little impact on traffic operations in the study area with nearly all Levels of Service being maintained from the background condition during both peak hours. The only drop in Level of Service noted is the Crescent Drive approach to US Route 11, which drops from Level of Service B to C with a minor increase in average delay per vehicle of +7 seconds during the morning peak hour and +2 seconds during the evening peak hour. All other traffic movements in the study area will continue to operate at Levels of Service B or better during both peak hours.

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

Build Operations – Conservative Traffic Projections

It is acknowledged that the potential trip generation for industrial development varies significantly depending on the specific end users that come into the development.

Based on the five potential types of use reviewed in the trip generation estimate, a fulfillment center with small package sorting is the highest potential traffic generator in the industrial land uses. This type of development, however, is not a realistic potential for the proposed Five Mile Point site for a number of reasons. First, the development is split into two approximately 200,000 SF buildings. Fulfillment centers typically operate in single building ranging between 500,000-1,000,000 SF. Secondly, the proposed development does not include cross docking in the buildings which is essential for a distribution facility operation. Therefore, this land use was not considered any further.

The next most conservative land use is general light industrial, which was therefore used to evaluate a “worst case” industrial traffic generator using the proposed development space. The following table provides a summary of the trip generation potential with the general light industrial land use.

Trip Generation Summary – Worst Case Light Industrial Uses

	Morning Peak Hour		Evening Peak Hour	
	Entering	Exiting	Entering	Exiting
Light Industrial – 455,400 SF	297	40	41	255

**Re: Traffic Impact Study – Proposed Five Mile Point Warehouse Development
Grosset Drive – Town of Kirkwood, NY**

While the general light industrial use has a significantly higher traffic generating potential than the warehouse use, the bulk of the traffic is passenger cars associated employees. In fact, the ITE trip generation estimates significantly lower daily truck generation volumes with only 57 trucks entering/exiting per day for a light industrial land use.

The trips generated during each peak hour with the most conservative light industrial land uses were distributed through the study area as shown in Figure 7. The potential resultant full build traffic volumes with the more conservative light industrial land uses are shown in Figure 8 for the weekday morning and weekday evening peak hours.

A supplemental build conditions analysis was completed with the more conservative light industrial build traffic volumes to evaluate the greatest potential impact on traffic operations in the area. Even with the higher trip generation numbers, the majority of the traffic movements in the study continue to operate at Level of Service B or better during both peak hours with Levels of Service consistent with the background conditions. The following drops in Level of Service are noted:

- US Route 11 @ Crescent Drive – The westbound approach of Crescent Drive to US Route 11 drops from Level of Service B during both peak hours to a borderline Level of Service F (52 seconds average delay) during the morning peak hour and Level of Service C during the evening peak hour.
- Frances Street @ Crescent Drive – The northbound approach drops from Level of Service B during both peak hours to Level of Service C during both peak hour with an increase in average delays of 2-6 seconds.

As noted, the potential failing level delay on Crescent Drive at US Route 11 during the morning peak hour is borderline. This potential delay is highly dependent on the actual volumes of traffic generated by the proposed development. It is recommended that this intersection be monitored as the development is occupied to determine if a traffic signal installation is warranted at the US Route 11 / Crescent Drive intersection. There are no other operational concerns in the study area even with the more conservative light industrial land use.

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

Conclusions

The proposed Five Mile Point warehouse development is anticipated to operate at levels consistent with the existing comparably sized Triumph Business Center in the Town of Kirkwood. With anticipated operations, the proposed development is only expected to generate approximately 59 vehicles entering/18 vehicles exiting during the morning peak hour and 23 vehicles entering/59 vehicles exiting during the evening peak hour. The additional traffic generated by the proposed Five



Mr. Ellsworth
June 25, 2023
Page 13 of 13

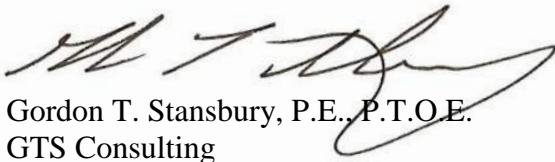
**Re: Traffic Impact Study – Proposed Five Mile Point Warehouse Development
Grosset Drive – Town of Kirkwood, NY**

Mile Point warehouse development will have no noticeable or significant impact on traffic operations in the study area.

In the event that the proposed development serves more labor intensive uses such as light industrial or manufacturing, the proposed development could potentially generate up to 297 vehicles entering during/40 vehicles exiting during the morning peak hour and 41 vehicles entering/255 vehicles exiting during the evening peak hour. This most intense use of the site could potentially cause longer delays turning left of Crescent Drive onto US Route 11, primarily during the morning peak hour. Under this level of use, the US Route 11/Crescent Drive intersection should be reviewed to determine if signalization is warranted. Even with the higher traffic generation, the proposed development is not anticipated to have any significant impact on traffic operations in the rest of the project study area.

If you have any questions or need additional information, please call.

Sincerely,



Gordon T. Stansbury, P.E., P.T.O.E.
GTS Consulting

- | | | |
|---------------|----------------------------|----------------------------|
| Attachments – | Site Plan | Level of Service Summary |
| | Traffic Volume Figures 1-8 | Gap Calculations |
| | Spot Speed Data | Growth Rate Calculations |
| | Trip Generation Estimate | Accident Data |
| | Count Data | Synchro Capacity Printouts |

NOT FOR CONSTRUCTION

INDUSTRIAL DEVELOPMENT
 PROJECT
 FRANCES STREET
 TOWN OF KIRKWOOD
 BROOME COUNTY, NY

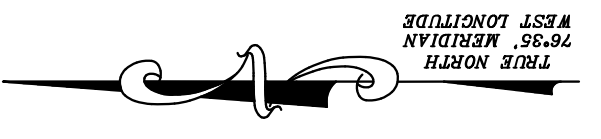
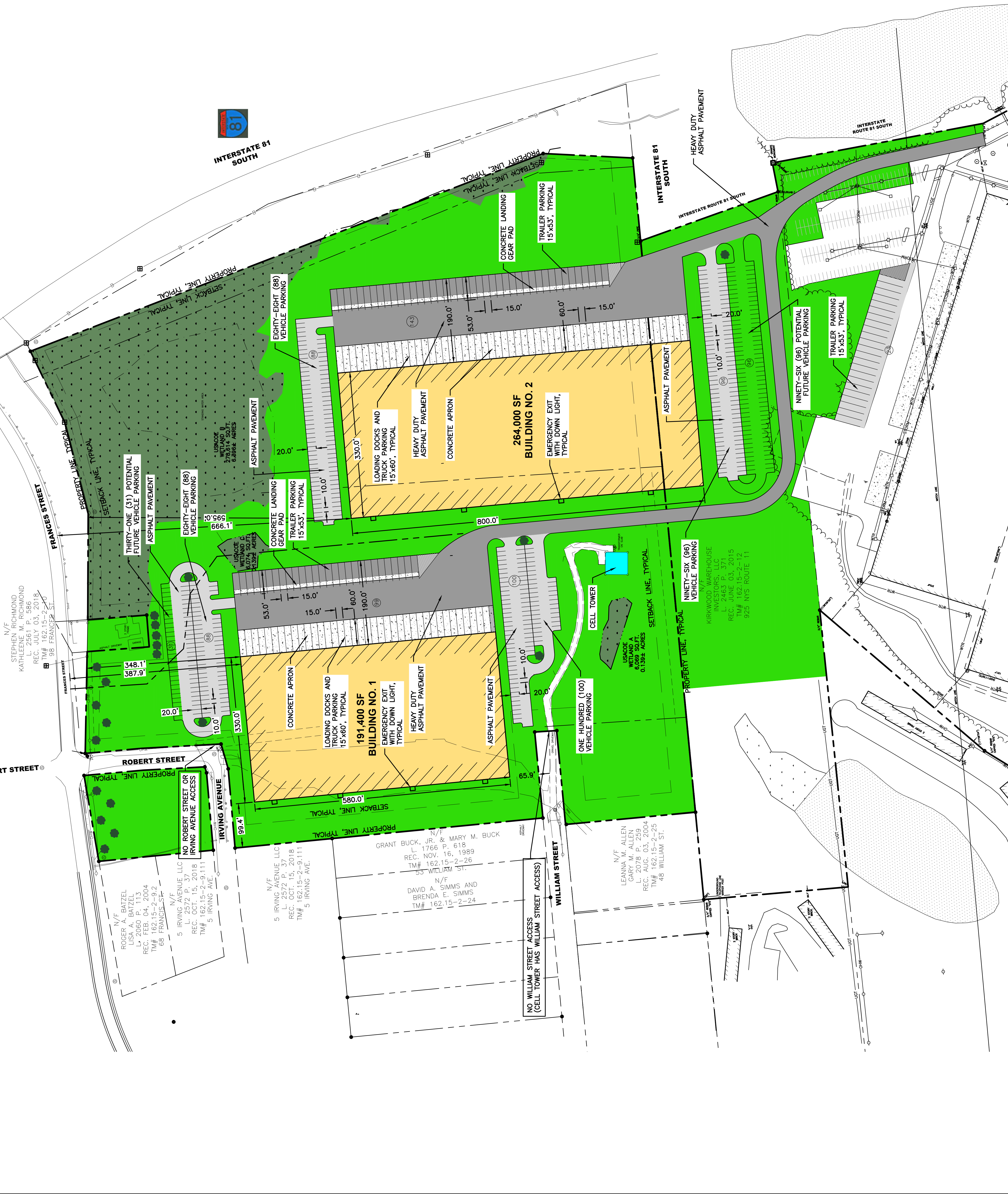
SHEET NO.
C100
 PROJECT NO.
 2410.89921
 DATE
 03/27/2023
 JOB FILE NO. 241039921-SITE

NO.	REVISION AND DATE

KeyStone Associates
 Architects, Engineers
 and Surveyors, LLC
 Copyright 2023

KEYSTONE ASSOCIATES
 ARCHITECTS, ENGINEERS AND SURVEYORS, LLC

58 Exchange Street
 Binghamton, New York 13901
 Phone: 607.722.1100
 Fax: 607.722.2515
 Email: info@keystonemp.com
 www.keystonemp.com



N/F
 STEPHEN RICHMOND
 KATHLENE M. RICHMOND
 L. 2561 P. 586
 REC. JULY 03, 2018
 TM# 162.15-2-07
 86 FRANCES ST.

N/F
 ROGER A. BATZEL
 ROSA BATZEL
 L. 2060 P. 113
 REC. FEB. 04, 2004
 TM# 162.15-2-9.2
 68 FRANCIS ST.

N/F
 IRVING AVENUE LLC
 L. 2572 P. 37
 REC. OCT. 15, 2018
 TM# 162.15-2-9.111
 5 IRVING AVE.

N/F
 IRVING AVENUE LLC
 L. 2572 P. 37
 REC. OCT. 15, 2018
 TM# 162.15-2-9.111
 5 IRVING AVE.

N/F
 GRANT BUCK, JR. & MARY M. BUCK
 L. 1766 P. 618
 REC. NOV. 16, 1989
 TM# 162.15-2-26
 55 WILLIAM ST.

N/F
 DAVID A. SIMMS AND
 BRENDA E. SIMMS
 L. 1766 P. 618
 REC. NOV. 16, 1989
 TM# 162.15-2-24

N/F
 LEANNA M. ALLEN
 GARY M. ALLEN
 L. 2078 P. 259
 REC. AUG. 03, 2004
 TM# 162.15-2-25
 48 WILLIAM ST.

KIRKWOOD WAREHOUSE
 INVESTORS, LLC
 L. 2463 P. 371
 REC. JUNE 03, 2015
 TM# 162.15-2-12
 925 NYS ROUTE 11

NO WILLIAM STREET ACCESS
 (CELL TOWER HAS WILLIAM STREET ACCESS)

NO ROBERT STREET OR
 IRVING AVENUE ACCESS

USADCE
 WETLAND D
 276,614 SQ. FT.
 6.886± ACRES

USADCE
 WETLAND C
 2,139± ACRES

USADCE
 WETLAND B
 276,614 SQ. FT.
 6.886± ACRES

USADCE
 WETLAND A
 0.139± ACRES

Proposed Five Mile Point Warehouse Development – Town of Kirkwood, NY

Intersection Level of Service Summary

Weekday Morning Peak Hour

Intersection	2021 Existing	2024 Background	2024 Build Build Warehousing	2024 Build Build Light Industrial
US Route 11 @ Grosset Drive				
WB Left/Right	b(11)	b(11)	b(12)	b(15)
NB Through/Right	a(0)	a(0)	a(0)	a(0)
SB Left/Through	a(1)	a(1)	a(2)	a(7)
US Route 11 @ Crescent Drive / Water Street				
EB Left/Through/Right	a(0)	a(0)	a(0)	a(0)
WB Left/Through/Right	b(15)	b(15)	c(22)	f(52)
NB Left	a(8)	a(8)	a(8)	a(8)
NB Through/Right	a(0)	a(0)	a(0)	a(0)
SB Left	a(8)	a(8)	a(8)	a(8)
SB Through/Right	a(0)	a(0)	a(0)	a(0)
Frances Street @ I-81 / I-86 Access Road				
EB Through/Right	a(0)	a(0)	a(0)	a(0)
WB Left	a(8)	a(8)	a(8)	a(9)
WB Through	a(0)	a(0)	a(0)	a(0)
NB Right	a(10)	a(10)	a(10)	a(10)
Frances Street @ Crescent Drive				
EB Left/Through/Right	a(1)	a(1)	a(1)	a(1)
WB Left/Through/Right	a(6)	a(6)	a(6)	a(6)
NB Left/Through/Right	b(12)	b(12)	b(13)	c(15)
SB Left/Through/Right	b(11)	b(11)	b(12)	b(11)
Frances Street @ Roberts Street				
EB Left/Through/Right	a(2)	a(2)	a(2)	a(2)
WB Left/Through/Right	a(0)	a(0)	a(0)	a(0)
NB Left/Through/Right	a(0)	a(0)	a(0)	a(0)
SB Left/Through/Right	a(9)	a(9)	a(9)	a(9)

a(9) – Unsignalized Level of Service (Average Delay per Vehicle in Seconds) – Synchro

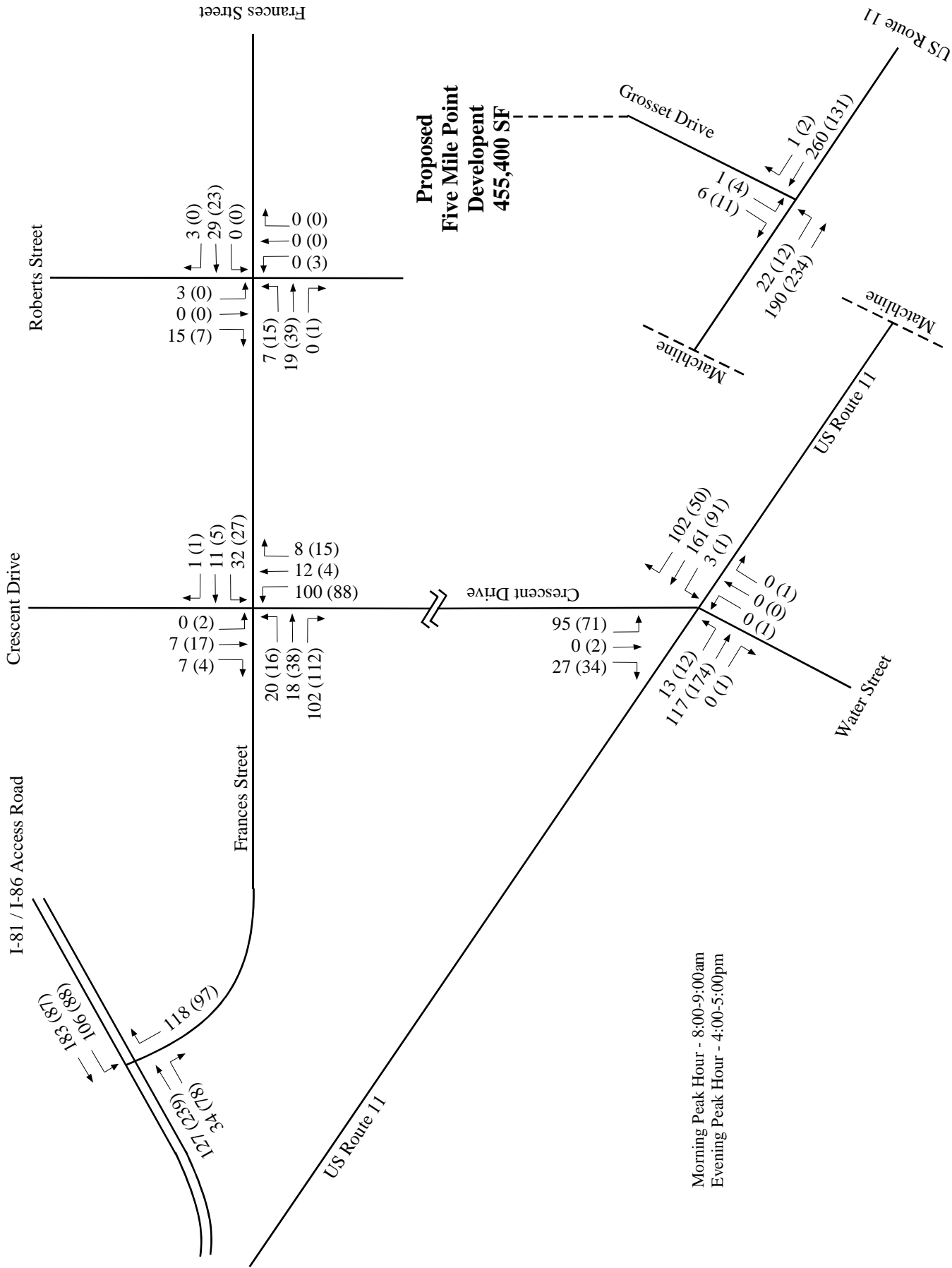
Proposed Five Mile Point Warehouse Development – Town of Kirkwood, NY

Intersection Level of Service Summary

Weekday Evening Peak Hour

Intersection	2021 Existing	2024 Background	2024 Build Build Warehousing	2024 Build Build Light Industrial
US Route 11 @ Grossett Drive				
WB Left/Right	b(11)	b(11)	b(11)	b(15)
NB Through/Right	a(0)	a(0)	a(0)	a(0)
SB Left/Through	a(1)	a(1)	a(1)	a(1)
US Route 11 @ Crescent Drive / Water Street				
EB Left/Through/Right	b(11)	b(11)	b(11)	b(11)
WB Left/Through/Right	b(14)	b(14)	c(16)	c(22)
NB Left	a(8)	a(8)	a(8)	a(8)
NB Through/Right	a(0)	a(0)	a(0)	a(0)
SB Left	a(8)	a(8)	a(8)	a(8)
SB Through/Right	a(0)	a(0)	a(0)	a(0)
Frances Street @ I-81 / I-86 Access Road				
EB Through/Right	a(0)	a(0)	a(0)	a(0)
WB Left	a(9)	a(9)	a(9)	a(9)
WB Through	a(0)	a(0)	a(0)	a(0)
NB Right	b(11)	b(11)	b(12)	b(15)
Frances Street @ Crescent Drive				
EB Left/Through/Right	a(1)	a(1)	a(1)	a(1)
WB Left/Through/Right	a(6)	a(6)	a(7)	a(7)
NB Left/Through/Right	b(14)	b(14)	b(15)	c(21)
SB Left/Through/Right	b(12)	b(12)	b(13)	b(13)
Frances Street @ Roberts Street				
EB Left/Through/Right	a(2)	a(2)	a(2)	a(2)
WB Left/Through/Right	a(0)	a(0)	a(0)	a(0)
NB Left/Through/Right	a(10)	a(10)	a(10)	a(10)
SB Left/Through/Right	a(9)	a(9)	a(9)	a(9)

a(9) – Unsignalized Level of Service (Average Delay per Vehicle in Seconds) – Synchro



Proposed Five Mile Point Warehouse Development - Town of Kirkwood, NY

2022 Existing Traffic Volumes - Collected March 2022
Morning (Evening) Peak Hour

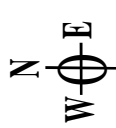
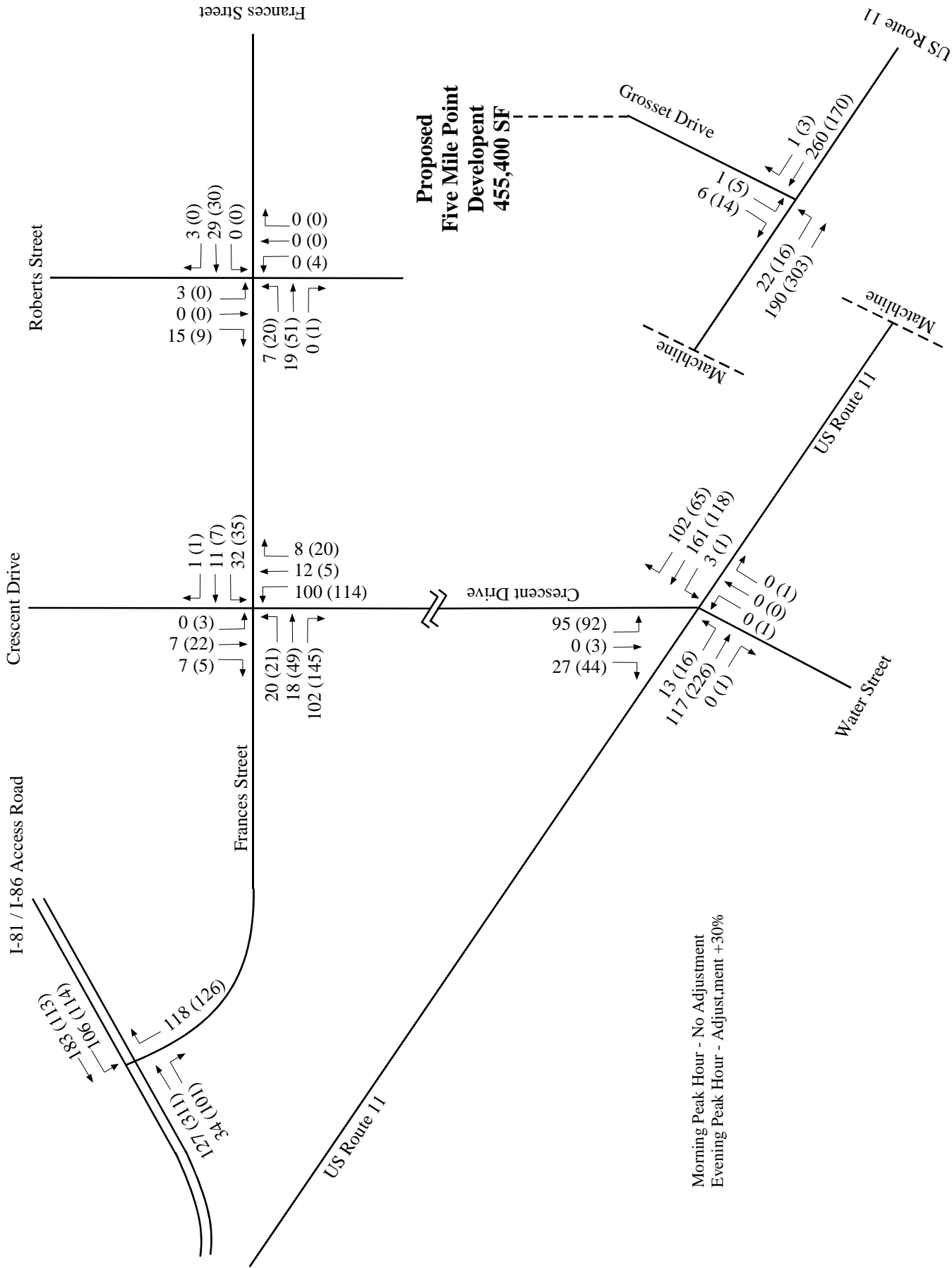


Figure 1



Proposed Five Mile Point Warehouse Development - Town of Kirkwood, NY

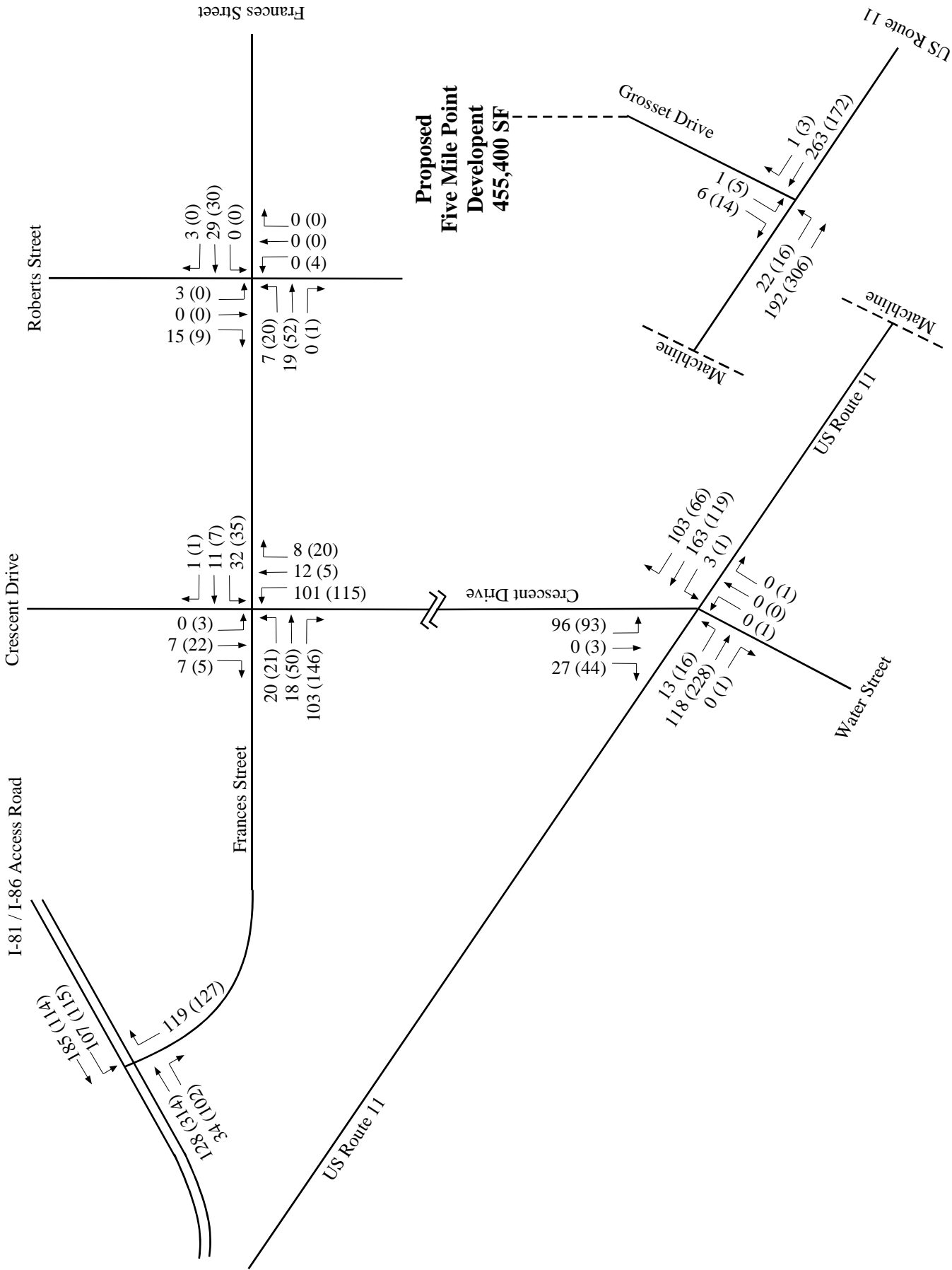
2022 Existing Traffic Volumes - Adjusted
 Morning (Evening) Peak Hour



GTS Consulting

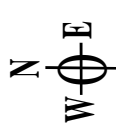
Not to Scale

Figure 2



Proposed Five Mile Point Warehouse Development - Town of Kirkwood, NY

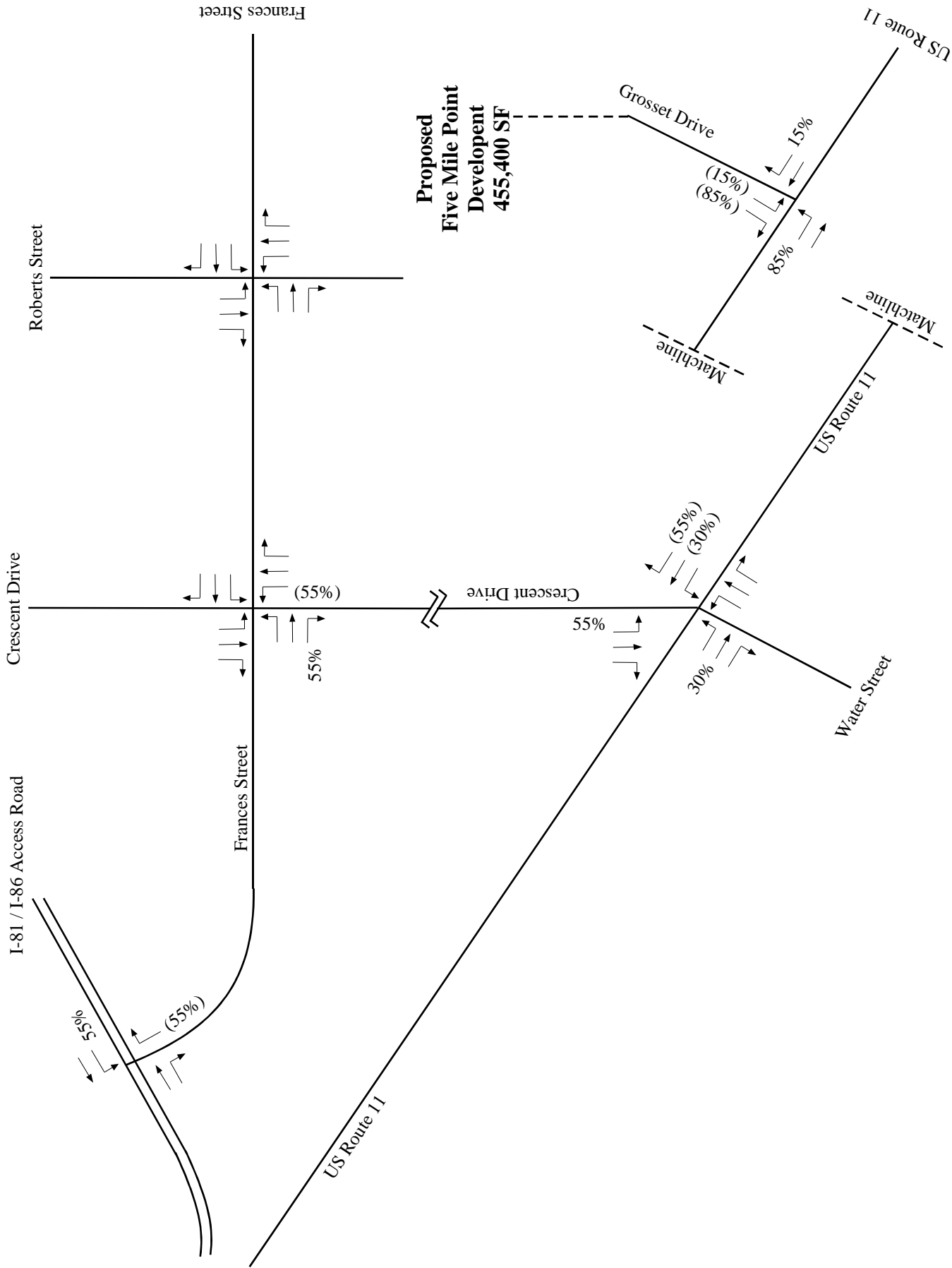
2024 Background Traffic Volumes - With 0.5% Growth per Year (1% Total)
Morning (Evening) Peak Hour



GTS Consulting

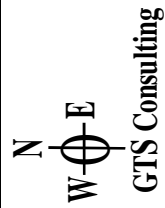
Not to Scale

Figure 3



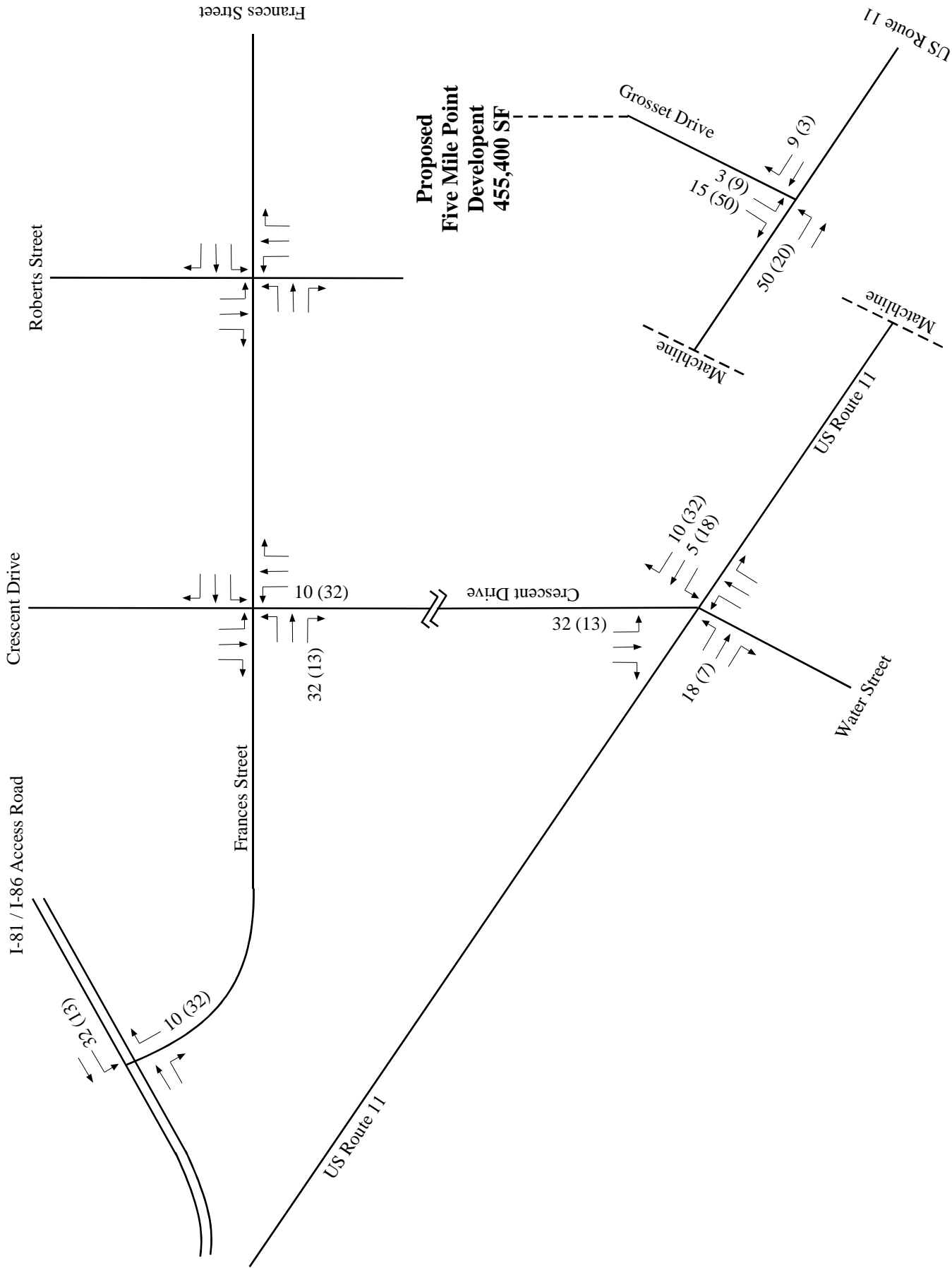
Proposed Five Mile Point Warehouse Development - Town of Kirkwood, NY

Arrival / Departure Trip Distribution
 Entering (Exiting) Trip Percentage



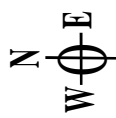
Not to Scale

Figure 4



Proposed Five Mile Point Warehouse Development - Town of Kirkwood, NY

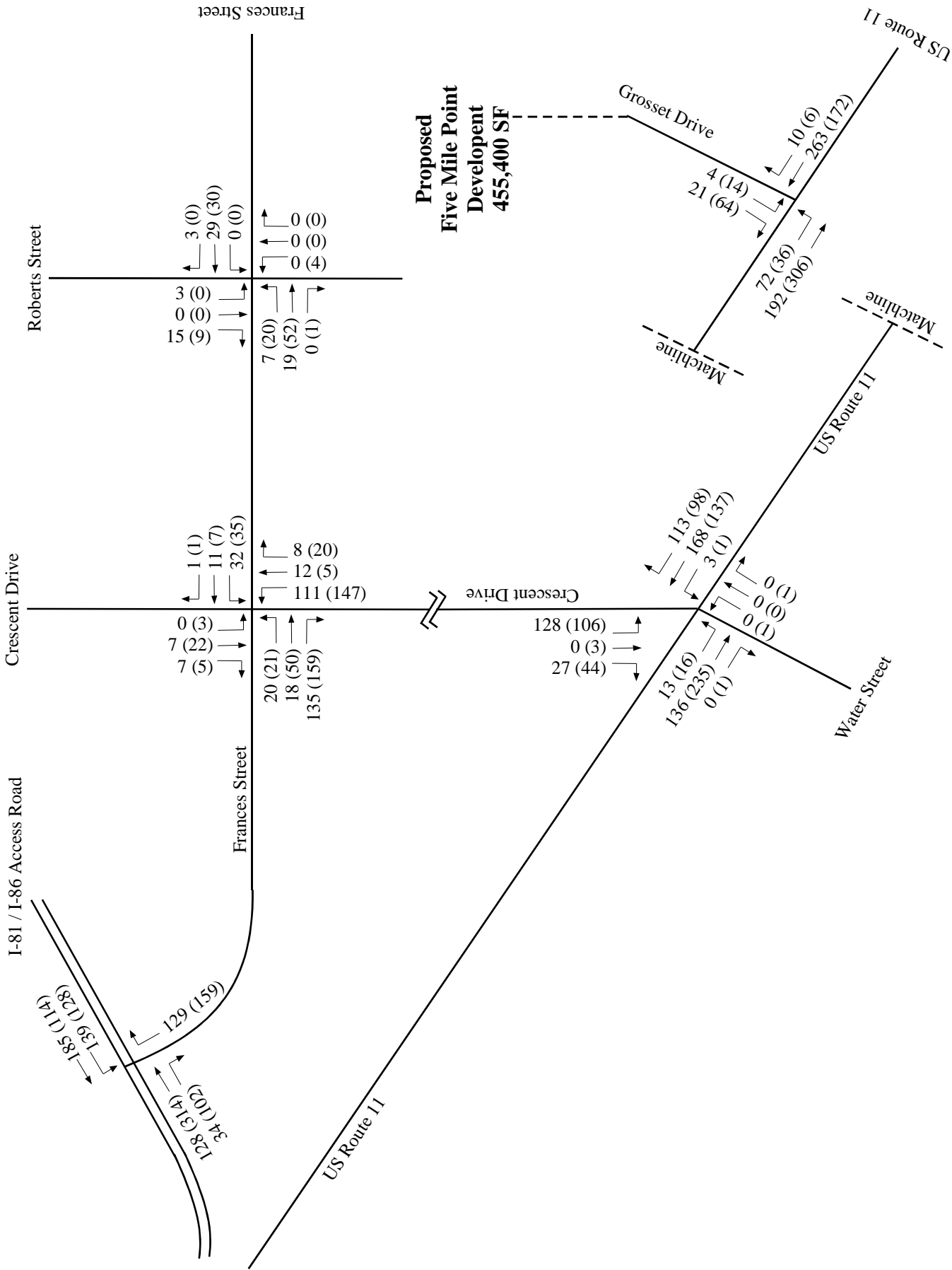
Trips Generated - Warehousing
Morning (Evening) Peak Hour



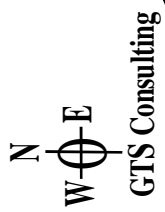
GTS Consulting

Not to Scale

Figure 5



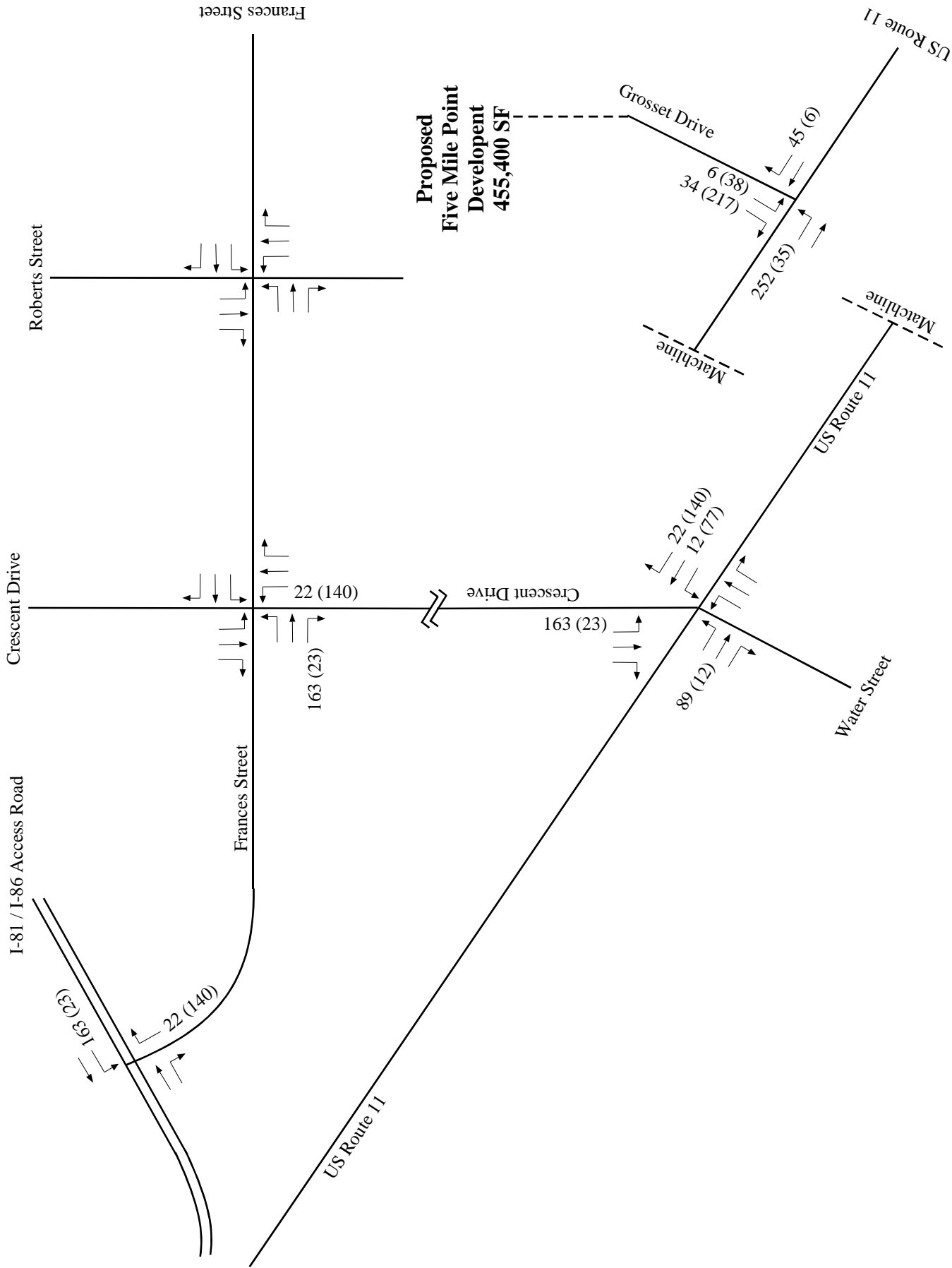
Proposed Five Mile Point Warehouse Development - Town of Kirkwood, NY
 2024 Build Traffic Volumes - Warehousing
 Morning (Evening) Peak Hour



GTS Consulting

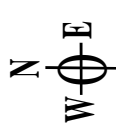
Not to Scale

Figure 6



Proposed Five Mile Point Warehouse Development - Town of Kirkwood, NY

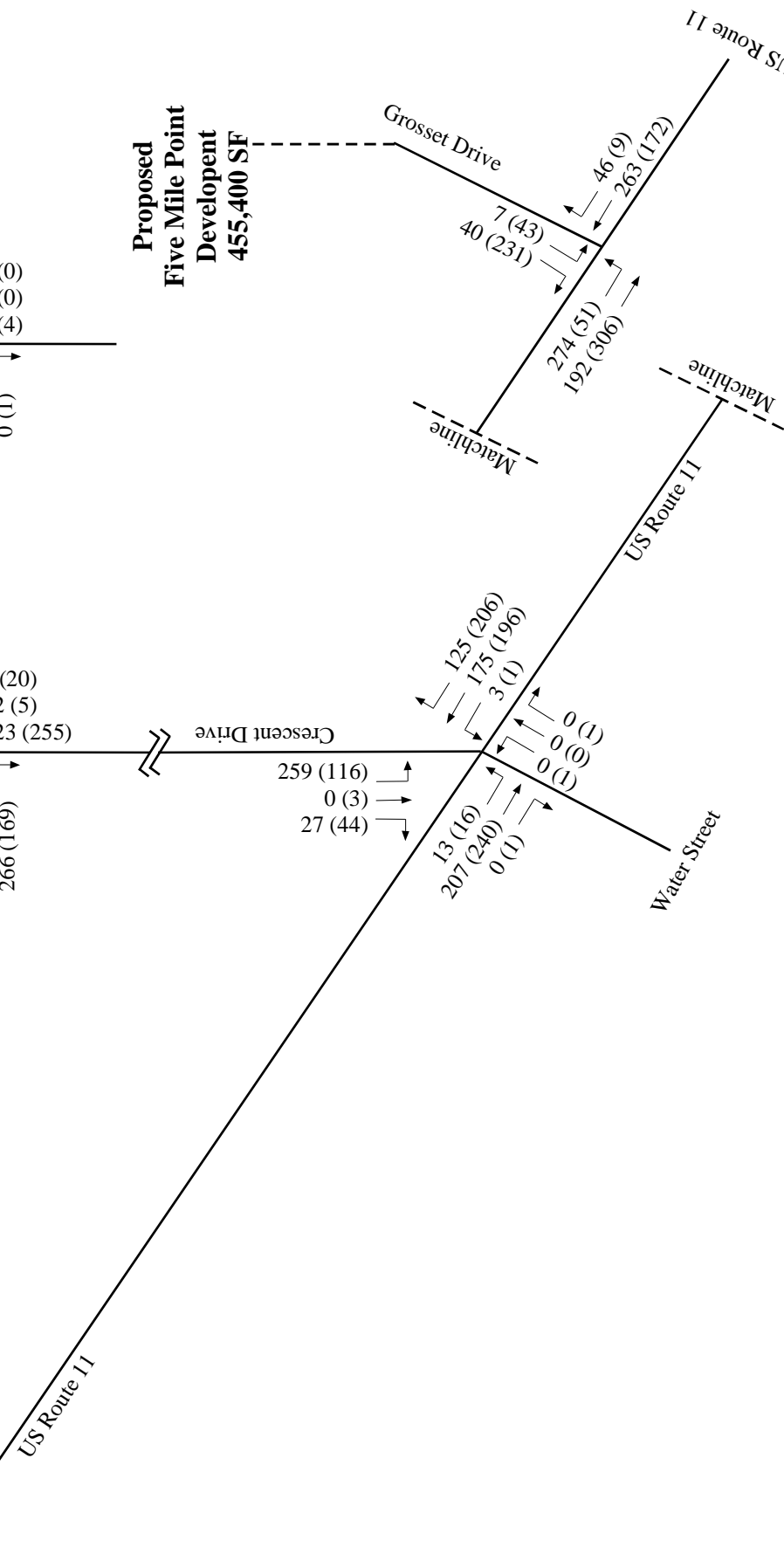
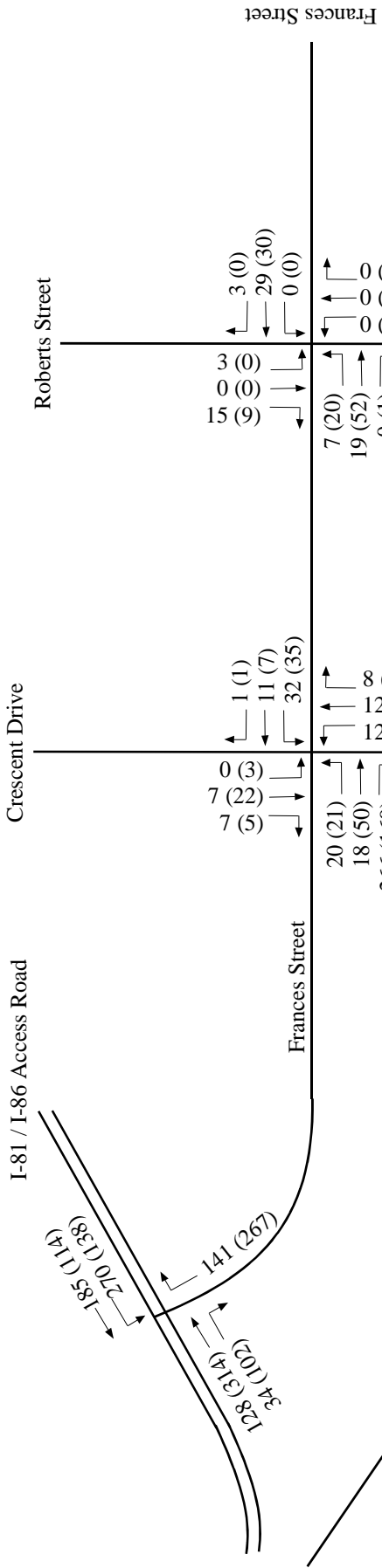
Trips Generated - Light Industrial
 Morning (Evening) Peak Hour



GTS Consulting

Not to Scale

Figure 7



**Proposed
Five Mile Point
Development
455,400 SF**



Proposed Five Mile Point Warehouse Development - Town of Kirkwood, NY

2024 Build Traffic Volumes - Light Industrial
Morning (Evening) Peak Hour

Figure 8

Not to Scale

GTS Consulting

Intersection Gap Study



Project: Proposed Five Mile Point Warehouse Development - Grosset Drive - Town of Kirkwood, NY
 Date: 5/24/2023

Intersection: Grosset Drive @ NYS Route 11
 Movement: Left Turns Exiting

Time Interval 6-9 sec 10-13 sec 14-17 sec 18-19 sec 20-23 sec 24-25 sec 26-29 sec >29 sec Interval Hour
 x 1 x 2 x 3 x 4 x 5 x 6 x 7 x 8 Total Total

Morning Peak Hour

	# of Gaps	10	5	5	5	5	6	2	2	2	1	
8:00-8:15am	# of Vehicles	10	10	15	20	30	12	14	8	119		
8:15-8:30am	# of Gaps	14	11	2	1	6	1	4	0			
	# of Vehicles	14	22	6	4	30	6	28	0	110		
8:30-8:45am	# of Gaps	13	10	5	3	2	0	5	1			
	# of Vehicles	13	20	15	12	10	0	35	8	113		
8:45-9:00am	# of Gaps	25	10	6	3	4	1	1	0			
	# of Vehicles	25	20	18	12	20	6	7	0	108		450

Evening Peak Hour

	# of Gaps	14	3	5	2	2	3	2	2	5	
4:00-4:15pm	# of Vehicles	14	6	15	8	10	18	14	40	125	
4:15-4:30pm	# of Gaps	16	10	7	0	1	2	3	2		
	# of Vehicles	16	20	21	0	5	12	21	16	111	
4:30-4:45pm	# of Gaps	17	6	5	2	3	1	2	4		
	# of Vehicles	17	12	15	8	15	6	14	32	119	
4:45-5:00pm	# of Gaps	19	7	3	3	5	0	3	4		
	# of Vehicles	19	14	9	12	25	0	21	32	132	487

Intersection Gap Study

Project: Proposed Five Mile Point Warehouse Development - Grosset Drive - Town of Kirkwood, NY
 Date: 3/9/2022



Intersection: Crescent Drive @ Route 11
 Movement: Left Turns Exiting

Time Interval 6-9 sec 10-13 sec 14-17 sec 18-19 sec 20-23 sec 24-25 sec 26-29 sec >29 sec Interval Hour
 x 1 x 2 x 3 x 4 x 5 x 6 x 7 x 8 Total Total

Morning Peak Hour

	# of Gaps	13	11	7	2	3	2	4	0	0	
8:00-8:15am	# of Vehicles	13	22	21	8	15	12	28	0	0	
8:15-8:30am	# of Gaps	18	7	4	1	2	0	1	8		
	# of Vehicles	18	14	12	4	10	0	7	64		
8:30-8:45am	# of Gaps	14	14	4	1	2	4	4	2		
	# of Vehicles	14	28	12	4	10	24	28	16		
8:45-9:00am	# of Gaps	12	7	6	6	2	1	1	3		
	# of Vehicles	12	14	18	24	10	6	7	24	115	499

Evening Peak Hour

	# of Gaps	13	9	8	0	3	2	1	5		
4:00-4:15pm	# of Vehicles	13	18	24	0	15	12	7	40	129	
4:15-4:30pm	# of Gaps	14	10	8	2	6	2	1	1		
	# of Vehicles	14	20	24	8	30	12	7	8	123	
4:30-4:45pm	# of Gaps	10	9	5	1	3	3	3	5		
	# of Vehicles	10	18	15	4	15	18	21	40	141	
4:45-5:00pm	# of Gaps	15	13	8	4	2	1	0	6		
	# of Vehicles	15	26	24	16	10	6	0	48	145	538

Proposed Five Mile Point Warehouse Development - Grosset Drive - Town of Kirkwood, NY

Speed Study Measurements - Route 11 Passing Grosset Drive

5/24/2023

Distance Travelled (ft) = 160		50 Speed Measurements per Direction				Speed Limit	
		Northbound		Southbound			
NB Time Seconds	Calculated Speed	NB Time Seconds	Calculated Speed	SB Time Seconds	Calculated Speed	SB Time Seconds	Calculated Speed
2.53	43	2.12	51	3	36	2.22	49
2.44	45	2.12	51	2.66	41	2.20	50
2.41	45	2.09	52	2.61	42	2.19	50
2.37	46	2.07	53	2.59	42	2.19	50
2.354	46	2.07	53	2.57	42	2.12	51
2.35	46	2.06	53	2.5	44	2.12	51
2.34	47	2.05	53	2.47	44	2.07	53
2.34	47	2.04	53	2.47	44	2.07	53
2.34	47	2.03	54	2.47	44	2.03	54
2.31	47	2.03	54	2.45	45	2.03	54
2.28	48	2.03	54	2.4	45	2.03	54
2.28	48	2.01	54	2.4	45	2.03	54
2.26	48	2.01	54	2.39	46	2.03	54
2.25	48	2	55	2.38	46	2	55
2.25	48	2	55	2.35	46	2	55
2.22	49	1.97	55	2.34	47	1.99	55
2.22	49	1.97	55	2.33	47	1.98	55
2.21	49	1.97	55	2.32	47	1.96	56
2.16	51	1.95	56	2.31	47	1.96	56
2.16	51	1.94	56	2.28	48	1.94	56
2.16	51	1.94	56	2.28	48	1.94	56
2.16	51	1.93	57	2.28	48	1.94	56
2.15	51	1.93	57	2.25	48	1.93	57
2.15	51	1.9	57	2.22	49	1.91	57
2.13	51	1.88	58	2.22	49	1.91	57

Northbound

Average Speed = 51 mph

85th Percentile Speed = 55 mph

Southbound

Average Speed = 50 mph

85th Percentile Speed = 55.5 mph

Proposed Five Mile Point Warehouse Development - Grosset Drive - Town of Kirkwood, NY

Speed Study Measurements - Route 11 Passing Crescent Drive

3/9/2022

Distance Travelled (ft) = 150		50 Speed Measurements per Direction				Speed Limit = 55 mph	
NB Time Seconds	Calculated Speed	NB Time Seconds	Calculated Speed	SB Time Seconds	Calculated Speed	SB Time Seconds	Calculated Speed
2.4	43	2.07	49	2.6	39	2.13	48
2.32	44	2.06	50	2.59	39	2.13	48
2.31	44	2.06	50	2.5	41	2.13	48
2.31	44	2.05	50	2.41	42	2.09	49
2.29	45	2.04	50	2.33	44	2.06	50
2.29	45	2.02	51	2.27	45	2.05	50
2.25	45	2.01	51	2.27	45	2.05	50
2.25	45	2	51	2.25	45	2.05	50
2.25	45	2	51	2.25	45	2.03	50
2.23	46	2	51	2.25	45	2.03	50
2.21	46	2	51	2.22	46	2.02	51
2.2	46	1.99	51	2.212	46	2.01	51
2.2	46	1.99	51	2.21	46	2	51
2.18	47	1.99	51	2.2	46	1.98	52
2.18	47	1.99	51	2.2	46	1.98	52
2.18	47	1.98	52	2.2	46	1.97	52
2.15	48	1.97	52	2.2	46	1.97	52
2.15	48	1.95	52	2.19	47	1.97	52
2.15	48	1.94	53	2.17	47	1.97	52
2.13	48	1.93	53	2.16	47	1.95	52
2.13	48	1.91	54	2.16	47	1.95	52
2.12	48	1.9	54	2.16	47	1.94	53
2.1	49	1.89	54	2.156	47	1.93	53
2.09	49	1.89	54	2.15	48	1.91	54
2.09	49	1.87	55	2.15	48	1.87	55

Northbound

Average Speed =

85th Percentile Speed =

49 mph

52 mph

Southbound

Average Speed =

85th Percentile Speed =

48 mph

52 mph

Proposed Five Mile Point Warehouse Development - Grosset Drive - Town of Kirkwood, NY
 Speed Study Measurements - I-81 / I-86 Access Road Passing Frances Street
 2/16/2022

Distance Travelled (ft) = 175 50 Speed Measurements per Direction Speed Limit 55 mph

EB Time		Calculated		EB Time		Calculated		WB Time		Calculated	
Seconds	Speed	Seconds	Speed	Seconds	Speed	Seconds	Speed	Seconds	Speed	Seconds	Speed
2.66	45	2.32	51	2.47	48	2.33	51				
2.6	46	2.32	51	2.46	49	2.33	51				
2.6	46	2.32	51	2.45	49	2.33	51				
2.57	46	2.32	51	2.45	49	2.31	52				
2.51	48	2.31	52	2.45	49	2.31	52				
2.51	48	2.29	52	2.44	49	2.31	52				
2.5	48	2.29	52	2.44	49	2.31	52				
2.49	48	2.29	52	2.43	49	2.3	52				
2.49	48	2.28	52	2.43	49	2.3	52				
2.44	49	2.27	53	2.43	49	2.3	52				
2.44	49	2.25	53	2.42	49	2.3	52				
2.42	49	2.25	53	2.42	49	2.29	52				
2.41	50	2.23	54	2.41	50	2.29	52				
2.41	50	2.22	54	2.41	50	2.29	52				
2.41	50	2.21	54	2.38	50	2.28	52				
2.41	50	2.21	54	2.38	50	2.24	53				
2.39	50	2.2	54	2.38	50	2.24	53				
2.39	50	2.2	54	2.38	50	2.24	53				
2.38	50	2.18	55	2.37	50	2.24	53				
2.37	50	2.18	55	2.37	50	2.21	54				
2.36	51	2.17	55	2.37	50	2.21	54				
2.34	51	2.16	55	2.37	50	2.21	54				
2.32	51	2.16	55	2.36	51	2.14	56				
2.32	51	2.15	55	2.36	51	2.14	56				
2.32	51	2.14	56	2.34	51	2.12	56				

Eastbound
 Average Speed = 51 mph
 85th Percentile Speed = 54 mph

Westbound
 Average Speed = 51 mph
 85th Percentile Speed = 53 mph

Historical Traffic Growth Calculations

Proposed Five Mile Point Warehouse Development Grosset Drive, Kirkwood, NY

Historical Traffic Counts Taken from the NYSDOT Traffic Data Viewer Website

Crescent Drive (Route 990F) - Between Route 11 and Frances Street

2019	2015	2006	2000
2,974 veh	3,089 veh	3,823 veh	3,837 veh
-0.9% per year		-2.1% per year	
-1.7% per year		-0.1% per year	
-1.2% per year			

I-81 / I-86 Access Road - Between Route 11 Ramp and I-81 Overpass

2019	2009	2000
7,799 veh	8,493 veh	9,675 veh
-0.8% per year		-1.4% per year
-1.0% per year		

Route 11 - Between Crescent Drive and Colesville Exit

2019	2009
12,449 veh	13,557 veh
-0.8% per year	

Long term growth is negative

Use +0.5% growth per year for a conservative analysis

**Proposed Five Mile Point Warehouse Development
Grosset Drive - Town of Kirkwood, NY
Trip Generation Estimate**

Proposed Development

455,400 SF - Industrial Buildings (#1 - 191,400 SF, #2 - 264,000 SF)

ITE Trip Generation - 11th Edition - Potential Land Uses

Land Use 110 - General Light Industrial

Morning Peak Hour	0.74 Trips/1,000 SF	88% Enter	12% Exit
Evening Peak Hour	0.65 Trips/1,000 SF	14% Enter	86% Exit

Land Use 140 - Manufacturing

Morning Peak Hour	0.68 Trips/1,000 SF	76% Enter	24% Exit
Evening Peak Hour	0.74 Trips/1,000 SF	31% Enter	69% Exit

Land Use 150 - Warehousing

Morning Peak Hour	0.17 Trips/1,000 SF	77% Enter	23% Exit
Evening Peak Hour	0.18 Trips/1,000 SF	28% Enter	72% Exit

Land Use 155 - High Cube Fulfillment Center Warehouse - Sort

Morning Peak Hour	0.87 Trips/1,000 SF	81% Enter	19% Exit
Evening Peak Hour	1.20 Trips/1,000 SF	39% Enter	61% Exit

Land Use 157 - High Cube Cold Storage Warehouse

Morning Peak Hour	0.11 Trips/1,000 SF	77% Enter*	23% Exit*
Evening Peak Hour	0.12 Trips/1,000 SF	28% Enter*	72% Exit*

* - Arrival / Departure Split Not Available, Assume same as Land Use 150

Trip Generation Potential - Industrial Land Uses

	Morning Peak Hour			Evening Peak Hour		
	Total Trips	Entering	Exiting	Total Trips	Entering	Exiting
Land Use 110 - Light Industrial	337	297	40	296	41	255
Land Use 140 - Manufacturing	310	234	74	337	104	233
Land Use 150 - Warehousing	77	59	18	82	23	59
Land Use 155 - Fullfillment Center with Sorting	396	321	75	546	213	333
Land Use 157 - Cold Storage	50	38	12	55	15	40

Fullfillment Center land use is not realistic based on planned construction, Use Light Industrial as worst case

Trip Generation Estimate - Light Industrial - Most Conservative Estimate

Development	Morning Peak Hour			Evening Peak Hour		
	Total Trips	Entering	Exiting	Total Trips	Entering	Exiting
455,400 SF Light Industrial	337	297	40	296	41	255

Trip Generation Estimate - Warehousing - Expected Operation

Development	Morning Peak Hour			Evening Peak Hour		
	Total Trips	Entering	Exiting	Total Trips	Entering	Exiting
455,400 SF Warehousing	77	59	18	82	23	59

**Proposed Five Mile Point Warehouse Development - Town of Kirkwood, NY
Accident History Summaries - November 1, 2018 Through October 31, 2021**

Accident #	Date	Location	Type	# Cars	Severity	Direction	Conditions	Contributing Factors
1	12/22/2018	Unknown Location	Backing	2	PDO	SB Backing / SB	Dry	Backing Unsafely
2	1/16/2019	Crescent Midblock	Left Turn	2	PDO	EB Left / NB	Dry	Failure to Yield ROW
3	6/23/2019	Parking Lot	Overtaking	2	PDO	NB / NB Parked	Dry	Turning Improper
4	7/20/2019	Frances Midblock	Backing	2	PDO	SB Backing / NB Backing	Wet	Driver Inattention
5	8/15/2019	Route 11 Midblock	Fixed Object	1	PDO	NB Right / Ditch	Wet	Passing Improper
6	9/6/2019	Crescent Midblock	Right Turn	2	PDO	WB Right / NB	Dry	Failure to Yield ROW
7	10/1/2019	Frances Midblock	Fixed Object	1	PDO	WB / Fixed Object	Dry	Driver Inexperience
8	10/29/2019	Frances @ Roberts	Right Angle	2	INJ	NB / EB	Dry	Failure to Yield ROW
9	11/12/2019	Frances @ Access Road	Right Turn	2	PDO	EB Right / NB Stopped	Dry	Turning Improper
10	12/2/2019	Frances Midblock	Fixed Object	1	INJ	NB / Utility Pole	Icy	Pavement Slippery
11	1/15/2020	Crescent @ Route 11	Rearend	2	PDO	SB / SB Stopped	Dry	Following too Closely
12	3/1/2020	Route 11 Midblock	Fixed Object	1	INJ	WB Left / Utility Pole	Dry	Alcohol Involvement
13	8/11/2020	Frances @ Crescent	Right Angle	2	PDO	NB / EB	Dry	Traffic Control Disregarded
14	10/3/2020	Frances @ Access Road	Left Turn	2	PDO	WB Left / EB	Dry	Driver Inattention
15	10/22/2020	Frances @ Access Road	Left Turn	2	INJ	WB Left / EB	Dry	Failure to Yield ROW
16	10/22/2020	Grossett @ Route 11	Animal	1	PDO	Unknown / Animal	Dry	Animal's Actions
17	6/30/2021	Frances Midblock	Fixed Object	1	PDO	NB / Utility Pole	Wet	Alcohol Involvement
18	7/21/2021	Frances @ Access Road	Left Turn	2	INJ	WB Left / EB	Wet	Failure to Yield ROW

Frances @ Access Road - 4 Accidents
 3 - Left Turn Accidents
 1 - Right Turn Accident

Frances @ Roberts - 1 Accident
 1 - Right Angle Accident

Crescent @ Route 11 - 1 Accident
 1 - Rearend Accident

Grossett @ Route 11 - 1 Accident
 1 - Animal Accident

Frances Midblock - 4 Accidents
 3 - Fixed Object Accidents
 1 - Backing Accident

Route 11 Midblock - 2 Accidents
 2 - Fixed Object Accidents

Frances Street @ Access Road Intersection - Evening Peak Hour - 765 Vehicles. Assumed PM Peak is 9% of AADT, AADT = 8,500 Vehicles
 Frances Street @ Crescent Drive Intersection - Evening Peak Hour - 427 Vehicles. Assumed PM Peak is 9% of AADT, AADT = 4,744 Vehicles
 Frances Street @ Roberts Street Intersection - Evening Peak Hour - 115 Vehicles. Assumed PM Peak is 9% of AADT, AADT = 1,278 Vehicles
 Crescent Drive @ Route 11 Intersection - Evening Peak Hour - 568 Vehicles. Assumed PM Peak is 9% of AADT, AADT = 6,311 Vehicles
 Grossett Drive @ Route 11 Intersection - Evening Peak Hour - 511 Vehicles. Assumed PM Peak is 9% of AADT, AADT = 5,678 Vehicles

Frances Street - Evening Peak Hour - 341 Vehicles. Assumed PM Peak is 9% of AADT, AADT = 3,789 Vehicles
Crescent Drive - NYSDOT Traffic Data Viewer - AADT = 2,974 Vehicles
Route 11 - NYSDOT Traffic Data Viewer - AADT = 12,449 Vehicles

Intersection Accident Rates
Accidents X 1,000,000
AADT X # Years X 365 Days
Time Period = 3 years

Frances @ Access Road - 4 Accidents
Accident Rate = 0.43 accidents per million entering vehicles
Statewide average for similar facilities = 0.12 accidents per million entering vehicles (Urban Sign - 3 Legged Intersection - 4 Lanes)
Intersection Accident History is Above the Statewide Average

Frances @ Crescent - 1 Accident
Accident Rate = 0.19 accidents per million entering vehicles
Statewide average for similar facilities = 0.29 accidents per million entering vehicles (Urban Sign - 4 Legged Intersection - 1-4 Lanes)
Intersection Accident History is Below the Statewide Average

Frances @ Roberts - 1 Accident
Accident Rate = 0.71 accidents per million entering vehicles
Statewide average for similar facilities = 0.29 accidents per million entering vehicles (Urban Sign - 4 Legged Intersection - 1-4 Lanes)
Intersection Accident History is Above the Statewide Average

Crescent @ Route 11 - 1 Accident
Accident Rate = 0.14 accidents per million entering vehicles
Statewide average for similar facilities = 0.19 accidents per million entering vehicles (Urban Sign - 4 Legged Intersection - 1-4 Lanes)
Intersection Accident History is Below the Statewide Average

Grossett @ Route 11 - 1 Accident
Accident Rate = 0.16 accidents per million entering vehicles
Statewide average for similar facilities = 0.18 accidents per million entering vehicles (Urban Sign - 3 Legged Intersection - 1-3 Lanes)
Intersection Accident History is Below the Statewide Average

Link Accident Rates

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

Time Period = 3 years
Frances Link Length = 0.43 Miles
Crescent Link Length = 0.24 Miles
Route 11 Link Length = 0.42 Miles

Frances Midblock - 4 Accidents

Accident Rate = 2.24 accidents per million vehicle miles

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

Intersection Accident History is Above the Statewide Average

Crescent Midblock - 2 Accidents

Accident Rate = 2.56 accidents per million vehicle miles

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

Intersection Accident History is Above the Statewide Average

Route 11 Midblock - 2 Accidents

Accident Rate = 0.35 accidents per million vehicle miles

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

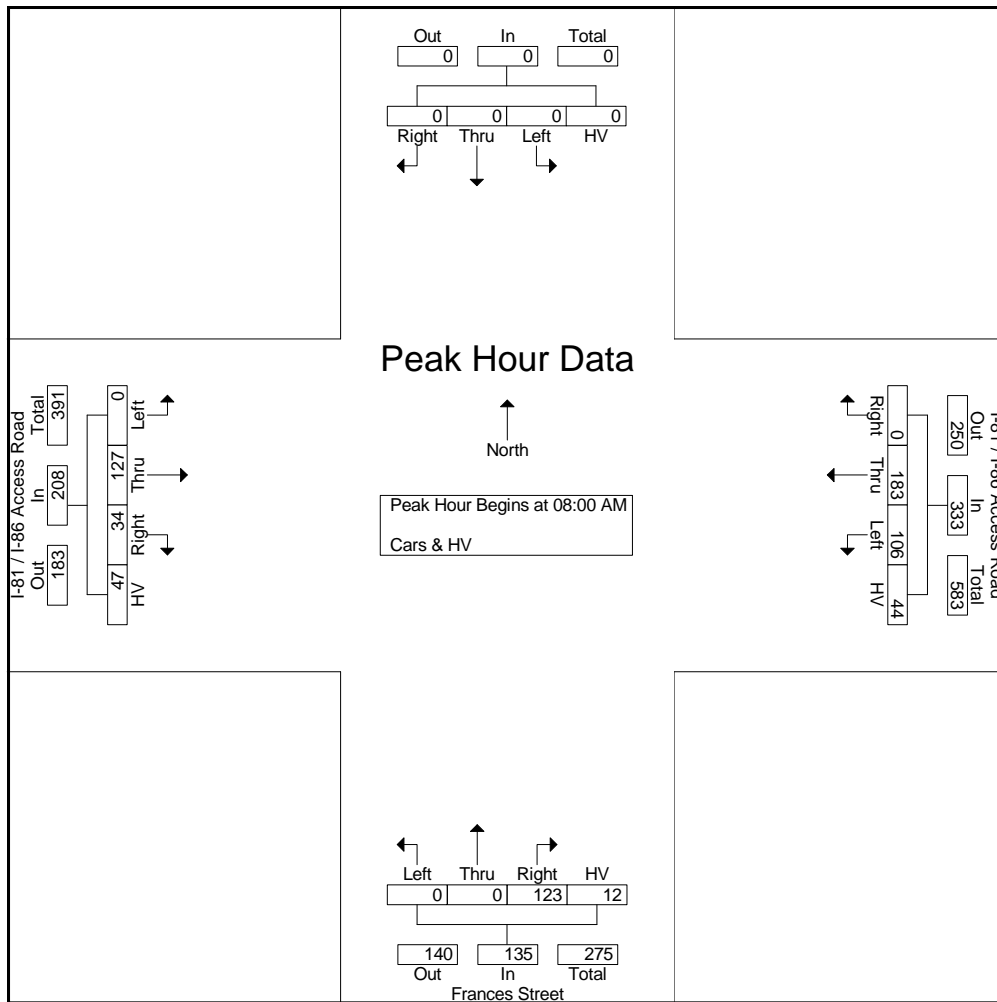
Intersection Accident History is Below the Statewide Average

File Name : Frances @ I81 & I86 Access Road
 Site Code : 00000001
 Start Date : 3/9/2022
 Page No : 1

Groups Printed- Cars & HV

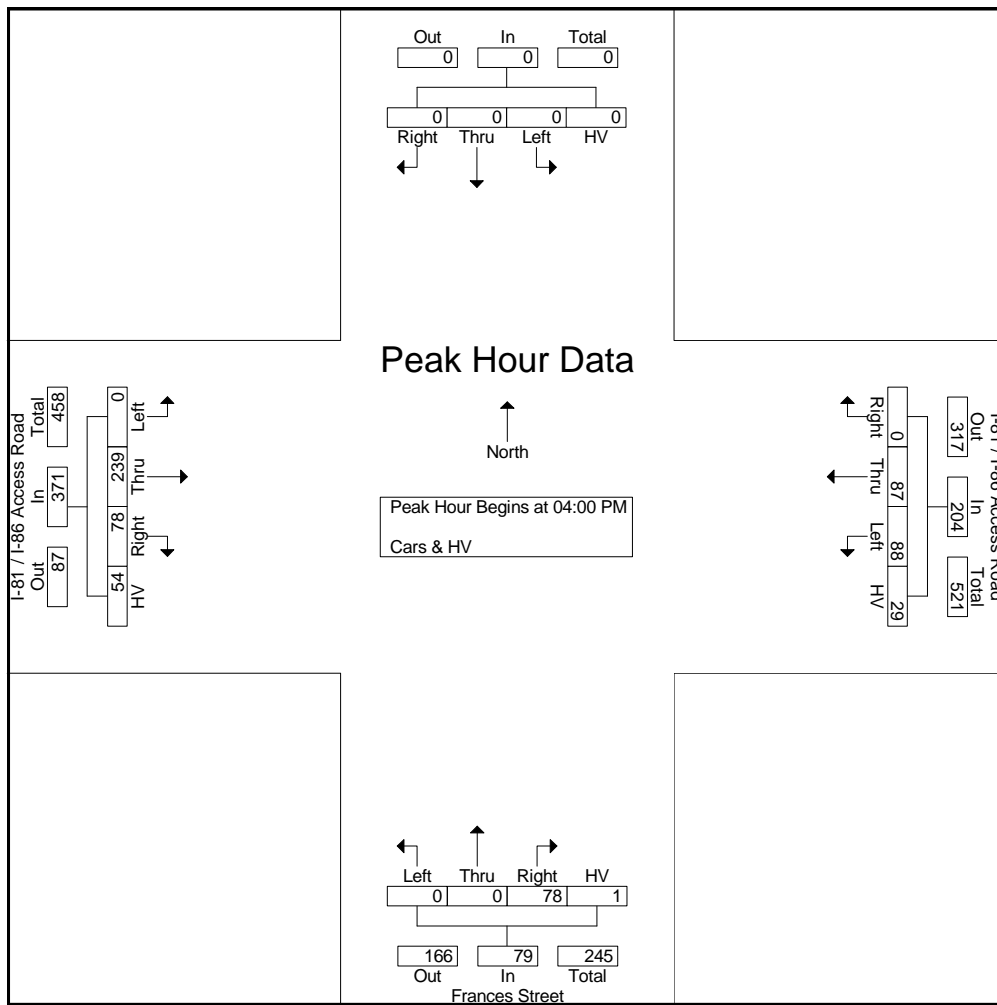
Start Time	Southbound				I-81 / I-86 Access Road Westbound				Frances Street Northbound				I-81 / I-86 Access Road Eastbound				Int. Total
	Right	Thru	Left	HV	Right	Thru	Left	HV	Right	Thru	Left	HV	Right	Thru	Left	HV	
07:00 AM	0	0	0	0	0	42	13	8	25	0	0	2	7	35	0	11	143
07:15 AM	0	0	0	0	0	58	14	11	32	0	1	1	4	32	0	7	160
07:30 AM	0	0	0	0	0	55	17	8	37	0	1	1	5	35	0	17	176
07:45 AM	0	0	0	0	0	44	28	8	27	0	0	1	5	17	0	12	142
Total	0	0	0	0	0	199	72	35	121	0	2	5	21	119	0	47	621
08:00 AM	0	0	0	0	0	47	32	9	35	0	0	4	8	29	0	10	174
08:15 AM	0	0	0	0	0	39	23	11	24	0	0	1	14	31	0	12	155
08:30 AM	0	0	0	0	0	49	23	8	34	0	0	6	6	35	0	16	177
08:45 AM	0	0	0	0	0	48	28	16	30	0	0	1	6	32	0	9	170
Total	0	0	0	0	0	183	106	44	123	0	0	12	34	127	0	47	676
04:00 PM	0	0	0	0	0	23	25	7	18	0	0	0	18	56	0	11	158
04:15 PM	0	0	0	0	0	21	21	5	13	0	0	0	23	62	0	17	162
04:30 PM	0	0	0	0	0	19	22	8	29	0	0	1	21	64	0	10	174
04:45 PM	0	0	0	0	0	24	20	9	18	0	0	0	16	57	0	16	160
Total	0	0	0	0	0	87	88	29	78	0	0	1	78	239	0	54	654
05:00 PM	0	0	0	0	0	19	21	12	26	0	0	1	13	51	0	12	155
05:15 PM	0	0	0	0	0	22	22	11	25	0	0	0	16	51	0	11	158
05:30 PM	0	0	0	0	0	21	15	14	23	0	0	2	15	41	0	10	141
05:45 PM	0	0	0	0	0	12	19	5	13	0	0	0	13	28	0	9	99
Total	0	0	0	0	0	74	77	42	87	0	0	3	57	171	0	42	553
Grand Total	0	0	0	0	0	543	343	150	409	0	2	21	190	656	0	190	2504
Apprch %	0	0	0	0	0	52.4	33.1	14.5	94.7	0	0.5	4.9	18.3	63.3	0	18.3	
Total %	0	0	0	0	0	21.7	13.7	6	16.3	0	0.1	0.8	7.6	26.2	0	7.6	

Start Time	Southbound					I-81 / I-86 Access Road Westbound					Frances Street Northbound					I-81 / I-86 Access Road 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	0	0	0	0	0	0	47	32	9	88	35	0	0	4	39	8	29	0	10	47	174
08:15 AM	0	0	0	0	0	0	39	23	11	73	24	0	0	1	25	14	31	0	12	57	155
08:30 AM	0	0	0	0	0	0	49	23	8	80	34	0	0	6	40	6	35	0	16	57	177
08:45 AM	0	0	0	0	0	0	48	28	16	92	30	0	0	1	31	6	32	0	9	47	170
Total Volume	0	0	0	0	0	0	183	106	44	333	123	0	0	12	135	34	127	0	47	208	676
% App. Total	0	0	0	0	0	0	55	31.8	13.2		91.1	0	0	8.9		16.3	61.1	0	22.6		
PHF	.000	.000	.000	.000	.000	.000	.934	.828	.688	.905	.879	.000	.000	.500	.844	.607	.907	.000	.734	.912	.955



Start Time	Southbound					I-81 / I-86 Access Road Westbound					Frances Street Northbound					I-81 / I-86 Access Road 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	
04:00 PM	0	0	0	0	0	0	23	25	7	55	18	0	0	0	18	18	56	0	11	85	158
04:15 PM	0	0	0	0	0	0	21	21	5	47	13	0	0	0	13	23	62	0	17	102	162
04:30 PM	0	0	0	0	0	0	19	22	8	49	29	0	0	1	30	21	64	0	10	95	174
04:45 PM	0	0	0	0	0	0	24	20	9	53	18	0	0	0	18	16	57	0	16	89	160
Total Volume	0	0	0	0	0	0	87	88	29	204	78	0	0	1	79	78	239	0	54	371	654
% App. Total	0	0	0	0	0	0	42.6	43.1	14.2		98.7	0	0	1.3		21	64.4	0	14.6		
PHF	.000	.000	.000	.000	.000	.000	.906	.880	.806	.927	.672	.000	.000	.250	.658	.848	.934	.000	.794	.909	.940

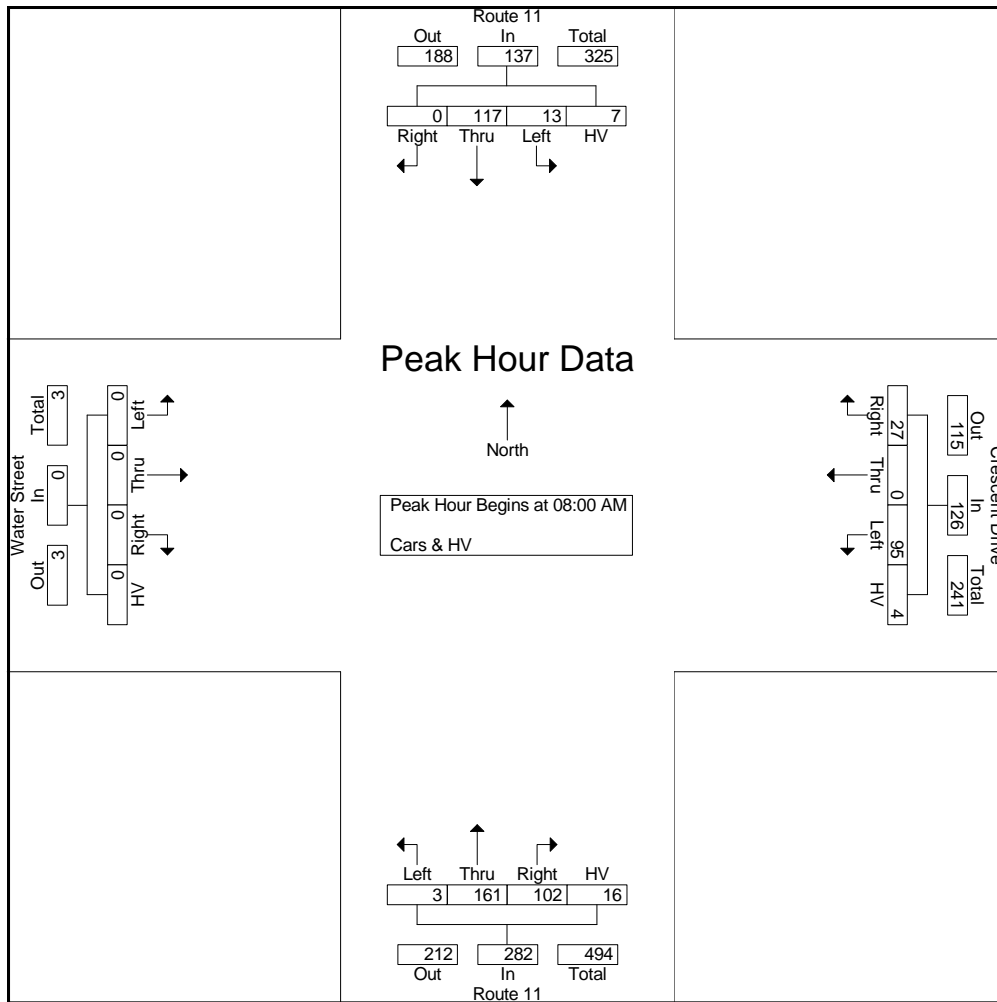
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:00 PM



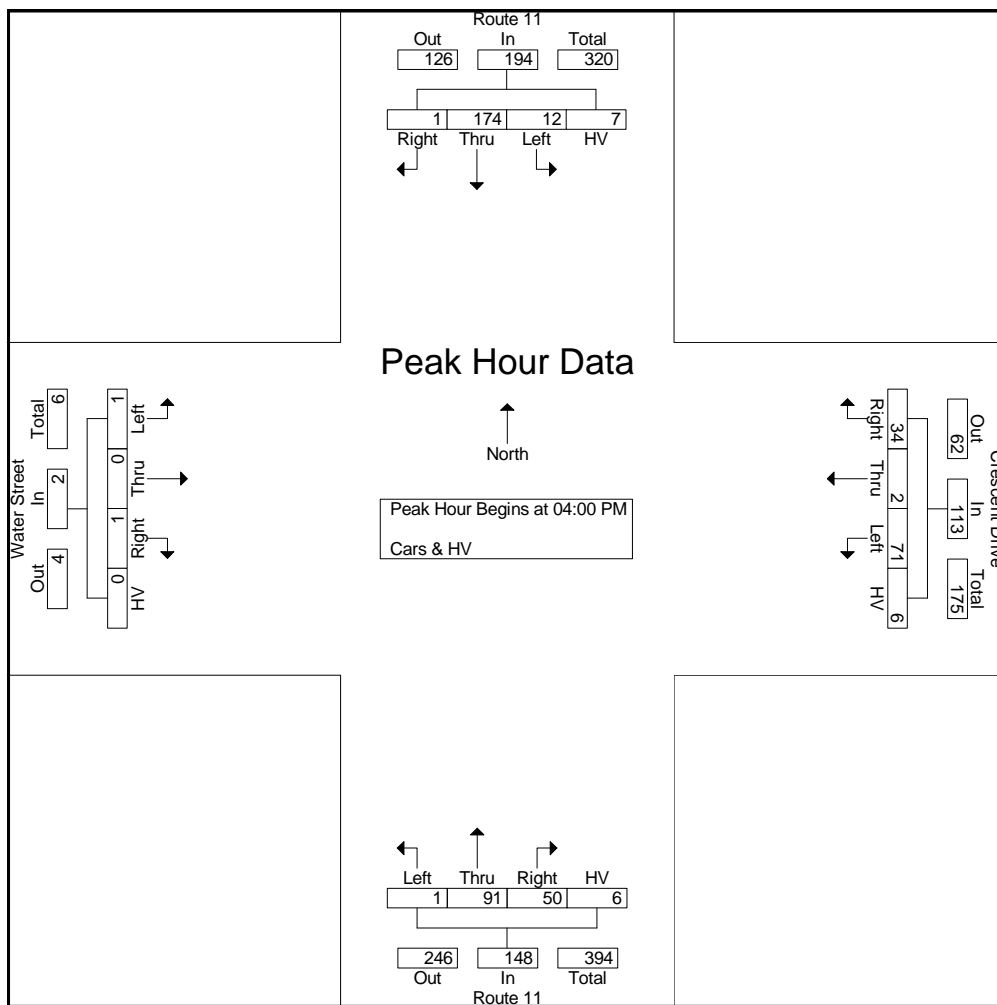
Groups Printed- Cars & HV

Start Time	Route 11 Southbound				Crescent Drive Westbound				Route 11 Northbound				Water Street Eastbound				Int. Total
	Right	Thru	Left	HV	Right	Thru	Left	HV	Right	Thru	Left	HV	Right	Thru	Left	HV	
07:00 AM	1	22	2	2	5	0	14	0	21	37	1	3	0	0	0	0	108
07:15 AM	0	20	1	6	13	0	15	3	17	43	1	2	0	0	0	0	121
07:30 AM	0	24	1	7	5	0	12	3	29	48	0	4	0	0	0	0	133
07:45 AM	0	22	0	2	9	0	26	0	22	37	0	2	0	0	0	0	120
Total	1	88	4	17	32	0	67	6	89	165	2	11	0	0	0	0	482
08:00 AM	0	30	3	2	7	0	25	0	23	36	0	6	0	0	0	0	132
08:15 AM	0	27	1	1	6	0	22	1	15	34	0	4	0	0	0	0	111
08:30 AM	0	35	4	2	6	0	20	0	30	31	0	4	0	0	0	0	132
08:45 AM	0	25	5	2	8	0	28	3	34	60	3	2	0	0	0	0	170
Total	0	117	13	7	27	0	95	4	102	161	3	16	0	0	0	0	545
04:00 PM	0	48	2	2	10	0	25	4	10	30	1	0	1	0	0	0	133
04:15 PM	0	44	4	1	7	0	12	1	9	23	0	4	0	0	0	0	105
04:30 PM	0	38	4	2	10	1	17	0	17	23	0	1	0	0	0	0	113
04:45 PM	1	44	2	2	7	1	17	1	14	15	0	1	0	0	1	0	106
Total	1	174	12	7	34	2	71	6	50	91	1	6	1	0	1	0	457
05:00 PM	0	26	3	1	5	0	14	2	15	36	1	1	0	0	2	0	106
05:15 PM	0	39	2	1	10	0	18	1	15	25	1	2	0	0	0	0	114
05:30 PM	0	33	3	0	6	0	18	2	19	27	0	3	1	0	0	1	113
05:45 PM	0	21	2	2	3	0	12	0	11	18	0	2	0	0	0	0	71
Total	0	119	10	4	24	0	62	5	60	106	2	8	1	0	2	1	404
Grand Total	2	498	39	35	117	2	295	21	301	523	8	41	2	0	3	1	1888
Apprch %	0.3	86.8	6.8	6.1	26.9	0.5	67.8	4.8	34.5	59.9	0.9	4.7	33.3	0	50	16.7	
Total %	0.1	26.4	2.1	1.9	6.2	0.1	15.6	1.1	15.9	27.7	0.4	2.2	0.1	0	0.2	0.1	

Start Time	Route 11 Southbound					Crescent Drive Westbound					Route 11 Northbound					Water 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	0	30	3	2	35	7	0	25	0	32	23	36	0	6	65	0	0	0	0	0	132
08:15 AM	0	27	1	1	29	6	0	22	1	29	15	34	0	4	53	0	0	0	0	0	111
08:30 AM	0	35	4	2	41	6	0	20	0	26	30	31	0	4	65	0	0	0	0	0	132
08:45 AM	0	25	5	2	32	8	0	28	3	39	34	60	3	2	99	0	0	0	0	0	170
Total Volume	0	117	13	7	137	27	0	95	4	126	102	161	3	16	282	0	0	0	0	0	545
% App. Total	0	85.4	9.5	5.1		21.4	0	75.4	3.2		36.2	57.1	1.1	5.7		0	0	0	0		
PHF	.000	.836	.650	.875	.835	.844	.000	.848	.333	.808	.750	.671	.250	.667	.712	.000	.000	.000	.000	.000	.801



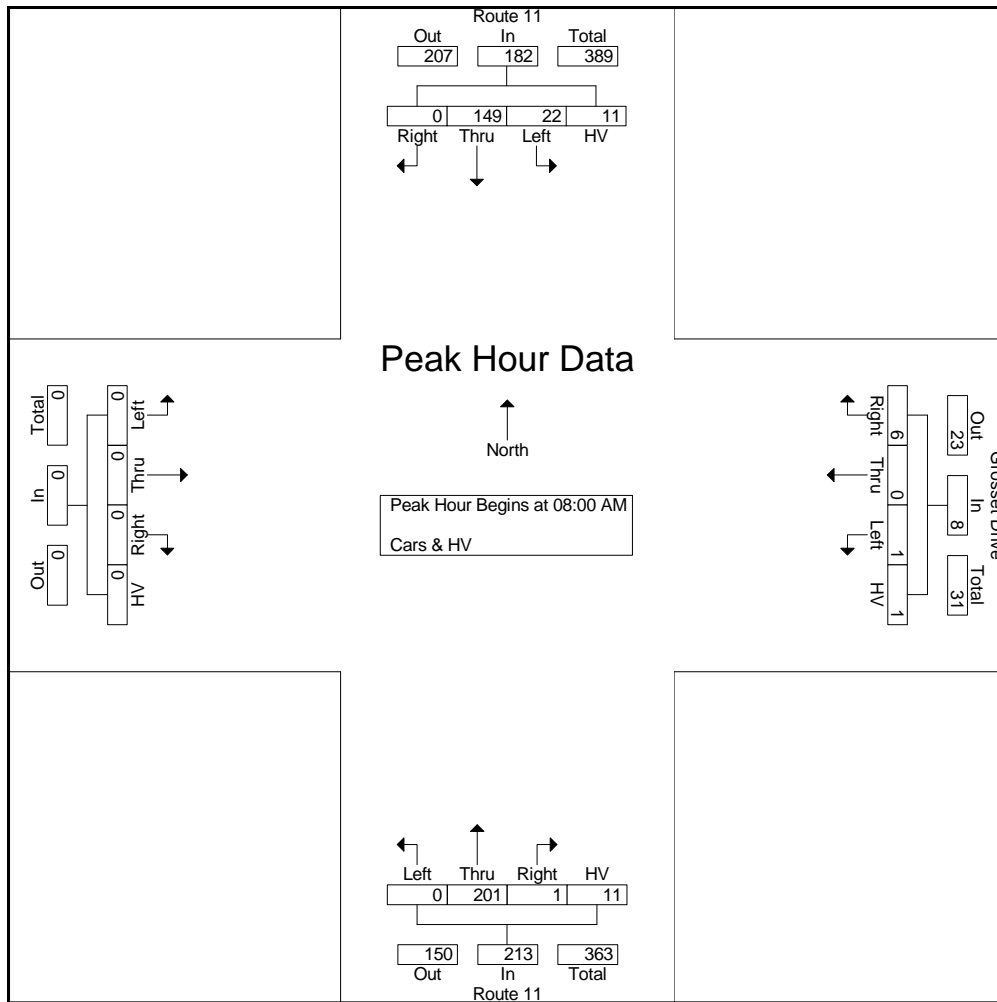
Start Time	Route 11 Southbound					Crescent Drive Westbound					Route 11 Northbound					Water Street Eastbound					Int. Total
	Right	Thru	Left	HV	App. Total	Right	Thru	Left	HV	App. Total	Right	Thru	Left	HV	App. Total	Right	Thru	Left	HV	App. Total	
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	0	48	2	2	52	10	0	25	4	39	10	30	1	0	41	1	0	0	0	1	133
04:15 PM	0	44	4	1	49	7	0	12	1	20	9	23	0	4	36	0	0	0	0	0	105
04:30 PM	0	38	4	2	44	10	1	17	0	28	17	23	0	1	41	0	0	0	0	0	113
04:45 PM	1	44	2	2	49	7	1	17	1	26	14	15	0	1	30	0	0	1	0	1	106
Total Volume	1	174	12	7	194	34	2	71	6	113	50	91	1	6	148	1	0	1	0	2	457
% App. Total	0.5	89.7	6.2	3.6		30.1	1.8	62.8	5.3		33.8	61.5	0.7	4.1		50	0	50	0		
PHF	.250	.906	.750	.875	.933	.850	.500	.710	.375	.724	.735	.758	.250	.375	.902	.250	.000	.250	.000	.500	.859



Groups Printed- Cars & HV

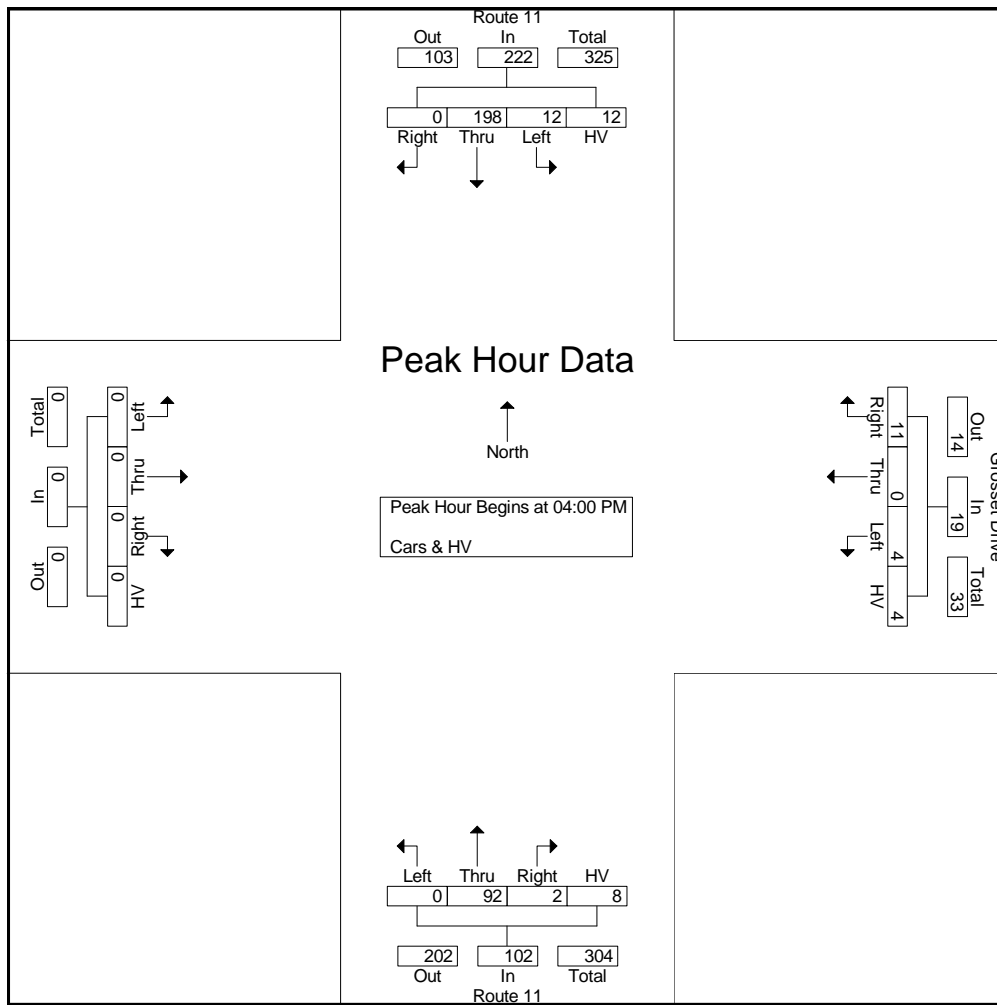
Start Time	Route 11 Southbound				Grosset Drive Westbound				Route 11 Northbound				Eastbound				Int. Total
	Right	Thru	Left	HV	Right	Thru	Left	HV	Right	Thru	Left	HV	Right	Thru	Left	HV	
07:00 AM	0	22	4	0	2	0	0	1	0	49	0	3	0	0	0	0	81
07:15 AM	0	19	5	7	0	0	1	1	0	33	0	1	0	0	0	0	67
07:30 AM	0	25	4	5	1	0	0	0	2	59	0	3	0	0	0	0	99
07:45 AM	0	22	5	0	3	0	1	2	1	47	0	4	0	0	0	0	85
Total	0	88	18	12	6	0	2	4	3	188	0	11	0	0	0	0	332
08:00 AM	0	39	5	5	1	0	0	1	0	43	0	2	0	0	0	0	96
08:15 AM	0	36	3	0	2	0	0	0	0	35	0	4	0	0	0	0	80
08:30 AM	0	40	4	2	2	0	0	0	0	50	0	2	0	0	0	0	100
08:45 AM	0	34	10	4	1	0	1	0	1	73	0	3	0	0	0	0	127
Total	0	149	22	11	6	0	1	1	1	201	0	11	0	0	0	0	403
04:00 PM	0	61	3	4	3	0	3	2	0	19	0	1	0	0	0	0	96
04:15 PM	0	45	1	1	2	0	0	0	0	28	0	4	0	0	0	0	81
04:30 PM	0	44	2	3	4	0	1	2	1	23	0	2	0	0	0	0	82
04:45 PM	0	48	6	4	2	0	0	0	1	22	0	1	0	0	0	0	84
Total	0	198	12	12	11	0	4	4	2	92	0	8	0	0	0	0	343
05:00 PM	0	27	1	2	8	0	0	1	0	21	0	2	0	0	0	0	62
05:15 PM	0	41	2	1	5	0	1	0	0	21	0	0	0	0	0	0	71
05:30 PM	0	37	1	1	10	0	1	1	0	25	0	2	0	0	0	0	78
Grand Total	0	540	56	39	46	0	9	11	6	548	0	34	0	0	0	0	1289
Apprch %	0	85	8.8	6.1	69.7	0	13.6	16.7	1	93.2	0	5.8	0	0	0	0	
Total %	0	41.9	4.3	3	3.6	0	0.7	0.9	0.5	42.5	0	2.6	0	0	0	0	

Start Time	Route 11 Southbound					Grosset Drive Westbound					Route 11 Northbound					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	0	39	5	5	49	1	0	0	1	2	0	43	0	2	45	0	0	0	0	0	96
08:15 AM	0	36	3	0	39	2	0	0	0	2	0	35	0	4	39	0	0	0	0	0	80
08:30 AM	0	40	4	2	46	2	0	0	0	2	0	50	0	2	52	0	0	0	0	0	100
08:45 AM	0	34	10	4	48	1	0	1	0	2	1	73	0	3	77	0	0	0	0	0	127
Total Volume	0	149	22	11	182	6	0	1	1	8	1	201	0	11	213	0	0	0	0	0	403
% App. Total	0	81.9	12.1	6		75	0	12.5	12.5		0.5	94.4	0	5.2		0	0	0	0		
PHF	.000	.931	.550	.550	.929	.750	.000	.250	.250	1.000	.250	.688	.000	.688	.692	.000	.000	.000	.000	.000	.793



Start Time	Route 11 Southbound					Grosset Drive Westbound					Route 11 Northbound					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	
04:00 PM	0	61	3	4	68	3	0	3	2	8	0	19	0	1	20	0	0	0	0	0	96
04:15 PM	0	45	1	1	47	2	0	0	0	2	0	28	0	4	32	0	0	0	0	0	81
04:30 PM	0	44	2	3	49	4	0	1	2	7	1	23	0	2	26	0	0	0	0	0	82
04:45 PM	0	48	6	4	58	2	0	0	0	2	1	22	0	1	24	0	0	0	0	0	84
Total Volume	0	198	12	12	222	11	0	4	4	19	2	92	0	8	102	0	0	0	0	0	343
% App. Total	0	89.2	5.4	5.4		57.9	0	21.1	21.1		2	90.2	0	7.8		0	0	0	0		
PHF	.000	.811	.500	.750	.816	.688	.000	.333	.500	.594	.500	.821	.000	.500	.797	.000	.000	.000	.000	.000	.893

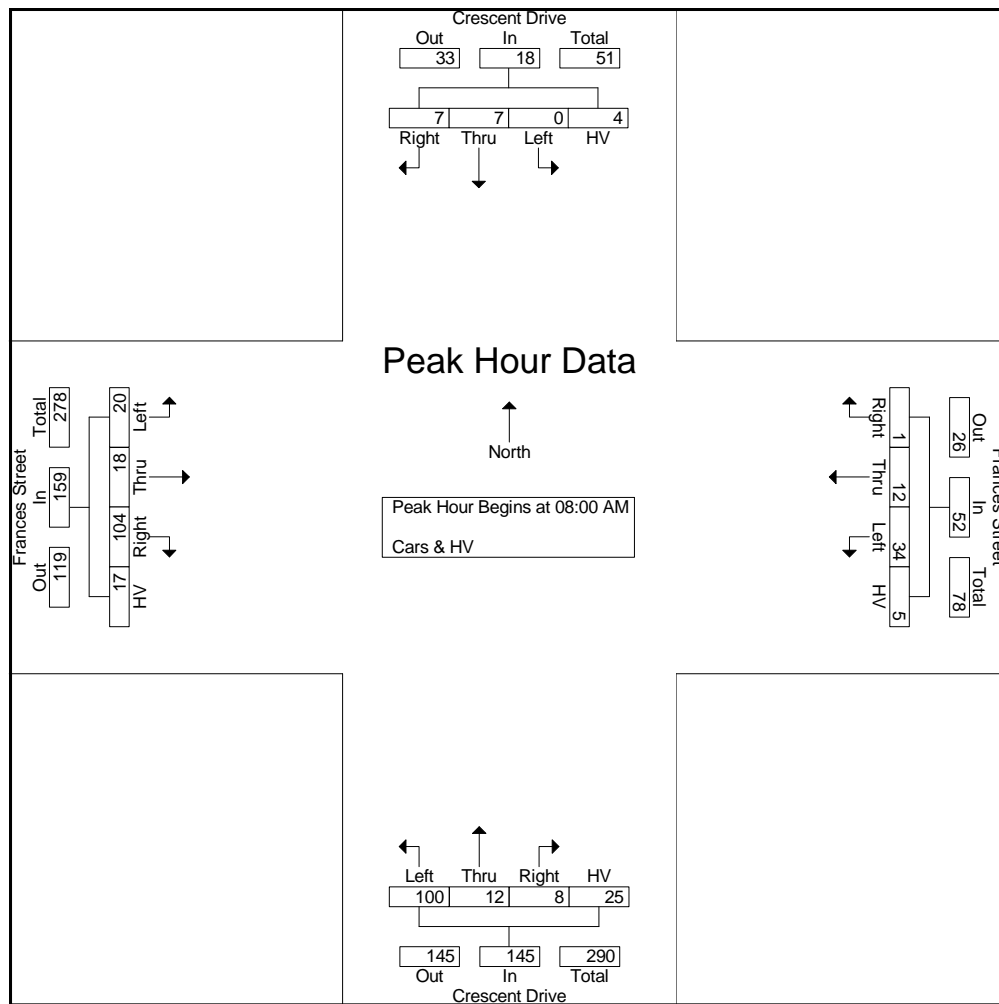
Peak Hour Analysis From 12:00 PM to 05:30 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:00 PM



Groups Printed- Cars & HV

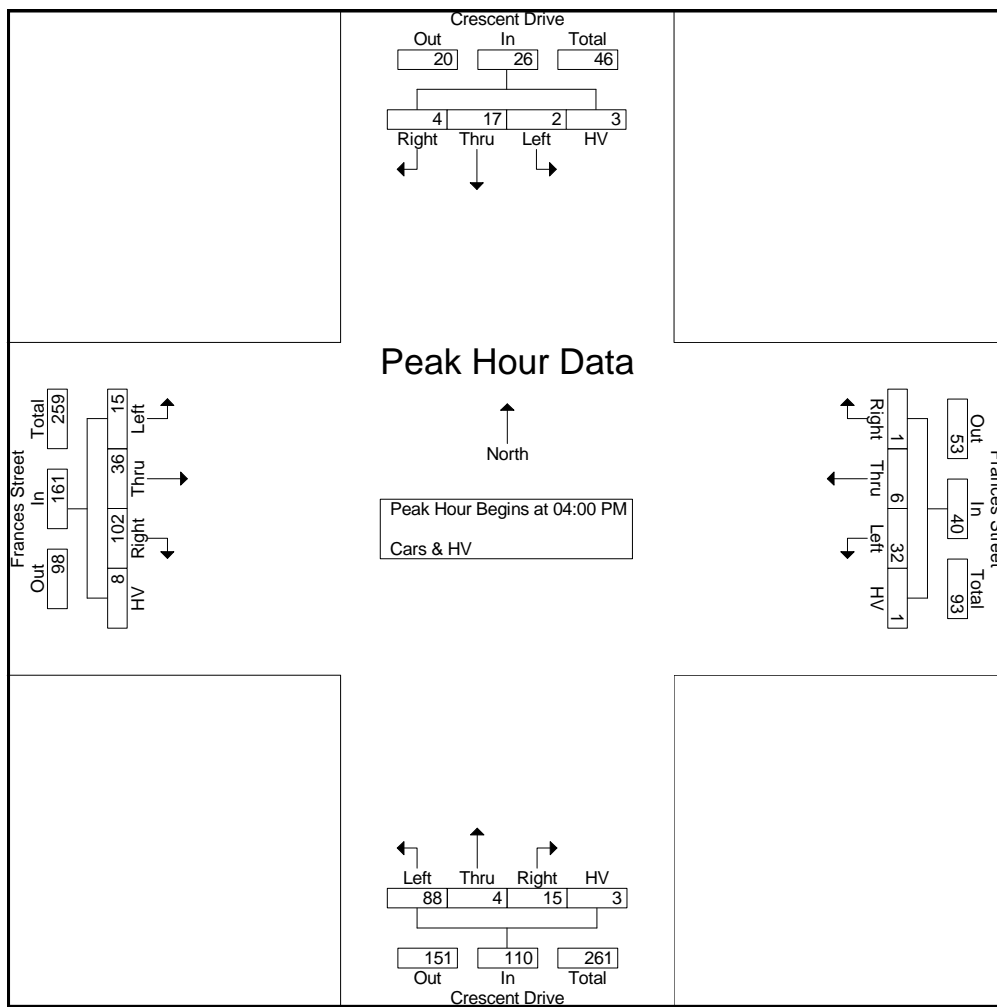
Start Time	Crescent Drive Southbound				Frances Street Westbound				Crescent Drive Northbound				Frances Street Eastbound				Int. Total
	Right	Thru	Left	HV	Right	Thru	Left	HV	Right	Thru	Left	HV	Right	Thru	Left	HV	
07:00 AM	3	4	0	1	1	7	3	1	0	2	22	4	11	5	5	1	70
07:15 AM	2	3	0	2	1	7	9	0	2	0	8	5	12	4	2	2	59
07:30 AM	4	3	0	0	0	12	3	0	0	2	30	2	15	3	3	4	81
07:45 AM	0	4	1	1	2	10	3	0	5	1	18	1	27	2	3	3	81
Total	9	14	1	4	4	36	18	1	7	5	78	12	65	14	13	10	291
08:00 AM	1	2	0	2	0	6	7	3	1	3	28	6	37	4	4	4	108
08:15 AM	1	2	0	0	1	3	9	0	3	1	17	1	24	7	5	5	79
08:30 AM	4	2	0	1	0	1	9	1	2	2	26	5	17	4	6	0	80
08:45 AM	1	1	0	1	0	2	9	1	2	6	29	13	26	3	5	8	107
Total	7	7	0	4	1	12	34	5	8	12	100	25	104	18	20	17	374
04:00 PM	0	9	2	0	0	2	9	1	3	1	20	0	22	11	3	3	86
04:15 PM	0	5	0	1	1	0	7	0	1	0	27	1	38	7	6	4	98
04:30 PM	1	2	0	2	0	3	6	0	6	1	23	1	21	11	3	1	81
04:45 PM	3	1	0	0	0	1	10	0	5	2	18	1	21	7	3	0	72
Total	4	17	2	3	1	6	32	1	15	4	88	3	102	36	15	8	337
05:00 PM	1	5	0	1	0	2	4	0	3	0	22	1	23	10	4	1	77
05:15 PM	1	2	0	1	1	1	4	0	4	1	19	4	30	9	1	1	79
05:30 PM	1	1	1	1	1	1	3	1	1	2	11	0	17	10	3	1	55
Grand Total	23	46	4	14	8	58	95	8	38	24	318	45	341	97	56	38	1213
Apprch %	26.4	52.9	4.6	16.1	4.7	34.3	56.2	4.7	8.9	5.6	74.8	10.6	64.1	18.2	10.5	7.1	
Total %	1.9	3.8	0.3	1.2	0.7	4.8	7.8	0.7	3.1	2	26.2	3.7	28.1	8	4.6	3.1	

Start Time	Crescent Drive Southbound					Frances Street Westbound					Crescent Drive Northbound					Frances 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	1	2	0	2	5	0	6	7	3	16	1	3	28	6	38	37	4	4	4	49	108
08:15 AM	1	2	0	0	3	1	3	9	0	13	3	1	17	1	22	24	7	5	5	41	79
08:30 AM	4	2	0	1	7	0	1	9	1	11	2	2	26	5	35	17	4	6	0	27	80
08:45 AM	1	1	0	1	3	0	2	9	1	12	2	6	29	13	50	26	3	5	8	42	107
Total Volume	7	7	0	4	18	1	12	34	5	52	8	12	100	25	145	104	18	20	17	159	374
% App. Total	38.9	38.9	0	22.2		1.9	23.1	65.4	9.6		5.5	8.3	69	17.2		65.4	11.3	12.6	10.7		
PHF	.438	.875	.000	.500	.643	.250	.500	.944	.417	.813	.667	.500	.862	.481	.725	.703	.643	.833	.531	.811	.866



Start Time	Crescent Drive Southbound					Frances Street Westbound					Crescent Drive Northbound					Frances 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	
04:00 PM	0	9	2	0	11	0	2	9	1	12	3	1	20	0	24	22	11	3	3	39	86
04:15 PM	0	5	0	1	6	1	0	7	0	8	1	0	27	1	29	38	7	6	4	55	98
04:30 PM	1	2	0	2	5	0	3	6	0	9	6	1	23	1	31	21	11	3	1	36	81
04:45 PM	3	1	0	0	4	0	1	10	0	11	5	2	18	1	26	21	7	3	0	31	72
Total Volume	4	17	2	3	26	1	6	32	1	40	15	4	88	3	110	102	36	15	8	161	337
% App. Total	15.4	65.4	7.7	11.5		2.5	15	80	2.5		13.6	3.6	80	2.7		63.4	22.4	9.3	5		
PHF	.333	.472	.250	.375	.591	.250	.500	.800	.250	.833	.625	.500	.815	.750	.887	.671	.818	.625	.500	.732	.860

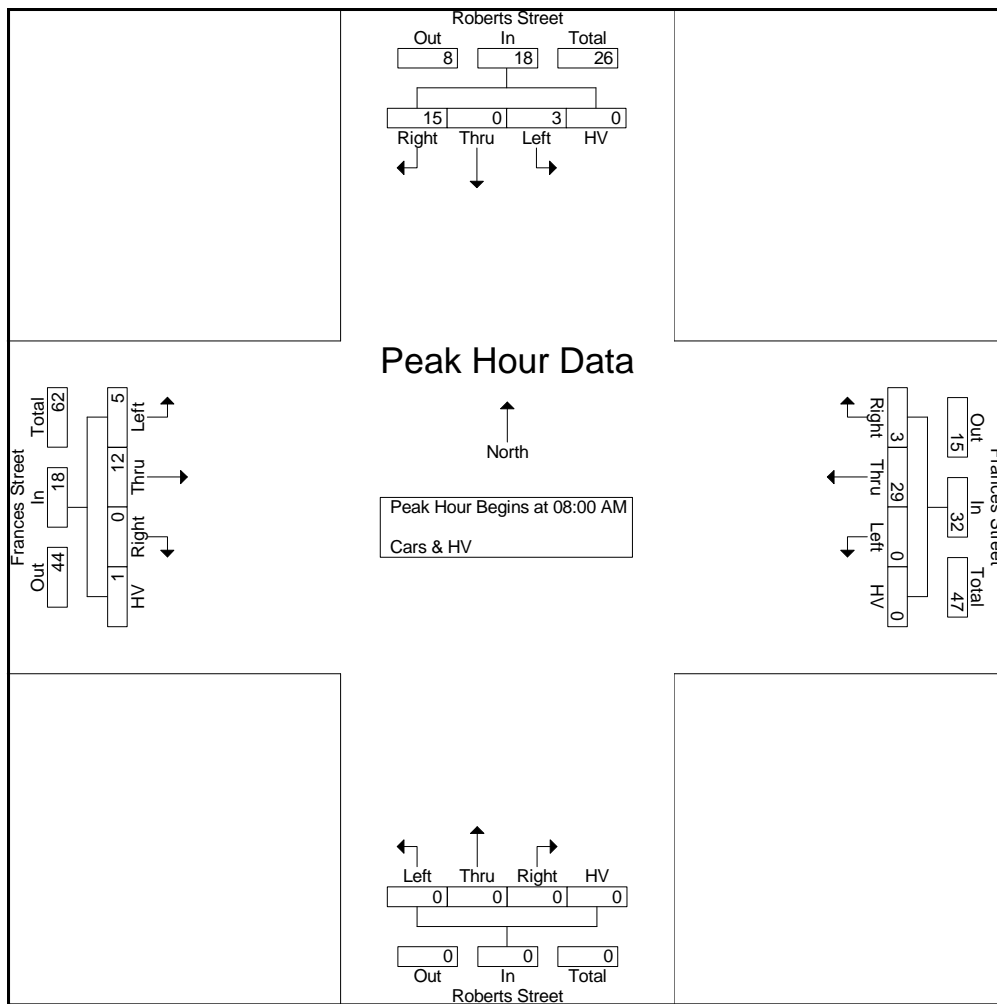
Peak Hour Analysis From 12:00 PM to 05:30 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:00 PM



Groups Printed- Cars & HV

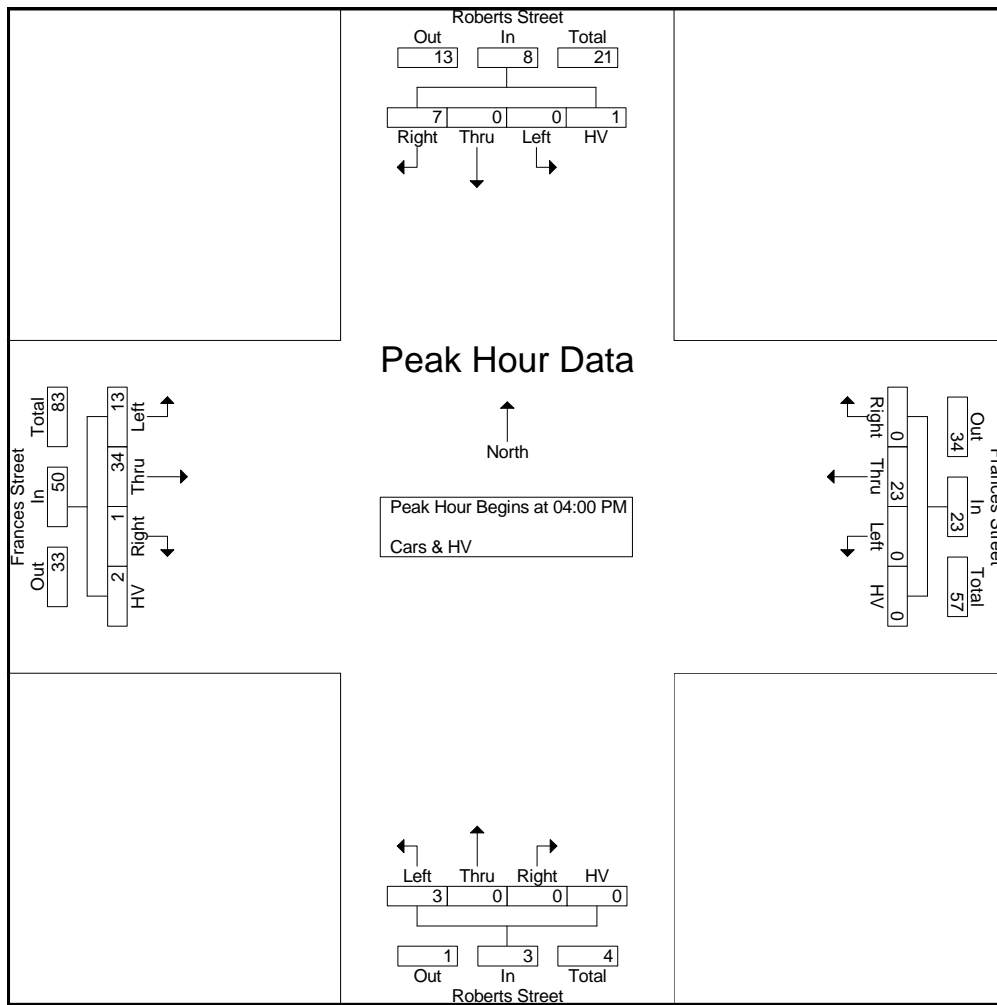
Start Time	Roberts Street Southbound				Frances Street Westbound				Roberts Street Northbound				Frances Street Eastbound				Int. Total
	Right	Thru	Left	HV	Right	Thru	Left	HV	Right	Thru	Left	HV	Right	Thru	Left	HV	
07:00 AM	5	0	0	0	0	9	0	0	0	0	0	0	0	4	1	0	19
07:15 AM	12	0	0	1	0	4	0	0	0	0	1	0	0	3	3	0	24
07:30 AM	5	0	0	0	0	10	0	0	0	0	0	0	0	1	3	0	19
07:45 AM	7	0	0	0	0	12	0	0	0	0	0	0	0	3	1	0	23
Total	29	0	0	1	0	35	0	0	0	0	1	0	0	11	8	0	85
08:00 AM	3	0	2	0	1	9	0	0	0	0	0	0	0	1	1	0	17
08:15 AM	3	0	1	0	1	11	0	0	0	0	0	0	0	4	3	0	23
08:30 AM	2	0	0	0	0	4	0	0	0	0	0	0	0	4	0	1	11
08:45 AM	7	0	0	0	1	5	0	0	0	0	0	0	0	3	1	0	17
Total	15	0	3	0	3	29	0	0	0	0	0	0	0	12	5	1	68
04:00 PM	1	0	0	1	0	5	0	0	0	0	2	0	0	8	2	2	21
04:15 PM	2	0	0	0	0	4	0	0	0	0	0	0	1	6	3	0	16
04:30 PM	2	0	0	0	0	6	0	0	0	0	0	0	0	10	4	0	22
04:45 PM	2	0	0	0	0	8	0	0	0	0	1	0	0	10	4	0	25
Total	7	0	0	1	0	23	0	0	0	0	3	0	1	34	13	2	84
05:00 PM	2	0	0	0	0	3	0	0	0	0	0	0	1	5	2	0	13
05:15 PM	2	0	0	0	0	2	0	0	0	0	0	0	0	15	9	0	28
05:30 PM	1	0	0	0	1	5	0	1	0	0	2	0	0	9	2	0	21
05:45 PM	1	1	1	1	0	1	0	1	0	0	0	1	0	6	4	0	17
Total	6	1	1	1	1	11	0	2	0	0	2	1	1	35	17	0	79
Grand Total	57	1	4	3	4	98	0	2	0	0	6	1	2	92	43	3	316
Apprch %	87.7	1.5	6.2	4.6	3.8	94.2	0	1.9	0	0	85.7	14.3	1.4	65.7	30.7	2.1	
Total %	18	0.3	1.3	0.9	1.3	31	0	0.6	0	0	1.9	0.3	0.6	29.1	13.6	0.9	

Start Time	Roberts Street Southbound					Frances Street Westbound					Roberts Street Northbound					Frances 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 08:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	3	0	2	0	5	1	9	0	0	10	0	0	0	0	0	0	1	1	0	2	17
08:15 AM	3	0	1	0	4	1	11	0	0	12	0	0	0	0	0	0	4	3	0	7	23
08:30 AM	2	0	0	0	2	0	4	0	0	4	0	0	0	0	0	0	4	0	1	5	11
08:45 AM	7	0	0	0	7	1	5	0	0	6	0	0	0	0	0	0	3	1	0	4	17
Total Volume	15	0	3	0	18	3	29	0	0	32	0	0	0	0	0	0	12	5	1	18	68
% App. Total	83.3	0	16.7	0		9.4	90.6	0	0		0	0	0	0		0	66.7	27.8	5.6		
PHF	.536	.000	.375	.000	.643	.750	.659	.000	.000	.667	.000	.000	.000	.000	.000	.000	.750	.417	.250	.643	.739



Start Time	Roberts Street Southbound					Frances Street Westbound					Roberts Street Northbound					Frances 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	
04:00 PM	1	0	0	1	2	0	5	0	0	5	0	0	2	0	2	0	8	2	2	12	21
04:15 PM	2	0	0	0	2	0	4	0	0	4	0	0	0	0	0	1	6	3	0	10	16
04:30 PM	2	0	0	0	2	0	6	0	0	6	0	0	0	0	0	0	10	4	0	14	22
04:45 PM	2	0	0	0	2	0	8	0	0	8	0	0	1	0	1	0	10	4	0	14	25
Total Volume	7	0	0	1	8	0	23	0	0	23	0	0	3	0	3	1	34	13	2	50	84
% App. Total	87.5	0	0	12.5		0	100	0	0		0	0	100	0		2	68	26	4		
PHF	.875	.000	.000	.250	1.00	.000	.719	.000	.000	.719	.000	.000	.375	.000	.375	.250	.850	.813	.250	.893	.840

Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:00 PM



File Name : Frances @ Roberts
 Site Code : 00000002
 Start Date : 3/9/2022
 Page No : 1

Groups Printed- Peds

Start Time	Roberts Street Southbound				Frances Street Westbound				Roberts Street Northbound				Frances 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	2	0	0	0	0	2
07:15 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
07:30 AM	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2
Total	0	0	0	1	0	0	0	2	0	0	0	2	0	0	0	0	5
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Grand Total	0	0	0	1	0	0	0	2	0	0	0	3	0	0	0	0	6
Apprch %	0	0	0	100	0	0	0	100	0	0	0	100	0	0	0	0	
Total %	0	0	0	16.7	0	0	0	33.3	0	0	0	50	0	0	0	0	

HCM 6th TWSC
1: Route 11 & Grosset Drive

06/22/2023

Intersection

Int Delay, s/veh	0.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔			↔
Traffic Vol, veh/h	1	6	260	1	22	190
Future Vol, veh/h	1	6	260	1	22	190
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	69	69	93	93
Heavy Vehicles, %	13	13	5	5	6	6
Mvmt Flow	1	7	377	1	24	204

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	630	378	0	0	378
Stage 1	378	-	-	-	-
Stage 2	252	-	-	-	-
Critical Hdwy	6.53	6.33	-	-	4.16
Critical Hdwy Stg 1	5.53	-	-	-	-
Critical Hdwy Stg 2	5.53	-	-	-	-
Follow-up Hdwy	3.617	3.417	-	-	2.254
Pot Cap-1 Maneuver	428	645	-	-	1159
Stage 1	669	-	-	-	-
Stage 2	765	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	418	645	-	-	1159
Mov Cap-2 Maneuver	418	-	-	-	-
Stage 1	669	-	-	-	-
Stage 2	747	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.1	0	0.8
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	599	1159
HCM Lane V/C Ratio	-	-	0.013	0.02
HCM Control Delay (s)	-	-	11.1	8.2
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0	0.1

HCM 6th TWSC
2: Route 11 & Water Street/Crescent Drive

06/22/2023

Intersection

Int Delay, s/veh	3.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↵	↕↔		↵	↕	
Traffic Vol, veh/h	0	0	0	95	0	27	3	161	102	13	117	0
Future Vol, veh/h	0	0	0	95	0	27	3	161	102	13	117	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Yield	-	-	None
Storage Length	-	-	-	-	-	-	120	-	1000	340	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	50	50	81	81	81	71	71	71	84	84	84
Heavy Vehicles, %	2	2	2	3	3	3	6	6	6	5	5	5
Mvmt Flow	0	0	0	117	0	33	4	227	144	15	139	0

Major/Minor	Minor2		Minor1			Major1		Major2				
Conflicting Flow All	291	404	139	476	476	186	139	0	0	227	0	0
Stage 1	169	169	-	307	307	-	-	-	-	-	-	-
Stage 2	122	235	-	169	169	-	-	-	-	-	-	-
Critical Hdwy	7.33	6.53	6.23	7.345	6.545	6.945	4.19	-	-	4.175	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.545	5.545	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.53	5.53	-	6.145	5.545	-	-	-	-	-	-	-
Follow-up Hdwy	3.519	4.019	3.319	3.5285	4.0285	3.3285	2.257	-	-	2.2475	-	-
Pot Cap-1 Maneuver	650	535	909	483	485	822	1417	-	-	1320	-	-
Stage 1	832	758	-	676	658	-	-	-	-	-	-	-
Stage 2	870	710	-	830	756	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	617	528	909	478	478	822	1417	-	-	1320	-	-
Mov Cap-2 Maneuver	617	528	-	478	478	-	-	-	-	-	-	-
Stage 1	830	750	-	674	656	-	-	-	-	-	-	-
Stage 2	832	708	-	821	748	-	-	-	-	-	-	-

Approach	EB		WB			NB		SB		
HCM Control Delay, s	0		14.5			0.1		0.8		
HCM LOS	A		B							

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1417	-	-	-	527	1320	-	-
HCM Lane V/C Ratio	0.003	-	-	-	0.286	0.012	-	-
HCM Control Delay (s)	7.5	-	-	0	14.5	7.8	-	-
HCM Lane LOS	A	-	-	A	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	1.2	0	-	-

HCM 6th TWSC
 3: Frances Street & I-81 / I-86 Access Road

06/22/2023

Intersection

Int Delay, s/veh	3.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘	↑↑		↗
Traffic Vol, veh/h	127	34	106	183	0	118
Future Vol, veh/h	127	34	106	183	0	118
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	440	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	84	84
Heavy Vehicles, %	22	22	13	13	9	9
Mvmt Flow	140	37	116	201	0	140

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	177	0	- 89
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	-	4.36	-	- 7.08
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	-	2.33	-	- 3.39
Pot Cap-1 Maneuver	-	-	1320	-	0 929
Stage 1	-	-	-	-	0 -
Stage 2	-	-	-	-	0 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1320	-	- 929
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.9	9.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	929	-	-	1320	-
HCM Lane V/C Ratio	0.151	-	-	0.088	-
HCM Control Delay (s)	9.6	-	-	8	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.5	-	-	0.3	-

HCM 6th TWSC
4: Crescent Drive & Frances Street

06/22/2023

Intersection

Int Delay, s/veh	6.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	20	18	102	32	11	1	100	12	8	0	7	7
Future Vol, veh/h	20	18	102	32	11	1	100	12	8	0	7	7
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	81	81	81	81	81	81	73	73	73	64	64	64
Heavy Vehicles, %	11	11	11	10	10	10	17	17	17	22	22	22
Mvmt Flow	25	22	126	40	14	1	137	16	11	0	11	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	15	0	0	148	0	0	241	230	85	244	293	15
Stage 1	-	-	-	-	-	-	135	135	-	95	95	-
Stage 2	-	-	-	-	-	-	106	95	-	149	198	-
Critical Hdwy	4.21	-	-	4.2	-	-	7.27	6.67	6.37	7.32	6.72	6.42
Critical Hdwy Stg 1	-	-	-	-	-	-	6.27	5.67	-	6.32	5.72	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.27	5.67	-	6.32	5.72	-
Follow-up Hdwy	2.299	-	-	2.29	-	-	3.653	4.153	3.453	3.698	4.198	3.498
Pot Cap-1 Maneuver	1546	-	-	1386	-	-	683	644	934	670	586	1009
Stage 1	-	-	-	-	-	-	834	757	-	865	779	-
Stage 2	-	-	-	-	-	-	864	788	-	808	701	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1546	-	-	1386	-	-	642	614	934	626	559	1009
Mov Cap-2 Maneuver	-	-	-	-	-	-	642	614	-	626	559	-
Stage 1	-	-	-	-	-	-	819	743	-	849	756	-
Stage 2	-	-	-	-	-	-	818	765	-	767	688	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.1			5.6			12.4			10.2		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	653	1546	-	-	1386	-	-	719
HCM Lane V/C Ratio	0.252	0.016	-	-	0.029	-	-	0.03
HCM Control Delay (s)	12.4	7.4	0	-	7.7	0	-	10.2
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	1	0	-	-	0.1	-	-	0.1

HCM 6th TWSC
5: Roberts Street & Frances Street

06/22/2023

Intersection

Int Delay, s/veh	2.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	7	19	0	0	29	3	0	0	0	3	0	15
Future Vol, veh/h	7	19	0	0	29	3	0	0	0	3	0	15
Conflicting Peds, #/hr	0	0	1	1	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	64	64	64	67	67	67	90	90	90	64	64	64
Heavy Vehicles, %	6	6	6	2	2	2	5	5	5	2	2	2
Mvmt Flow	11	30	0	0	43	4	0	0	0	5	0	23

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	47	0	0	31	0	0	110	100	31	97	98	45
Stage 1	-	-	-	-	-	-	53	53	-	45	45	-
Stage 2	-	-	-	-	-	-	57	47	-	52	53	-
Critical Hdwy	4.16	-	-	4.12	-	-	7.15	6.55	6.25	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.55	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.55	-	6.12	5.52	-
Follow-up Hdwy	2.254	-	-	2.218	-	-	3.545	4.045	3.345	3.518	4.018	3.318
Pot Cap-1 Maneuver	1535	-	-	1582	-	-	861	784	1035	885	792	1025
Stage 1	-	-	-	-	-	-	952	845	-	969	857	-
Stage 2	-	-	-	-	-	-	947	850	-	961	851	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1535	-	-	1580	-	-	836	778	1034	881	786	1025
Mov Cap-2 Maneuver	-	-	-	-	-	-	836	778	-	881	786	-
Stage 1	-	-	-	-	-	-	944	838	-	962	857	-
Stage 2	-	-	-	-	-	-	925	850	-	954	844	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	2			0			0			8.7		
HCM LOS							A			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1535	-	-	1580	-	-	998
HCM Lane V/C Ratio	-	0.007	-	-	-	-	-	0.028
HCM Control Delay (s)	0	7.4	0	-	0	-	-	8.7
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0.1

HCM 6th TWSC
1: Route 11 & Grosset Drive

06/22/2023

Intersection

Int Delay, s/veh	0.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔			↔
Traffic Vol, veh/h	5	14	170	3	16	303
Future Vol, veh/h	5	14	170	3	16	303
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	59	59	80	80	82	82
Heavy Vehicles, %	21	21	8	8	5	5
Mvmt Flow	8	24	213	4	20	370

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	625	215	0	0	217
Stage 1	215	-	-	-	-
Stage 2	410	-	-	-	-
Critical Hdwy	6.61	6.41	-	-	4.15
Critical Hdwy Stg 1	5.61	-	-	-	-
Critical Hdwy Stg 2	5.61	-	-	-	-
Follow-up Hdwy	3.689	3.489	-	-	2.245
Pot Cap-1 Maneuver	419	779	-	-	1335
Stage 1	778	-	-	-	-
Stage 2	631	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	411	779	-	-	1335
Mov Cap-2 Maneuver	411	-	-	-	-
Stage 1	778	-	-	-	-
Stage 2	619	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11	0	0.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	630	1335
HCM Lane V/C Ratio	-	-	0.051	0.015
HCM Control Delay (s)	-	-	11	7.7
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.2	0

HCM 6th TWSC
2: Route 11 & Water Street/Crescent Drive

06/22/2023

Intersection

Int Delay, s/veh	4.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	1	0	1	92	3	44	1	118	65	16	226	1
Future Vol, veh/h	1	0	1	92	3	44	1	118	65	16	226	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Yield	-	-	None
Storage Length	-	-	-	-	-	-	120	-	1000	340	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	50	50	72	72	72	90	90	90	93	93	93
Heavy Vehicles, %	2	2	2	5	5	5	4	4	4	4	4	4
Mvmt Flow	2	0	2	128	4	61	1	131	72	17	243	1

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	348	411	244	448	447	102	244	0	0	131	0	0
Stage 1	278	278	-	169	169	-	-	-	-	-	-	-
Stage 2	70	133	-	279	278	-	-	-	-	-	-	-
Critical Hdwy	7.33	6.53	6.23	7.375	6.575	6.975	4.16	-	-	4.16	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.575	5.575	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.53	5.53	-	6.175	5.575	-	-	-	-	-	-	-
Follow-up Hdwy	3.519	4.019	3.319	3.5475	4.0475	3.3475	2.238	-	-	2.238	-	-
Pot Cap-1 Maneuver	594	530	794	501	500	925	1308	-	-	1440	-	-
Stage 1	728	680	-	809	752	-	-	-	-	-	-	-
Stage 2	932	786	-	719	673	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	546	523	794	495	494	925	1308	-	-	1440	-	-
Mov Cap-2 Maneuver	546	523	-	495	494	-	-	-	-	-	-	-
Stage 1	727	672	-	808	751	-	-	-	-	-	-	-
Stage 2	865	785	-	709	665	-	-	-	-	-	-	-

Approach	EB		WB		NB			SB		
HCM Control Delay, s	10.6		14.3		0			0.5		
HCM LOS	B		B							

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1308	-	-	647	580	1440	-	-
HCM Lane V/C Ratio	0.001	-	-	0.006	0.333	0.012	-	-
HCM Control Delay (s)	7.8	-	-	10.6	14.3	7.5	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	1.5	0	-	-

HCM 6th TWSC
 3: Frances Street & I-81 / I-86 Access Road

06/22/2023

Intersection

Int Delay, s/veh	3.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘	↑↑		↗
Traffic Vol, veh/h	311	101	114	113	0	126
Future Vol, veh/h	311	101	114	113	0	126
Conflicting Peds, #/hr	0	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	440	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	93	93	66	66
Heavy Vehicles, %	15	15	14	14	1	1
Mvmt Flow	342	111	123	122	0	191

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	453	0	- 228
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	-	4.38	-	- 6.92
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	-	2.34	-	- 3.31
Pot Cap-1 Maneuver	-	-	1024	-	0 778
Stage 1	-	-	-	-	0 -
Stage 2	-	-	-	-	0 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1024	-	- 777
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	4.5	11.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	777	-	-	1024	-
HCM Lane V/C Ratio	0.246	-	-	0.12	-
HCM Control Delay (s)	11.1	-	-	9	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	1	-	-	0.4	-

HCM 6th TWSC
4: Crescent Drive & Frances Street

06/22/2023

Intersection

Int Delay, s/veh	5.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	21	49	145	35	7	1	114	5	20	3	22	5
Future Vol, veh/h	21	49	145	35	7	1	114	5	20	3	22	5
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	73	73	73	83	83	83	89	89	89	59	59	59
Heavy Vehicles, %	5	5	5	3	3	3	3	3	3	12	12	12
Mvmt Flow	29	67	199	42	8	1	128	6	22	5	37	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	9	0	0	266	0	0	340	318	167	332	417	9
Stage 1	-	-	-	-	-	-	225	225	-	93	93	-
Stage 2	-	-	-	-	-	-	115	93	-	239	324	-
Critical Hdwy	4.15	-	-	4.13	-	-	7.13	6.53	6.23	7.22	6.62	6.32
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.22	5.62	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.22	5.62	-
Follow-up Hdwy	2.245	-	-	2.227	-	-	3.527	4.027	3.327	3.608	4.108	3.408
Pot Cap-1 Maneuver	1591	-	-	1292	-	-	612	597	875	603	512	1044
Stage 1	-	-	-	-	-	-	775	716	-	890	799	-
Stage 2	-	-	-	-	-	-	887	816	-	742	632	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1591	-	-	1292	-	-	548	565	875	559	484	1044
Mov Cap-2 Maneuver	-	-	-	-	-	-	548	565	-	559	484	-
Stage 1	-	-	-	-	-	-	758	700	-	870	773	-
Stage 2	-	-	-	-	-	-	810	789	-	701	618	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.7			6.4			13.5			12.4		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	580	1591	-	-	1292	-	-	539
HCM Lane V/C Ratio	0.269	0.018	-	-	0.033	-	-	0.094
HCM Control Delay (s)	13.5	7.3	0	-	7.9	0	-	12.4
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	1.1	0.1	-	-	0.1	-	-	0.3

HCM 6th TWSC
5: Roberts Street & Frances Street

06/22/2023

Intersection

Int Delay, s/veh	2.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	20	51	1	0	30	0	4	0	0	0	0	9
Future Vol, veh/h	20	51	1	0	30	0	4	0	0	0	0	9
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	72	72	72	90	90	100	90	90	90
Heavy Vehicles, %	4	4	4	2	2	2	5	5	5	12	12	12
Mvmt Flow	22	57	1	0	42	0	4	0	0	0	0	10

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	42	0	0	58	0	0	149	144	58	144	144	42
Stage 1	-	-	-	-	-	-	102	102	-	42	42	-
Stage 2	-	-	-	-	-	-	47	42	-	102	102	-
Critical Hdwy	4.14	-	-	4.12	-	-	7.15	6.55	6.25	7.22	6.62	6.32
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.55	-	6.22	5.62	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.55	-	6.22	5.62	-
Follow-up Hdwy	2.236	-	-	2.218	-	-	3.545	4.045	3.345	3.608	4.108	3.408
Pot Cap-1 Maneuver	1554	-	-	1546	-	-	812	742	1000	803	729	1001
Stage 1	-	-	-	-	-	-	897	805	-	948	841	-
Stage 2	-	-	-	-	-	-	959	854	-	880	792	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1554	-	-	1546	-	-	795	731	1000	794	718	1001
Mov Cap-2 Maneuver	-	-	-	-	-	-	795	731	-	794	718	-
Stage 1	-	-	-	-	-	-	884	793	-	934	841	-
Stage 2	-	-	-	-	-	-	949	854	-	867	780	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	2			0			9.6			8.6		
HCM LOS							A			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	795	1554	-	-	1546	-	-	1001
HCM Lane V/C Ratio	0.006	0.014	-	-	-	-	-	0.01
HCM Control Delay (s)	9.6	7.4	0	-	0	-	-	8.6
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

HCM 6th TWSC
1: Route 11 & Grosset Drive

06/22/2023

Intersection

Int Delay, s/veh	0.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔			↔
Traffic Vol, veh/h	1	6	263	1	22	192
Future Vol, veh/h	1	6	263	1	22	192
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	69	69	93	93
Heavy Vehicles, %	13	13	5	5	6	6
Mvmt Flow	1	7	381	1	24	206

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	636	382	0	0	382
Stage 1	382	-	-	-	-
Stage 2	254	-	-	-	-
Critical Hdwy	6.53	6.33	-	-	4.16
Critical Hdwy Stg 1	5.53	-	-	-	-
Critical Hdwy Stg 2	5.53	-	-	-	-
Follow-up Hdwy	3.617	3.417	-	-	2.254
Pot Cap-1 Maneuver	425	642	-	-	1155
Stage 1	666	-	-	-	-
Stage 2	763	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	415	642	-	-	1155
Mov Cap-2 Maneuver	415	-	-	-	-
Stage 1	666	-	-	-	-
Stage 2	745	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.1	0	0.8
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	595	1155
HCM Lane V/C Ratio	-	-	0.013	0.02
HCM Control Delay (s)	-	-	11.1	8.2
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0	0.1

HCM 6th TWSC
1: Route 11 & Grosset Drive

06/22/2023

Intersection

Int Delay, s/veh	0.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔			↔
Traffic Vol, veh/h	5	14	172	3	16	306
Future Vol, veh/h	5	14	172	3	16	306
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	59	59	80	80	82	82
Heavy Vehicles, %	21	21	8	8	5	5
Mvmt Flow	8	24	215	4	20	373

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	630	217	0	0	219
Stage 1	217	-	-	-	-
Stage 2	413	-	-	-	-
Critical Hdwy	6.61	6.41	-	-	4.15
Critical Hdwy Stg 1	5.61	-	-	-	-
Critical Hdwy Stg 2	5.61	-	-	-	-
Follow-up Hdwy	3.689	3.489	-	-	2.245
Pot Cap-1 Maneuver	417	777	-	-	1333
Stage 1	776	-	-	-	-
Stage 2	629	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	409	777	-	-	1333
Mov Cap-2 Maneuver	409	-	-	-	-
Stage 1	776	-	-	-	-
Stage 2	617	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11	0	0.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	628	1333
HCM Lane V/C Ratio	-	-	0.051	0.015
HCM Control Delay (s)	-	-	11	7.7
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.2	0

HCM 6th TWSC
2: Route 11 & Water Street/Crescent Drive

06/22/2023

Intersection

Int Delay, s/veh	4.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↵	↕↔		↵	↔	
Traffic Vol, veh/h	1	0	1	93	3	44	1	119	66	16	228	1
Future Vol, veh/h	1	0	1	93	3	44	1	119	66	16	228	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Yield	-	-	None
Storage Length	-	-	-	-	-	-	120	-	1000	340	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	50	50	72	72	72	90	90	90	93	93	93
Heavy Vehicles, %	2	2	2	5	5	5	4	4	4	4	4	4
Mvmt Flow	2	0	2	129	4	61	1	132	73	17	245	1

Major/Minor	Minor2		Minor1			Major1		Major2				
Conflicting Flow All	350	414	246	452	451	103	246	0	0	132	0	0
Stage 1	280	280	-	171	171	-	-	-	-	-	-	-
Stage 2	70	134	-	281	280	-	-	-	-	-	-	-
Critical Hdwy	7.33	6.53	6.23	7.375	6.575	6.975	4.16	-	-	4.16	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.575	5.575	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.53	5.53	-	6.175	5.575	-	-	-	-	-	-	-
Follow-up Hdwy	3.519	4.019	3.319	3.5475	4.0475	3.3475	2.238	-	-	2.238	-	-
Pot Cap-1 Maneuver	592	528	792	498	498	924	1305	-	-	1438	-	-
Stage 1	726	678	-	807	750	-	-	-	-	-	-	-
Stage 2	932	785	-	717	672	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	544	521	792	492	492	924	1305	-	-	1438	-	-
Mov Cap-2 Maneuver	544	521	-	492	492	-	-	-	-	-	-	-
Stage 1	725	670	-	806	749	-	-	-	-	-	-	-
Stage 2	865	784	-	707	664	-	-	-	-	-	-	-

Approach	EB		WB			NB		SB		
HCM Control Delay, s	10.6		14.4			0		0.5		
HCM LOS	B		B							

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1305	-	-	645	577	1438	-	-
HCM Lane V/C Ratio	0.001	-	-	0.006	0.337	0.012	-	-
HCM Control Delay (s)	7.8	-	-	10.6	14.4	7.5	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	1.5	0	-	-

HCM 6th TWSC
 3: Frances Street & I-81 / I-86 Access Road

06/22/2023

Intersection

Int Delay, s/veh	3.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘	↑↑		↗
Traffic Vol, veh/h	314	102	115	114	0	127
Future Vol, veh/h	314	102	115	114	0	127
Conflicting Peds, #/hr	0	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	440	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	93	93	66	66
Heavy Vehicles, %	15	15	14	14	1	1
Mvmt Flow	345	112	124	123	0	192

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	457	0	- 230
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	-	4.38	-	- 6.92
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	-	2.34	-	- 3.31
Pot Cap-1 Maneuver	-	-	1020	-	0 775
Stage 1	-	-	-	-	0 -
Stage 2	-	-	-	-	0 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1020	-	- 774
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	4.5	11.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	774	-	-	1020	-
HCM Lane V/C Ratio	0.249	-	-	0.121	-
HCM Control Delay (s)	11.2	-	-	9	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	1	-	-	0.4	-

HCM 6th TWSC
4: Crescent Drive & Frances Street

06/22/2023

Intersection

Int Delay, s/veh	5.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	21	50	146	35	7	1	115	5	20	3	22	5
Future Vol, veh/h	21	50	146	35	7	1	115	5	20	3	22	5
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	73	73	73	83	83	83	89	89	89	59	59	59
Heavy Vehicles, %	5	5	5	3	3	3	3	3	3	12	12	12
Mvmt Flow	29	68	200	42	8	1	129	6	22	5	37	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	9	0	0	268	0	0	341	319	168	333	419	9
Stage 1	-	-	-	-	-	-	226	226	-	93	93	-
Stage 2	-	-	-	-	-	-	115	93	-	240	326	-
Critical Hdwy	4.15	-	-	4.13	-	-	7.13	6.53	6.23	7.22	6.62	6.32
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.22	5.62	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.22	5.62	-
Follow-up Hdwy	2.245	-	-	2.227	-	-	3.527	4.027	3.327	3.608	4.108	3.408
Pot Cap-1 Maneuver	1591	-	-	1290	-	-	611	596	874	602	510	1044
Stage 1	-	-	-	-	-	-	774	715	-	890	799	-
Stage 2	-	-	-	-	-	-	887	816	-	742	631	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1591	-	-	1290	-	-	547	564	874	558	482	1044
Mov Cap-2 Maneuver	-	-	-	-	-	-	547	564	-	558	482	-
Stage 1	-	-	-	-	-	-	757	699	-	870	773	-
Stage 2	-	-	-	-	-	-	810	789	-	701	617	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.7			6.4			13.5			12.4		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	579	1591	-	-	1290	-	-	538
HCM Lane V/C Ratio	0.272	0.018	-	-	0.033	-	-	0.095
HCM Control Delay (s)	13.5	7.3	0	-	7.9	0	-	12.4
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	1.1	0.1	-	-	0.1	-	-	0.3

HCM 6th TWSC
5: Roberts Street & Frances Street

06/22/2023

Intersection

Int Delay, s/veh	2.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	20	52	1	0	30	0	4	0	0	0	0	9
Future Vol, veh/h	20	52	1	0	30	0	4	0	0	0	0	9
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	72	72	72	90	90	100	90	90	90
Heavy Vehicles, %	4	4	4	2	2	2	5	5	5	12	12	12
Mvmt Flow	22	58	1	0	42	0	4	0	0	0	0	10

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	42	0	0	59	0	0	150	145	59	145	145	42
Stage 1	-	-	-	-	-	-	103	103	-	42	42	-
Stage 2	-	-	-	-	-	-	47	42	-	103	103	-
Critical Hdwy	4.14	-	-	4.12	-	-	7.15	6.55	6.25	7.22	6.62	6.32
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.55	-	6.22	5.62	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.55	-	6.22	5.62	-
Follow-up Hdwy	2.236	-	-	2.218	-	-	3.545	4.045	3.345	3.608	4.108	3.408
Pot Cap-1 Maneuver	1554	-	-	1545	-	-	811	741	998	802	728	1001
Stage 1	-	-	-	-	-	-	896	804	-	948	841	-
Stage 2	-	-	-	-	-	-	959	854	-	879	791	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1554	-	-	1545	-	-	794	730	998	793	717	1001
Mov Cap-2 Maneuver	-	-	-	-	-	-	794	730	-	793	717	-
Stage 1	-	-	-	-	-	-	883	792	-	934	841	-
Stage 2	-	-	-	-	-	-	949	854	-	866	779	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	2			0			9.6			8.6		
HCM LOS							A			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	794	1554	-	-	1545	-	-	1001
HCM Lane V/C Ratio	0.006	0.014	-	-	-	-	-	0.01
HCM Control Delay (s)	9.6	7.4	0	-	0	-	-	8.6
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

HCM 6th TWSC
1: Route 11 & Grosset Drive

06/22/2023

Intersection

Int Delay, s/veh	1.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔			↔
Traffic Vol, veh/h	4	21	263	10	72	192
Future Vol, veh/h	4	21	263	10	72	192
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	69	69	93	93
Heavy Vehicles, %	13	13	5	5	6	6
Mvmt Flow	4	23	381	14	77	206

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	748	388	0	0	395
Stage 1	388	-	-	-	-
Stage 2	360	-	-	-	-
Critical Hdwy	6.53	6.33	-	-	4.16
Critical Hdwy Stg 1	5.53	-	-	-	-
Critical Hdwy Stg 2	5.53	-	-	-	-
Follow-up Hdwy	3.617	3.417	-	-	2.254
Pot Cap-1 Maneuver	365	637	-	-	1142
Stage 1	662	-	-	-	-
Stage 2	682	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	337	637	-	-	1142
Mov Cap-2 Maneuver	337	-	-	-	-
Stage 1	662	-	-	-	-
Stage 2	630	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.8	0	2.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	558	1142
HCM Lane V/C Ratio	-	-	0.05	0.068
HCM Control Delay (s)	-	-	11.8	8.4
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.2	0.2

HCM 6th TWSC
2: Route 11 & Water Street/Crescent Drive

06/22/2023

Intersection												
Int Delay, s/veh	4.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↵	↕↔		↵	↕	
Traffic Vol, veh/h	0	0	0	128	0	27	3	168	113	16	235	1
Future Vol, veh/h	0	0	0	128	0	27	3	168	113	16	235	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Yield	-	-	None
Storage Length	-	-	-	-	-	-	120	-	1000	340	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	50	50	81	81	81	71	71	71	84	84	84
Heavy Vehicles, %	2	2	2	3	3	3	6	6	6	5	5	5
Mvmt Flow	0	0	0	158	0	33	4	237	159	19	280	1

Major/Minor	Minor2		Minor1			Major1		Major2				
Conflicting Flow All	446	564	281	644	644	198	281	0	0	237	0	0
Stage 1	319	319	-	325	325	-	-	-	-	-	-	-
Stage 2	127	245	-	319	319	-	-	-	-	-	-	-
Critical Hdwy	7.33	6.53	6.23	7.345	6.545	6.945	4.19	-	-	4.175	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.545	5.545	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.53	5.53	-	6.145	5.545	-	-	-	-	-	-	-
Follow-up Hdwy	3.519	4.019	3.319	3.5285	4.0285	3.3285	2.257	-	-	2.2475	-	-
Pot Cap-1 Maneuver	509	434	757	370	389	808	1254	-	-	1309	-	-
Stage 1	692	652	-	660	646	-	-	-	-	-	-	-
Stage 2	864	703	-	689	650	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	482	426	757	365	382	808	1254	-	-	1309	-	-
Mov Cap-2 Maneuver	482	426	-	365	382	-	-	-	-	-	-	-
Stage 1	690	642	-	658	644	-	-	-	-	-	-	-
Stage 2	826	701	-	679	640	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	21.7	0.1	0.5
HCM LOS	A	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1254	-	-	-	404	1309	-	-
HCM Lane V/C Ratio	0.003	-	-	-	0.474	0.015	-	-
HCM Control Delay (s)	7.9	-	-	0	21.7	7.8	-	-
HCM Lane LOS	A	-	-	A	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	2.5	0	-	-

HCM 6th TWSC
 3: Frances Street & I-81 / I-86 Access Road

06/22/2023

Intersection

Int Delay, s/veh	4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘	↑↑		↗
Traffic Vol, veh/h	128	34	139	185	0	129
Future Vol, veh/h	128	34	139	185	0	129
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	440	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	84	84
Heavy Vehicles, %	22	22	13	13	9	9
Mvmt Flow	141	37	153	203	0	154

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	178	0	- 89
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	-	4.36	-	- 7.08
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	-	2.33	-	- 3.39
Pot Cap-1 Maneuver	-	-	1319	-	0 929
Stage 1	-	-	-	-	0 -
Stage 2	-	-	-	-	0 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1319	-	- 929
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.5	9.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	929	-	-	1319	-
HCM Lane V/C Ratio	0.165	-	-	0.116	-
HCM Control Delay (s)	9.6	-	-	8.1	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.6	-	-	0.4	-

HCM 6th TWSC
4: Crescent Drive & Frances Street

06/22/2023

Intersection

Int Delay, s/veh	7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	20	18	135	32	11	1	111	12	8	3	22	5
Future Vol, veh/h	20	18	135	32	11	1	111	12	8	3	22	5
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	81	81	81	81	81	81	73	73	73	64	64	64
Heavy Vehicles, %	11	11	11	10	10	10	17	17	17	22	22	22
Mvmt Flow	25	22	167	40	14	1	152	16	11	5	34	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	15	0	0	189	0	0	272	251	106	264	334	15
Stage 1	-	-	-	-	-	-	156	156	-	95	95	-
Stage 2	-	-	-	-	-	-	116	95	-	169	239	-
Critical Hdwy	4.21	-	-	4.2	-	-	7.27	6.67	6.37	7.32	6.72	6.42
Critical Hdwy Stg 1	-	-	-	-	-	-	6.27	5.67	-	6.32	5.72	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.27	5.67	-	6.32	5.72	-
Follow-up Hdwy	2.299	-	-	2.29	-	-	3.653	4.153	3.453	3.698	4.198	3.498
Pot Cap-1 Maneuver	1546	-	-	1338	-	-	651	627	909	650	555	1009
Stage 1	-	-	-	-	-	-	812	741	-	865	779	-
Stage 2	-	-	-	-	-	-	854	788	-	788	672	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1546	-	-	1338	-	-	592	598	909	606	529	1009
Mov Cap-2 Maneuver	-	-	-	-	-	-	592	598	-	606	529	-
Stage 1	-	-	-	-	-	-	797	728	-	849	756	-
Stage 2	-	-	-	-	-	-	785	764	-	747	660	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.9			5.7			13.4			11.7		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	605	1546	-	-	1338	-	-	583
HCM Lane V/C Ratio	0.297	0.016	-	-	0.03	-	-	0.08
HCM Control Delay (s)	13.4	7.4	0	-	7.8	0	-	11.7
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	1.2	0	-	-	0.1	-	-	0.3

HCM 6th TWSC
5: Roberts Street & Frances Street

06/22/2023

Intersection

Int Delay, s/veh	2.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	7	19	0	0	29	3	0	0	0	3	0	15
Future Vol, veh/h	7	19	0	0	29	3	0	0	0	3	0	15
Conflicting Peds, #/hr	0	0	1	1	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	64	64	64	67	67	67	90	90	90	64	64	64
Heavy Vehicles, %	6	6	6	2	2	2	5	5	5	2	2	2
Mvmt Flow	11	30	0	0	43	4	0	0	0	5	0	23

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	47	0	0	31	0	0	110	100	31	97	98	45
Stage 1	-	-	-	-	-	-	53	53	-	45	45	-
Stage 2	-	-	-	-	-	-	57	47	-	52	53	-
Critical Hdwy	4.16	-	-	4.12	-	-	7.15	6.55	6.25	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.55	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.55	-	6.12	5.52	-
Follow-up Hdwy	2.254	-	-	2.218	-	-	3.545	4.045	3.345	3.518	4.018	3.318
Pot Cap-1 Maneuver	1535	-	-	1582	-	-	861	784	1035	885	792	1025
Stage 1	-	-	-	-	-	-	952	845	-	969	857	-
Stage 2	-	-	-	-	-	-	947	850	-	961	851	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1535	-	-	1580	-	-	836	778	1034	881	786	1025
Mov Cap-2 Maneuver	-	-	-	-	-	-	836	778	-	881	786	-
Stage 1	-	-	-	-	-	-	944	838	-	962	857	-
Stage 2	-	-	-	-	-	-	925	850	-	954	844	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	2			0			0			8.7		
HCM LOS							A			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1535	-	-	1580	-	-	998
HCM Lane V/C Ratio	-	0.007	-	-	-	-	-	0.028
HCM Control Delay (s)	0	7.4	0	-	0	-	-	8.7
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0.1

HCM 6th TWSC
1: Route 11 & Grosset Drive

06/22/2023

Intersection

Int Delay, s/veh	1.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔			↔
Traffic Vol, veh/h	14	64	172	6	36	306
Future Vol, veh/h	14	64	172	6	36	306
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	80	80	82	82
Heavy Vehicles, %	10	10	8	8	5	5
Mvmt Flow	16	71	215	8	44	373

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	680	219	0	0	223
Stage 1	219	-	-	-	-
Stage 2	461	-	-	-	-
Critical Hdwy	6.5	6.3	-	-	4.15
Critical Hdwy Stg 1	5.5	-	-	-	-
Critical Hdwy Stg 2	5.5	-	-	-	-
Follow-up Hdwy	3.59	3.39	-	-	2.245
Pot Cap-1 Maneuver	405	801	-	-	1328
Stage 1	799	-	-	-	-
Stage 2	619	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	388	801	-	-	1328
Mov Cap-2 Maneuver	388	-	-	-	-
Stage 1	799	-	-	-	-
Stage 2	593	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.1	0	0.8
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	673	1328
HCM Lane V/C Ratio	-	-	0.129	0.033
HCM Control Delay (s)	-	-	11.1	7.8
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.4	0.1

HCM 6th TWSC
2: Route 11 & Water Street/Crescent Drive

06/22/2023

Intersection

Int Delay, s/veh	4.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↵	↕↔		↵	↕	
Traffic Vol, veh/h	1	0	1	106	3	44	1	137	98	16	235	1
Future Vol, veh/h	1	0	1	106	3	44	1	137	98	16	235	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Yield	-	-	None
Storage Length	-	-	-	-	-	-	120	-	1000	340	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	50	50	72	72	72	90	90	90	93	93	93
Heavy Vehicles, %	2	2	2	5	5	5	4	4	4	4	4	4
Mvmt Flow	2	0	2	147	4	61	1	152	109	17	253	1

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	368	442	254	498	497	131	254	0	0	152	0	0
Stage 1	288	288	-	209	209	-	-	-	-	-	-	-
Stage 2	80	154	-	289	288	-	-	-	-	-	-	-
Critical Hdwy	7.33	6.53	6.23	7.375	6.575	6.975	4.16	-	-	4.16	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.575	5.575	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.53	5.53	-	6.175	5.575	-	-	-	-	-	-	-
Follow-up Hdwy	3.519	4.019	3.319	3.5475	4.0475	3.3475	2.238	-	-	2.238	-	-
Pot Cap-1 Maneuver	576	509	784	463	468	886	1297	-	-	1414	-	-
Stage 1	719	673	-	767	722	-	-	-	-	-	-	-
Stage 2	920	770	-	710	667	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	528	502	784	457	462	886	1297	-	-	1414	-	-
Mov Cap-2 Maneuver	528	502	-	457	462	-	-	-	-	-	-	-
Stage 1	718	665	-	766	721	-	-	-	-	-	-	-
Stage 2	851	769	-	700	659	-	-	-	-	-	-	-

Approach	EB		WB		NB			SB		
HCM Control Delay, s	10.7		16.2		0			0.5		
HCM LOS	B		C							

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1297	-	-	631	531	1414	-	-
HCM Lane V/C Ratio	0.001	-	-	0.006	0.4	0.012	-	-
HCM Control Delay (s)	7.8	-	-	10.7	16.2	7.6	-	-
HCM Lane LOS	A	-	-	B	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	1.9	0	-	-

HCM 6th TWSC
 3: Frances Street & I-81 / I-86 Access Road

06/22/2023

Intersection

Int Delay, s/veh	4.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘	↑↑		↗
Traffic Vol, veh/h	314	102	128	114	0	159
Future Vol, veh/h	314	102	128	114	0	159
Conflicting Peds, #/hr	0	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	440	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	93	93	66	66
Heavy Vehicles, %	15	15	14	14	1	1
Mvmt Flow	345	112	138	123	0	241

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	457	0	- 230
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	-	4.38	-	- 6.92
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	-	2.34	-	- 3.31
Pot Cap-1 Maneuver	-	-	1020	-	0 775
Stage 1	-	-	-	-	0 -
Stage 2	-	-	-	-	0 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1020	-	- 774
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	4.8	11.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	774	-	-	1020	-
HCM Lane V/C Ratio	0.311	-	-	0.135	-
HCM Control Delay (s)	11.7	-	-	9.1	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	1.3	-	-	0.5	-

HCM 6th TWSC
4: Crescent Drive & Frances Street

06/22/2023

Intersection

Int Delay, s/veh	6.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	21	50	159	35	7	1	147	5	20	3	22	5
Future Vol, veh/h	21	50	159	35	7	1	147	5	20	3	22	5
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	73	73	73	83	83	83	89	89	89	59	59	59
Heavy Vehicles, %	5	5	5	3	3	3	3	3	3	12	12	12
Mvmt Flow	29	68	218	42	8	1	165	6	22	5	37	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	9	0	0	286	0	0	350	328	177	342	437	9
Stage 1	-	-	-	-	-	-	235	235	-	93	93	-
Stage 2	-	-	-	-	-	-	115	93	-	249	344	-
Critical Hdwy	4.15	-	-	4.13	-	-	7.13	6.53	6.23	7.22	6.62	6.32
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.22	5.62	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.22	5.62	-
Follow-up Hdwy	2.245	-	-	2.227	-	-	3.527	4.027	3.327	3.608	4.108	3.408
Pot Cap-1 Maneuver	1591	-	-	1270	-	-	603	589	863	594	498	1044
Stage 1	-	-	-	-	-	-	766	709	-	890	799	-
Stage 2	-	-	-	-	-	-	887	816	-	733	619	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1591	-	-	1270	-	-	539	557	863	550	471	1044
Mov Cap-2 Maneuver	-	-	-	-	-	-	539	557	-	550	471	-
Stage 1	-	-	-	-	-	-	749	693	-	870	773	-
Stage 2	-	-	-	-	-	-	810	789	-	693	605	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.7			6.5			14.7			12.6		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	564	1591	-	-	1270	-	-	527
HCM Lane V/C Ratio	0.343	0.018	-	-	0.033	-	-	0.096
HCM Control Delay (s)	14.7	7.3	0	-	7.9	0	-	12.6
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	1.5	0.1	-	-	0.1	-	-	0.3

HCM 6th TWSC
5: Roberts Street & Frances Street

06/22/2023

Intersection

Int Delay, s/veh	2.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	20	52	1	0	30	0	4	0	0	0	0	9
Future Vol, veh/h	20	52	1	0	30	0	4	0	0	0	0	9
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	72	72	72	90	90	100	90	90	90
Heavy Vehicles, %	4	4	4	2	2	2	5	5	5	12	12	12
Mvmt Flow	22	58	1	0	42	0	4	0	0	0	0	10

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	42	0	0	59	0	0	150	145	59	145	145	42
Stage 1	-	-	-	-	-	-	103	103	-	42	42	-
Stage 2	-	-	-	-	-	-	47	42	-	103	103	-
Critical Hdwy	4.14	-	-	4.12	-	-	7.15	6.55	6.25	7.22	6.62	6.32
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.55	-	6.22	5.62	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.55	-	6.22	5.62	-
Follow-up Hdwy	2.236	-	-	2.218	-	-	3.545	4.045	3.345	3.608	4.108	3.408
Pot Cap-1 Maneuver	1554	-	-	1545	-	-	811	741	998	802	728	1001
Stage 1	-	-	-	-	-	-	896	804	-	948	841	-
Stage 2	-	-	-	-	-	-	959	854	-	879	791	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1554	-	-	1545	-	-	794	730	998	793	717	1001
Mov Cap-2 Maneuver	-	-	-	-	-	-	794	730	-	793	717	-
Stage 1	-	-	-	-	-	-	883	792	-	934	841	-
Stage 2	-	-	-	-	-	-	949	854	-	866	779	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	2			0			9.6			8.6		
HCM LOS							A			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	794	1554	-	-	1545	-	-	1001
HCM Lane V/C Ratio	0.006	0.014	-	-	-	-	-	0.01
HCM Control Delay (s)	9.6	7.4	0	-	0	-	-	8.6
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

HCM 6th TWSC
1: Route 11 & Grosset Drive

06/22/2023

Intersection

Int Delay, s/veh	3.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	TT		TT			TT
Traffic Vol, veh/h	7	40	263	46	274	192
Future Vol, veh/h	7	40	263	46	274	192
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	69	69	93	93
Heavy Vehicles, %	13	13	5	5	6	6
Mvmt Flow	8	44	381	67	295	206

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1211	415	0	0	448
Stage 1	415	-	-	-	-
Stage 2	796	-	-	-	-
Critical Hdwy	6.53	6.33	-	-	4.16
Critical Hdwy Stg 1	5.53	-	-	-	-
Critical Hdwy Stg 2	5.53	-	-	-	-
Follow-up Hdwy	3.617	3.417	-	-	2.254
Pot Cap-1 Maneuver	191	614	-	-	1091
Stage 1	643	-	-	-	-
Stage 2	426	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	133	614	-	-	1091
Mov Cap-2 Maneuver	133	-	-	-	-
Stage 1	643	-	-	-	-
Stage 2	296	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.4	0	5.6
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	399	1091
HCM Lane V/C Ratio	-	-	0.131	0.27
HCM Control Delay (s)	-	-	15.4	9.5
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.4	1.1

HCM 6th TWSC
2: Route 11 & Water Street/Crescent Drive

06/22/2023

Intersection

Int Delay, s/veh	17.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↵	↕↔		↵	↕	
Traffic Vol, veh/h	0	0	0	259	0	27	3	175	125	13	207	0
Future Vol, veh/h	0	0	0	259	0	27	3	175	125	13	207	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Yield	-	-	None
Storage Length	-	-	-	-	-	-	120	-	1000	340	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	50	50	81	81	81	71	71	71	84	84	84
Heavy Vehicles, %	2	2	2	3	3	3	6	6	6	5	5	5
Mvmt Flow	0	0	0	320	0	33	4	246	176	15	246	0

Major/Minor	Minor2		Minor1			Major1		Major2				
Conflicting Flow All	407	530	246	618	618	211	246	0	0	246	0	0
Stage 1	276	276	-	342	342	-	-	-	-	-	-	-
Stage 2	131	254	-	276	276	-	-	-	-	-	-	-
Critical Hdwy	7.33	6.53	6.23	7.345	6.545	6.945	4.19	-	-	4.175	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.545	5.545	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.53	5.53	-	6.145	5.545	-	-	-	-	-	-	-
Follow-up Hdwy	3.519	4.019	3.319	3.5285	4.0285	3.3285	2.257	-	-	2.2475	-	-
Pot Cap-1 Maneuver	541	454	792	386	402	792	1293	-	-	1299	-	-
Stage 1	730	681	-	645	635	-	-	-	-	-	-	-
Stage 2	859	696	-	727	679	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	512	447	792	382	396	792	1293	-	-	1299	-	-
Mov Cap-2 Maneuver	512	447	-	382	396	-	-	-	-	-	-	-
Stage 1	728	673	-	643	633	-	-	-	-	-	-	-
Stage 2	820	694	-	719	671	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	52.1	0.1	0.5
HCM LOS	A	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1293	-	-	-	402	1299	-	-
HCM Lane V/C Ratio	0.003	-	-	-	0.878	0.012	-	-
HCM Control Delay (s)	7.8	-	-	0	52.1	7.8	-	-
HCM Lane LOS	A	-	-	A	F	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	8.8	0	-	-

HCM 6th TWSC
 3: Frances Street & I-81 / I-86 Access Road

06/22/2023

Intersection

Int Delay, s/veh	5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘	↑↑		↗
Traffic Vol, veh/h	128	34	270	185	0	144
Future Vol, veh/h	128	34	270	185	0	144
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	440	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	84	84
Heavy Vehicles, %	22	22	13	13	9	9
Mvmt Flow	141	37	297	203	0	171

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	178	0	- 89
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	-	4.36	-	- 7.08
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	-	2.33	-	- 3.39
Pot Cap-1 Maneuver	-	-	1319	-	0 929
Stage 1	-	-	-	-	0 -
Stage 2	-	-	-	-	0 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1319	-	- 929
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	5.1	9.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	929	-	-	1319	-
HCM Lane V/C Ratio	0.185	-	-	0.225	-
HCM Control Delay (s)	9.8	-	-	8.5	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.7	-	-	0.9	-

HCM 6th TWSC
4: Crescent Drive & Frances Street

06/22/2023

Intersection

Int Delay, s/veh	5.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	20	18	266	32	11	1	123	12	8	0	7	7
Future Vol, veh/h	20	18	266	32	11	1	123	12	8	0	7	7
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	81	81	81	81	81	81	73	73	73	64	64	64
Heavy Vehicles, %	11	11	11	10	10	10	17	17	17	22	22	22
Mvmt Flow	25	22	328	40	14	1	168	16	11	0	11	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	15	0	0	350	0	0	342	331	186	345	495	15
Stage 1	-	-	-	-	-	-	236	236	-	95	95	-
Stage 2	-	-	-	-	-	-	106	95	-	250	400	-
Critical Hdwy	4.21	-	-	4.2	-	-	7.27	6.67	6.37	7.32	6.72	6.42
Critical Hdwy Stg 1	-	-	-	-	-	-	6.27	5.67	-	6.32	5.72	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.27	5.67	-	6.32	5.72	-
Follow-up Hdwy	2.299	-	-	2.29	-	-	3.653	4.153	3.453	3.698	4.198	3.498
Pot Cap-1 Maneuver	1546	-	-	1166	-	-	585	565	819	573	448	1009
Stage 1	-	-	-	-	-	-	735	683	-	865	779	-
Stage 2	-	-	-	-	-	-	864	788	-	712	568	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1546	-	-	1166	-	-	543	534	819	529	423	1009
Mov Cap-2 Maneuver	-	-	-	-	-	-	543	534	-	529	423	-
Stage 1	-	-	-	-	-	-	720	669	-	847	752	-
Stage 2	-	-	-	-	-	-	813	760	-	671	556	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	6	15	11.3
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	553	1546	-	-	1166	-	-	596
HCM Lane V/C Ratio	0.354	0.016	-	-	0.034	-	-	0.037
HCM Control Delay (s)	15	7.4	0	-	8.2	0	-	11.3
HCM Lane LOS	C	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	1.6	0	-	-	0.1	-	-	0.1

HCM 6th TWSC
5: Roberts Street & Frances Street

06/22/2023

Intersection

Int Delay, s/veh	2.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	7	19	0	0	29	3	0	0	0	3	0	15
Future Vol, veh/h	7	19	0	0	29	3	0	0	0	3	0	15
Conflicting Peds, #/hr	0	0	1	1	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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	64	64	64	67	67	67	90	90	90	64	64	64
Heavy Vehicles, %	6	6	6	2	2	2	5	5	5	2	2	2
Mvmt Flow	11	30	0	0	43	4	0	0	0	5	0	23

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	47	0	0	31	0	0	110	100	31	97	98	45
Stage 1	-	-	-	-	-	-	53	53	-	45	45	-
Stage 2	-	-	-	-	-	-	57	47	-	52	53	-
Critical Hdwy	4.16	-	-	4.12	-	-	7.15	6.55	6.25	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.55	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.55	-	6.12	5.52	-
Follow-up Hdwy	2.254	-	-	2.218	-	-	3.545	4.045	3.345	3.518	4.018	3.318
Pot Cap-1 Maneuver	1535	-	-	1582	-	-	861	784	1035	885	792	1025
Stage 1	-	-	-	-	-	-	952	845	-	969	857	-
Stage 2	-	-	-	-	-	-	947	850	-	961	851	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1535	-	-	1580	-	-	836	778	1034	881	786	1025
Mov Cap-2 Maneuver	-	-	-	-	-	-	836	778	-	881	786	-
Stage 1	-	-	-	-	-	-	944	838	-	962	857	-
Stage 2	-	-	-	-	-	-	925	850	-	954	844	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	2			0			0			8.7		
HCM LOS							A			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1535	-	-	1580	-	-	998
HCM Lane V/C Ratio	-	0.007	-	-	-	-	-	0.028
HCM Control Delay (s)	0	7.4	0	-	0	-	-	8.7
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0.1

HCM 6th TWSC
1: Route 11 & Grosset Drive

06/22/2023

Intersection

Int Delay, s/veh	5.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	TT		TT			TT
Traffic Vol, veh/h	43	231	172	9	51	306
Future Vol, veh/h	43	231	172	9	51	306
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	80	80	82	82
Heavy Vehicles, %	10	10	8	8	5	5
Mvmt Flow	48	257	215	11	62	373

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	718	221	0	0	226
Stage 1	221	-	-	-	-
Stage 2	497	-	-	-	-
Critical Hdwy	6.5	6.3	-	-	4.15
Critical Hdwy Stg 1	5.5	-	-	-	-
Critical Hdwy Stg 2	5.5	-	-	-	-
Follow-up Hdwy	3.59	3.39	-	-	2.245
Pot Cap-1 Maneuver	384	799	-	-	1325
Stage 1	797	-	-	-	-
Stage 2	595	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	361	799	-	-	1325
Mov Cap-2 Maneuver	361	-	-	-	-
Stage 1	797	-	-	-	-
Stage 2	560	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.7	0	1.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	671	1325
HCM Lane V/C Ratio	-	-	0.454	0.047
HCM Control Delay (s)	-	-	14.7	7.9
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	2.4	0.1

HCM 6th TWSC
2: Route 11 & Water Street/Crescent Drive

06/22/2023

Intersection

Int Delay, s/veh	5.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	1	0	1	116	3	44	1	196	206	16	240	1
Future Vol, veh/h	1	0	1	116	3	44	1	196	206	16	240	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Yield	-	-	None
Storage Length	-	-	-	-	-	-	120	-	1000	340	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	50	50	72	72	72	90	90	90	93	93	93
Heavy Vehicles, %	2	2	2	5	5	5	4	4	4	4	4	4
Mvmt Flow	2	0	2	161	4	61	1	218	229	17	258	1

Major/Minor	Minor2		Minor1			Major1		Major2				
Conflicting Flow All	406	513	259	629	628	224	259	0	0	218	0	0
Stage 1	293	293	-	335	335	-	-	-	-	-	-	-
Stage 2	113	220	-	294	293	-	-	-	-	-	-	-
Critical Hdwy	7.33	6.53	6.23	7.375	6.575	6.975	4.16	-	-	4.16	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.575	5.575	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.53	5.53	-	6.175	5.575	-	-	-	-	-	-	-
Follow-up Hdwy	3.519	4.019	3.319	3.5475	4.0475	3.3475	2.238	-	-	2.238	-	-
Pot Cap-1 Maneuver	542	464	779	375	394	772	1291	-	-	1337	-	-
Stage 1	714	670	-	646	635	-	-	-	-	-	-	-
Stage 2	880	721	-	706	663	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	490	458	779	370	388	772	1291	-	-	1337	-	-
Mov Cap-2 Maneuver	490	458	-	370	388	-	-	-	-	-	-	-
Stage 1	713	661	-	645	634	-	-	-	-	-	-	-
Stage 2	804	720	-	695	654	-	-	-	-	-	-	-

Approach	EB		WB			NB		SB		
HCM Control Delay, s	11		22.2			0		0.5		
HCM LOS	B		C							

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1291	-	-	602	431	1337	-	-
HCM Lane V/C Ratio	0.001	-	-	0.007	0.525	0.013	-	-
HCM Control Delay (s)	7.8	-	-	11	22.2	7.7	-	-
HCM Lane LOS	A	-	-	B	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	3	0	-	-

HCM 6th TWSC
 3: Frances Street & I-81 / I-86 Access Road

06/22/2023

Intersection

Int Delay, s/veh	6.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↘	↑↑		↗
Traffic Vol, veh/h	314	102	138	114	0	267
Future Vol, veh/h	314	102	138	114	0	267
Conflicting Peds, #/hr	0	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	440	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	93	93	66	66
Heavy Vehicles, %	15	15	14	14	1	1
Mvmt Flow	345	112	148	123	0	405

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	457	0	- 230
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	-	4.38	-	- 6.92
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	-	2.34	-	- 3.31
Pot Cap-1 Maneuver	-	-	1020	-	0 775
Stage 1	-	-	-	-	0 -
Stage 2	-	-	-	-	0 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1020	-	- 774
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	5	14.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	774	-	-	1020	-
HCM Lane V/C Ratio	0.523	-	-	0.145	-
HCM Control Delay (s)	14.6	-	-	9.1	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	3.1	-	-	0.5	-

HCM 6th TWSC
4: Crescent Drive & Frances Street

06/22/2023

Intersection

Int Delay, s/veh	10.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	21	50	169	35	7	1	255	5	20	3	22	5
Future Vol, veh/h	21	50	169	35	7	1	255	5	20	3	22	5
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	73	73	73	83	83	83	89	89	89	59	59	59
Heavy Vehicles, %	5	5	5	3	3	3	3	3	3	12	12	12
Mvmt Flow	29	68	232	42	8	1	287	6	22	5	37	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	9	0	0	300	0	0	357	335	184	349	451	9
Stage 1	-	-	-	-	-	-	242	242	-	93	93	-
Stage 2	-	-	-	-	-	-	115	93	-	256	358	-
Critical Hdwy	4.15	-	-	4.13	-	-	7.13	6.53	6.23	7.22	6.62	6.32
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.22	5.62	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.22	5.62	-
Follow-up Hdwy	2.245	-	-	2.227	-	-	3.527	4.027	3.327	3.608	4.108	3.408
Pot Cap-1 Maneuver	1591	-	-	1255	-	-	596	584	856	587	489	1044
Stage 1	-	-	-	-	-	-	759	704	-	890	799	-
Stage 2	-	-	-	-	-	-	887	816	-	727	610	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1591	-	-	1255	-	-	531	551	856	543	462	1044
Mov Cap-2 Maneuver	-	-	-	-	-	-	531	551	-	543	462	-
Stage 1	-	-	-	-	-	-	742	688	-	870	772	-
Stage 2	-	-	-	-	-	-	809	788	-	686	596	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.6			6.5			20.2			12.7		
HCM LOS							C			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	546	1591	-	-	1255	-	-	518
HCM Lane V/C Ratio	0.576	0.018	-	-	0.034	-	-	0.098
HCM Control Delay (s)	20.2	7.3	0	-	8	0	-	12.7
HCM Lane LOS	C	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	3.6	0.1	-	-	0.1	-	-	0.3

HCM 6th TWSC
5: Roberts Street & Frances Street

06/22/2023

Intersection

Int Delay, s/veh	2.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	20	52	1	0	30	0	4	0	0	0	0	9
Future Vol, veh/h	20	52	1	0	30	0	4	0	0	0	0	9
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	72	72	72	90	90	100	90	90	90
Heavy Vehicles, %	4	4	4	2	2	2	5	5	5	12	12	12
Mvmt Flow	22	58	1	0	42	0	4	0	0	0	0	10

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	42	0	0	59	0	0	150	145	59	145	145	42
Stage 1	-	-	-	-	-	-	103	103	-	42	42	-
Stage 2	-	-	-	-	-	-	47	42	-	103	103	-
Critical Hdwy	4.14	-	-	4.12	-	-	7.15	6.55	6.25	7.22	6.62	6.32
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.55	-	6.22	5.62	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.55	-	6.22	5.62	-
Follow-up Hdwy	2.236	-	-	2.218	-	-	3.545	4.045	3.345	3.608	4.108	3.408
Pot Cap-1 Maneuver	1554	-	-	1545	-	-	811	741	998	802	728	1001
Stage 1	-	-	-	-	-	-	896	804	-	948	841	-
Stage 2	-	-	-	-	-	-	959	854	-	879	791	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1554	-	-	1545	-	-	794	730	998	793	717	1001
Mov Cap-2 Maneuver	-	-	-	-	-	-	794	730	-	793	717	-
Stage 1	-	-	-	-	-	-	883	792	-	934	841	-
Stage 2	-	-	-	-	-	-	949	854	-	866	779	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	2			0			9.6			8.6		
HCM LOS							A			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	794	1554	-	-	1545	-	-	1001
HCM Lane V/C Ratio	0.006	0.014	-	-	-	-	-	0.01
HCM Control Delay (s)	9.6	7.4	0	-	0	-	-	8.6
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0