



**Traffic Impact Study
Chick-fil-A® #4815
2700 US-31 South
Traverse City, Michigan**

Prepared for:

Chick-fil-A®
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Table of Contents

INTRODUCTION	1
EXISTING CONDITIONS	3
Key Study Area Roadways	3
Data Collection	3
FUTURE (2022) CONDITIONS	4
Proposed Development and Site Access.....	4
Background Traffic Growth	4
Trip Generation	4
Trip Distribution	5
Future (2022) Capacity Analysis	5
FUTURE (2032) CONDITIONS	9
Future (2032) Traffic Volumes	9
Future (2032) Capacity Analysis	9
CONCLUSIONS AND RECOMMENDATIONS	11
Conclusions.....	11
Recommendations	11

Appendix

List of Figures and Tables

Figures

Figure 1. Location Map and Study Area	1
Figure 2. Future (2022) Trip Distribution and Traffic Assignment.....	7
Figure 3. Future (2022) Peak-Hour Volumes and Levels-of-Service.....	8
Figure 4. Future (2032) Peak-Hour Volumes and Levels-of-Service.....	10

Tables

Table 1. Chick-fil-A® Peak-Hour Trip Generation Comparison	4
Table 2. Projected Weekday Morning and Afternoon Peak-Hour Trip Generation.....	5
Table 3. Future (2022) Levels-of-Service and Delay	6
Table 4. Future (2032) Levels-of-Service and Delay	9

CHAPTER 1

INTRODUCTION

Chick-fil-A® is planning to construct a 4,978 square-foot fast-food restaurant with a drive-through at 2700 US-31 South. In addition, a 100-bed extended stay hotel is planned for the site. The proposed site is bordered on the north by the Williams Kia dealership and on the south by the Williams Honda dealership. On the west side of US-31 exists a Red Lobster restaurant and Discount Tire store. Figure 1 shows the location of the proposed site. Access to the proposed site will be via full access driveway to US-31.

The purpose of this traffic impact study was to analyze the potential impacts of the planned development and to identify what physical and/or operational roadway system improvements may be necessary to mitigate impacts created by this development's traffic. Tasks undertaken to complete the analyses include:

1. **Data Collection.** Applicable information regarding the existing operating conditions of the adjacent roadways was obtained from the Michigan Department of Transportation (MDOT). Data was taken from Gridsmart cameras installed at adjacent intersections that provided 24-hour turning movement count data from July 2020. Weekday morning, weekday afternoon, and Saturday midday peak hour volumes along US 31 at the proposed site were determined from the provided data. Information regarding lane configurations, speed limits, traffic controls, and other related data for the study area roadways was also collected.
2. **Background Growth.** Per input from Garfield Township and the Michigan Department of Transportation (MDOT) staff, an annual background traffic growth rate of 0.75 percent was applied to 2020 traffic count data to reflect anticipated non-development traffic increases from 2020 to the 2022 and 2032 horizon years.



Figure 1. Location Map and Study Area

3. **Trip Generation/Distribution.** The number of trips the proposed development is expected to generate during peak hours was identified. These trips were then assigned to the adjacent street system based upon the patterns followed by existing traffic.
4. **Levels of Service.** Capacity calculations were completed at the site access point to identify anticipated future peak hour operational characteristics.
5. **Mitigation.** Roadway/intersection improvements were identified, when applicable, that will enable the adjacent roadways and study area intersections to maintain equal and/or acceptable levels of operation under future conditions upon the addition of background traffic growth and/or due to development traffic.

Pre-study coordination was completed with Garfield Township and MDOT staff to help identify the required study area, study parameters, and any specific areas of concern. The following chapters outline the results of analyses completed during the study process.

CHAPTER 2

EXISTING CONDITIONS

The first step in the identification of potential traffic impacts is to determine how well the adjacent streets are operating under current conditions. This chapter summarizes the data collection and existing operating conditions analysis procedures.

Key Study Area Roadways

US Highway 31

US-31 is a major north-south arterial roadway within the study area under MDOT operational jurisdiction. Within the study area, it generally has a five-lane cross section with a speed limit of 45 miles per hour. Weekday 24-hour traffic volumes along US-31 vary significantly by season, but has an annual average daily traffic (AADT) of approximately 28,000 vehicles per day.



Northbound view of US-31 approaching the site

Data Collection

Existing traffic volumes along US 31 at the proposed site were collected in July 2020. The turning-movement counts were taken from Gridsmart cameras installed at adjacent intersections that provided 24-hour turning movement count data. From that data, morning, evening, and Saturday peak hours were determined. Based on discussion with MDOT, the adjustment for COVID-19 impacts on traffic would facilitate increasing field counts from 1-6 percent. For this study, a 6 percent increase was added to the counts to adjust for the COVID-19 impacts on traffic. As the volumes along US-31 vary significantly by season, these data were factored down by 31 percent for the weekday morning and afternoon counts and 28 percent for the Saturday count, based on MDOT seasonal factor adjustments. Detailed printouts of the count reports are included in the appendix.

These counts indicated that the typical weekday peak hours generally occur between 8:00 a.m. to 9:00 a.m. and 4:00 p.m. to 5:00 p.m. The Saturday midday peak hour occurred between 12:15 p.m. to 1:15 p.m.

Existing Conditions Capacity Analysis

An existing conditions capacity analysis was not completed as the site currently includes only one single family home which would generate a minimal number of trips.

CHAPTER 3

FUTURE (2022) CONDITIONS

The purpose of this chapter is to summarize the anticipated future (2022) traffic conditions within the study area with the proposed development traffic in place. These analyses provide the before/after comparison of future conditions and helps define the timing and applicability of any potential 2022 roadway improvements necessary to mitigate the impact of the proposed development.

Proposed Development and Site Access

Chick-fil-A® is planning to construct a 4,978 square-foot fast-food restaurant with a drive-through at 2700 US-31 South. In addition, a 100-bed extended stay hotel is planned for the site. Access to the proposed site will be via full access driveway to US-31. A copy of the proposed site plan is included in the appendix.

Background Traffic Growth

Based on discussions with the Township and MDOT, the existing adjusted peak hour volumes within the study area were increased by 0.75 percent per year. As the counts were taken in 2020 and a one-year completion would occur in 2022, the 0.75 percent increase was applied over two years to represent background traffic growth.

Trip Generation

Trip Generation, Tenth Edition, by the Institute of Transportation Engineers (ITE) and previously collected trip generation data at an existing Chick-fil-A® site were used to calculate the anticipated traffic that may be generated by the proposed site. Trips were calculated for the typical weekday morning, weekday afternoon, and Saturday midday peak hours. Table 1 shows a comparison between the ITE trip generation calculation results and the data collected at the existing Chick-fil-A® site. The Chick-fil-A® trip generation data was collected in 2017 at a similar site located in South Bend, IN. The driveway counts and an aerial of the South Bend site are included in the appendix.

Table 1. Chick-fil-A® Peak Hour Trip Generation Comparison

Source	Size	AM		PM		SAT	
		Enter	Exit	Enter	Exit	Enter	Exit
South Bend, IN Chick-fil-A® ¹	5,000 sq. ft.	48	51	135	129	169	151
Fast-Food Restaurant with Drive-through ²	4,978 sq. ft.	102	98	85	78	139	134
Trip Differential:		-54	-47	50	51	30	17

1. Chick-fil-A® Traffic Impact Study (CFA #3844), 2017

2. ITE Trip Generation Manual, 10th Edition, Land Use Code 934

As shown in Table 1, the South Bend Chick-fil-A® site generated significantly less trips during the weekday morning peak hour while generating significantly more during the weekday afternoon peak hour. There was a less significant trip differential during the Saturday midday peak hour. The greater of the ITE and the Chick-fil-A® trip generation rate was utilized for the future conditions analyses as it represents a conservative estimate as to the number of trips the proposed Chick-fil-A® will generate. Table 2 shows the weekday morning, weekday afternoon, and Saturday midday peak hour trips anticipated to be generated by the site, including adjustments for pass-by trips.

The ITE *Trip Generation Manual* was utilized to determine the trip generation for the proposed 100-bed extended stay hotel on the site. Information provided outlined 100 beds, which was analyzed as 100 rooms for the most conservative estimate. The trip generation data is also displayed in Table 2.

Table 2. Projected Weekday Morning and Afternoon Peak Hour Trip Generation

Land Use	Size	AM		PM		SAT	
		Enter	Exit	Enter	Exit	Enter	Exit
Fast-food Restaurant with Drive-through	4,978 sq. ft.	102	98	135	129	169	151
Hotel ¹	100 beds	27	18	25	24	41	32
Total Trips		129	116	160	153	210	183
	Less pass-by trips ^{2,3} :	50	48	68	64	85	75
	Total new trips:	79	68	92	89	125	108

1. ITE Trip Generation Manual, 10th Edition, Land Use Code 310

2. ITE pass-by reduction percentages applied to commercial uses: Fast-food Restaurant (49% AM peak, 50% PM peak)

3. 50% pass-by reduction assumed for Saturday midday peak-hour

Source: Chick-fil-A® Traffic Impact Study (CFA #3844), 2017 and ITE *Trip Generation Manual*, 10th Edition

Trip Distribution

The directional distribution of the project-generated new trips was based upon existing travel patterns and engineering judgment. The approximate directional distribution to/from the proposed development for site-generated new trips is anticipated to be as follows:

Direction	AM Peak	PM Peak	Saturday Peak
To/from US-31 north	35%	55%	45%
To/from US-31 south	65%	45%	55%

Based upon the above distribution patterns for new trips, existing directional patterns along US-31 for pass-by trips, and the current site plan layout, the anticipated peak hour site-generated traffic was assigned to the proposed access driveway. Figure 2 shows the total anticipated morning, afternoon, and Saturday peak hour trips for site-generated traffic upon full completion and occupancy of the proposed site.

The anticipated site trips were added to the background (2022) peak hour volumes to depict the estimated total future (2022) volumes during the weekday morning, weekday afternoon, and Saturday midday peak hours. Figure 3 shows the total anticipated future (2022) volumes.

Future (2022) Capacity Analysis

Intersection "level-of-service" (LOS) calculations were completed to evaluate the future (2022) peak hour conditions at the proposed driveway. These calculations were completed using techniques outlined in the *Highway Capacity Manual*, published by the Transportation Research Board. Per Township and MDOT requirements, *Synchro*® traffic analysis software, version 10, based on the *Highway Capacity Manual* methodologies, was used in the analysis.

Levels-of-service at signalized and unsignalized intersections relates to the delay, traffic volumes, and intersection geometry. Levels-of-service (LoS) are expressed in a range from "A" to "F", with "A" denoting the highest, or best, operating conditions. Generally, a LoS "D" rating is considered the minimum acceptable service level for signalized and unsignalized intersections in most areas, although an LoS "E" or "F" can be deemed as acceptable at times in urban areas, during the peak hours, or for low-volume movements. The criteria for determining the LoS at signalized and unsignalized intersections are outlined in the appendix of this report.

Results of the level-of-service analyses are shown in Table 3 and in Figure 3. As shown, all movements are anticipated to operate at LoS "D" or better during the weekday morning, weekday afternoon, and Saturday midday peak hours except for some of the left-turn movements. Copies of the *Synchro*® analyses for the future (2022) conditions are included in the appendix.

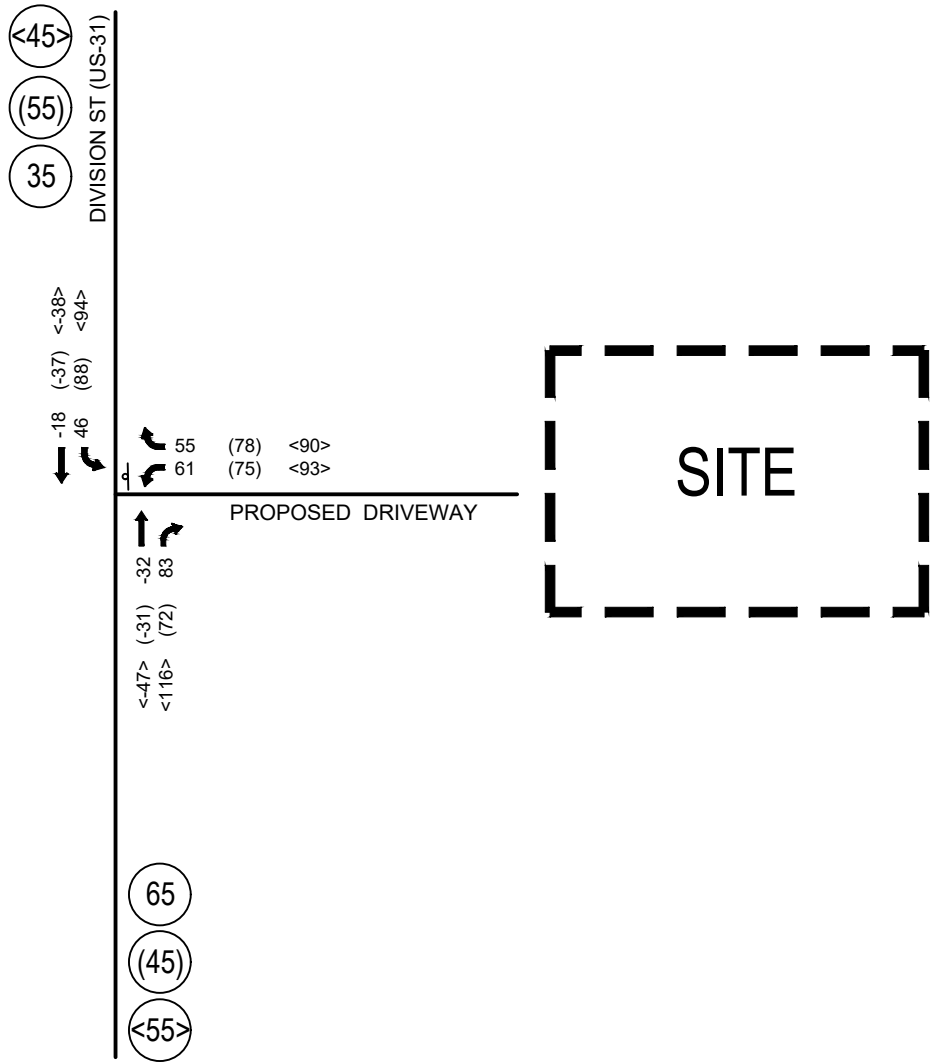
The stop-controlled westbound left-turn movement at the US-31/access driveway intersection is anticipated to operate at LoS "E" during the weekday afternoon with an anticipated 95th percentile queue of approximately 2 vehicles. The Saturday midday peak hour is anticipated to operate at LoS "F" with an anticipated 95th percentile queue of approximately 4 vehicles. These levels-of-service would be considered acceptable as the 95th percentile queue is anticipated to be short. In addition, these level-of-service values can be expected along a high-volume major corridor during the peak hours, particularly for left-turn movements. Site traffic would also have the option of turning right to exit the site during these times.

While not considered as part of this analysis, the site owner is working with adjacent property owners to secure cross-access between this development, the Lowes site to the north, and the Grand Traverse Mall site to the southeast. This cross-access would provide customers with access to the existing traffic signal at the Lowes Driveway and the roadway network surrounding the mall site.

Table 3. Future (2022) Levels-of-Service and Delay

Intersection/ Movement	Future (2022) Conditions					
	AM		PM		SAT	
	LoS	Delay	LoS	Delay	LoS	Delay
US-31/Proposed Driveway						
Overall	A	1.7	A	2.3	A	4.2
<i>WBL</i>	C	22.4	E	47.8	F	84.1
<i>WBR</i>	B	12.4	B	14.3	C	17.1
<i>NBT/R</i>	A	0	A	0	A	0
<i>SBL</i>	B	10.3	B	11.9	C	14.3
<i>SBT</i>	A	0	A	0	A	0

Source: Progressive AE, March 2021



TRAFFIC IMPACT STUDY CHICK-FIL-A #4815 US HIGHWAY 31 TRAVERSE CITY, MICHIGAN

LEGEND

XX (XX) <XX> = AM (PM) <SAT> GENERATED TRIPS

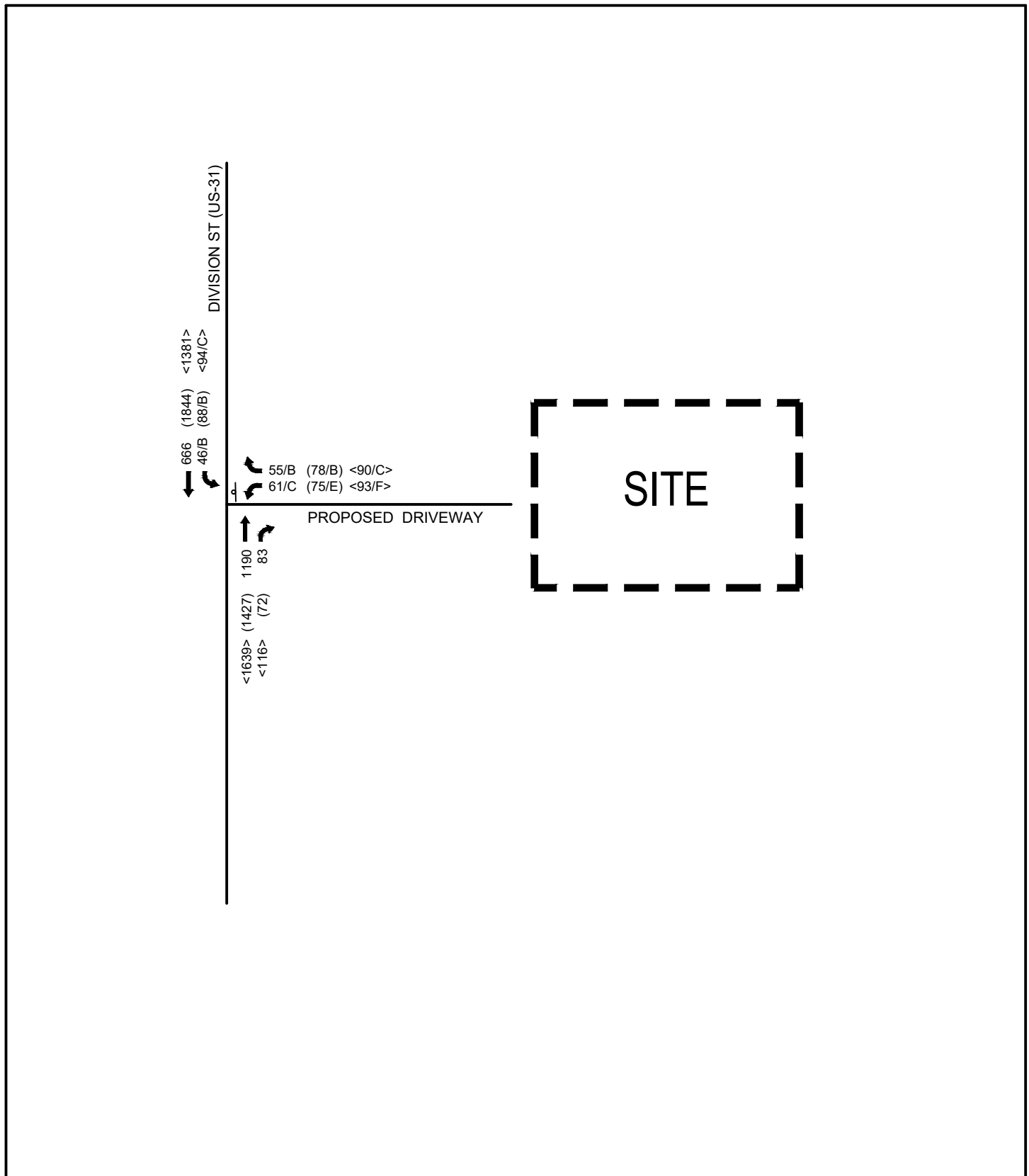
(X%) = DISTRIBUTION FOR NEW TRIPS

FUTURE (2022) TRIP DISTRIBUTION
+ TRAFFIC ASSIGNMENT



FIGURE

2



TRAFFIC IMPACT STUDY CHICK-FIL-A #4815 US HIGHWAY 31 TRAVERSE CITY, MICHIGAN

LEGEND

- XX (XX) <XX> = AM (PM) <SAT>
- A = LEVEL-OF-SERVICE
- Ⓢ = SIGNALIZED INTERSECTION
- Ⓟ = STOP-CONTROLLED

FUTURE (2022) PEAK-HOUR VOLUMES
+ LEVELS-OF-SERVICE

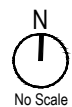


FIGURE
3

CHAPTER 4

FUTURE (2032) CONDITIONS

The purpose of this chapter is to summarize the anticipated future (2032) traffic conditions within the study area ten years after the completion of the proposed development.

Future (2032) Traffic Volumes

As with the future (2022) conditions, the existing adjusted peak hour volumes within the study area were increased by 0.75 percent annually to account for background traffic growth. As the analysis year is 2032 (twelve years), existing traffic volumes were increased by 9.4 percent.

The site generated trips discussed in the previous chapter were added to the background (2032) volumes to depict the estimated total future (2032) volumes during the weekday morning, weekday afternoon, and Saturday midday peak hours. Figure 4 shows the total anticipated future (2032) volumes.

Future (2032) Capacity Analysis

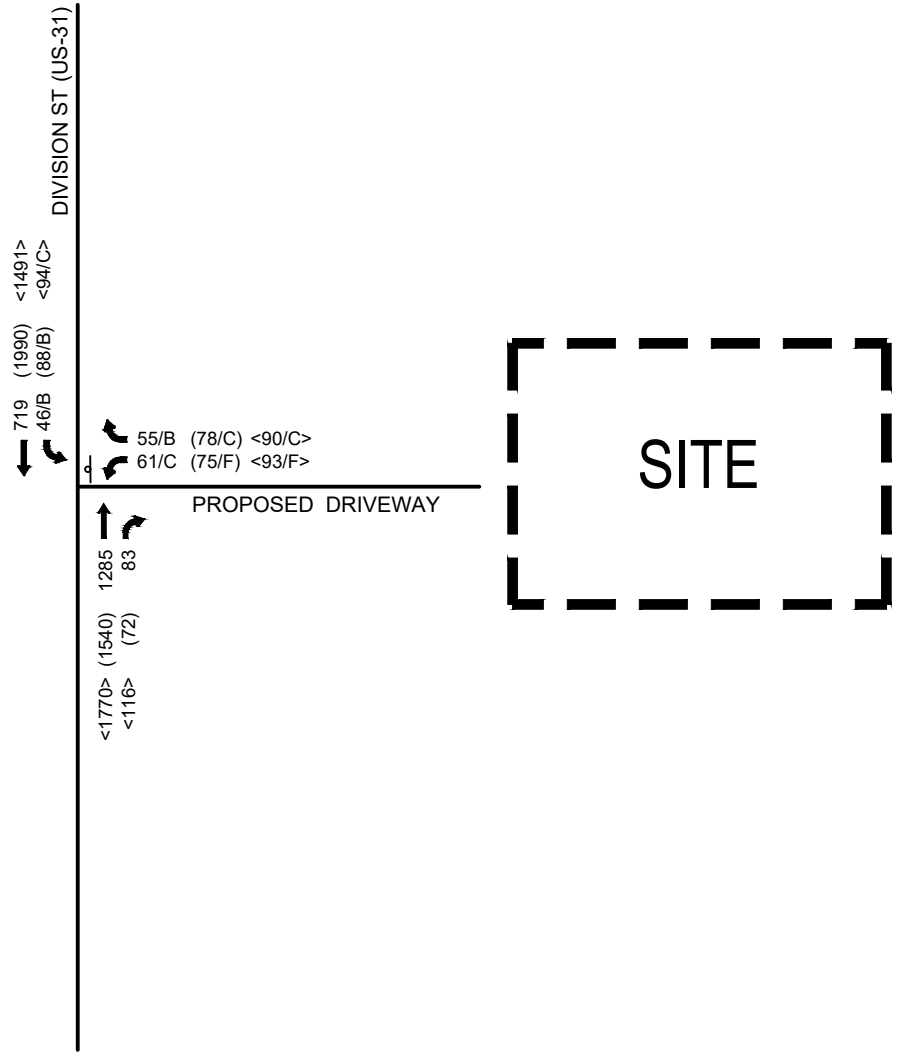
Intersection level-of-service calculations were completed to evaluate the future (2032) peak hour conditions at the proposed driveway. Results of the analyses are shown in Table 4 and in Figure 4. As shown, all movements are anticipated to operate at LoS “D” or better during the weekday morning, weekday afternoon, and Saturday midday peak hours except for the same westbound left-turn movement as the future (2022) conditions. Copies of the *Synchro*[®] analyses for the future (2032) conditions are included in the appendix.

Table 4. Future (2032) Levels-of-Service and Delay

Intersection/ Movement	Future (2022) Conditions						Future (2032) Conditions					
	AM		PM		SAT		AM		PM		SAT	
	LoS	Delay	LoS	Delay	LoS	Delay	LoS	Delay	LoS	Delay	LoS	Delay
US-31/Proposed Driveway												
Overall	A	1.7	A	2.3	A	4.2	A	1.7	A	2.5	A	4.9
WBL	C	22.4	E	47.8	F	84.1	C	24.4	F	57.8	F	111.9
WBR	B	12.4	B	14.3	C	17.1	B	12.8	C	15	C	18.4
NBT/R	A	0	A	0	A	0	A	0	A	0	A	0
SBL	B	10.3	B	11.9	C	14.3	B	10.7	B	12.6	C	15.4
SBT	A	0	A	0	A	0	A	0	A	0	A	0

Source: Progressive AE, March 2021

The results of the future (2032) capacity analysis show the proposed driveway is anticipated to operate in largely the same manner ten years after the completion of the Chick-fil-A[®] site compared to the future (2022) conditions. The westbound left-turn movement from the access drive is anticipated to decrease from LoS “E” in future (2022) conditions to LoS “F” in future (2032) conditions during the afternoon peak hour; however, it is projected to continue to operate at the same LoS “F” under the future (2032) conditions during the Saturday peak hour. This would be considered acceptable based on the same reasons outlined in the future (2022) conditions analyses.



TRAFFIC IMPACT STUDY CHICK-FIL-A #4815 US HIGHWAY 31 TRAVERSE CITY, MICHIGAN

LEGEND

- XX (XX) <XX> = AM (PM) <SAT>
- A = LEVEL-OF-SERVICE
- Ⓢ = SIGNALIZED INTERSECTION
- P = STOP-CONTROLLED

FUTURE (2032) PEAK-HOUR VOLUMES
+ LEVELS-OF-SERVICE



FIGURE
4

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

The chapter summarizes the results of the analyses performed as part of the study. Recommendations to improve the surrounding roadway network are also presented.

Conclusions

Based on the analyses performed as part of this study, the development of the Chick-fil-A® site will have minor impacts to the surrounding roadway network. The findings of this study are as follows:

Future (2022) Conditions

The proposed Chick-fil-A® and 100-bed extended stay hotel project site is anticipated to generate approximately 245 (129 entering, 116 exiting) trips during the weekday morning peak hour, 313 (160 entering, 153 exiting) trips during the weekday afternoon peak hour, and 393 (210 entering, 183 exiting) during the Saturday midday peak hour. Approximately 50 percent of these trips would be classified as pass-by trips.

The stop-controlled westbound left-turn movement at the US-31/access driveway intersection is anticipated to operate at LoS "E" during the weekday afternoon with an anticipated 95th percentile queue of approximately 2 vehicles. The Saturday midday peak hour is anticipated to operate at LoS "F" with an anticipated 95th percentile queue of approximately 4 vehicles. These levels-of-service would be considered acceptable as the 95th percentile queue is anticipated to be short. In addition, these level-of-service values can be expected along a high-volume major corridor during the peak hours, particularly for left-turn movements. Site traffic would also have the option of turning right to exit the site during these times.

While not considered as part of this analysis, the site owner is working with adjacent property owners to secure cross-access between this development, the Lowes site to the north, and the Grand Traverse Mall site to the southeast. This cross-access would provide customers with access to the existing traffic signal at the Lowes Driveway and the roadway network surrounding the mall site.

Future (2032) Conditions

The results of the future (2032) capacity analysis show the proposed driveway is anticipated to operate in largely the same manner ten years after the completion of the Chick-fil-A® site compared to the future (2022) conditions. The westbound left-turn movement from the access drive is anticipated to decrease from LoS "E" in future (2022) conditions to LoS "F" in future (2032) conditions during the afternoon peak hour; however, it is projected to continue to operate at the same LoS "F" under the future (2032) conditions during the Saturday peak hour. This would be considered acceptable based on the same reasons outlined in the future (2022) conditions analyses.

Recommendations

Based on the results of the analyses performed, no improvements to the surrounding roadway network would be necessary to mitigate the impacts of future traffic anticipated to be generated by the proposed site.

Technical Appendix

Chick-fil-A (Traverse City) TIS

- **Level of Service Definitions**
- **Glossary**
- **Site Plan**
- **South Bend CFA Driveway Counts**
- **Traffic Count Data**
- **Synchro Analyses Results**

Level of Service Definitions

Signalized Intersections

- Level of Service A:** Describes operations with very low average stopped delay, i.e., less than 10.0 seconds per vehicle. This occurs when progression is extremely favorable, and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.
- Level of Service B:** Describes operations with an average stopped delay in the range of 10.0 to 20.0 seconds per vehicle. This generally occurs with good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.
- Level of Service C:** Describes operations with an average stopped delay in the range of 20.1 to 35.0 seconds per vehicle. These higher delays may result from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear in this level. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.
- Level of Service D:** Describes operations with an average stopped delay in the range of 35.1 to 55.0 seconds per vehicle. At Level of Service D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high v/c (volume/capacity) ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
- Level of Service E:** Describes operations with an average stopped delay in the range of 55.1 to 80.0 seconds per vehicle. This is considered to be the limit of acceptable delay in many cases. These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures are a frequent occurrence.
- Level of Service F:** Describes operations with an average stopped delay in excess of 80.0 seconds per vehicle. This is considered to be unacceptable to most drivers. This condition often occurs with over-saturation, i.e., when arrival flow rates exceed the capacity of the intersection. It may also occur at high v/c ratios with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.

Level of Service Definitions

Unsignalized Intersections

Level of Service A:	Average delay per vehicles for impeded movements is less than 10 seconds. There is little or no delay with typically low side street and/or main street traffic.
Level of Service B:	Average stopped delays from 10.1 seconds to 15.0 seconds. Short delays, many acceptable gaps in main street traffic stream.
Level of Service C:	Average delay per vehicle ranges from 15.1 to 25.0 seconds. Average traffic delays with frequent gaps in main street traffic.
Level of Service D:	Average delays from 25.1 to 35.0 seconds for impeded movements. Long traffic delays for impeded movements due in part to a limited number of acceptable gaps.
Level of Service E:	Average delays in the 35.1 to 50.0 second range. May experience very long delays for impeded movements with a very small number of acceptable gaps in the traffic stream.
Level of Service F:	Average vehicle delays of over 50.0 seconds. Extreme traffic delays with virtually no acceptable gaps in main street traffic.

Glossary

Approach: A set of lanes accommodating all left-turn, through, and right-turn movements arriving at an intersection from a given direction.

Arterial: Signalized streets that serve primarily through traffic and provide access to abutting properties as a secondary function.

Average Stopped Delay: The total time vehicles are stopped in an intersection approach or lane group during a specified time interval divided by the volume departing from the approach or lane group during the same time period, in seconds per vehicle.

Background Traffic: Traffic volumes that will be on the roadway network without the presence of the proposed development.

Bypass Lane: A one-lane widening on a two-lane roadway that allows through traffic to pass by waiting left-turn traffic.

Capacity: The maximum rate of flow at which persons or vehicles can be reasonably expected to traverse a point or uniform segment of a lane or roadway during a specified time period under prevailing roadway, traffic, and control conditions; usually expressed as vehicles per hour or persons per hour.

Conflicting Traffic Volume: The volume of traffic which conflicts with a specific movement at an intersection.

Corridor: A lineal study area aligned with a roadway facility in which traffic, land use, right-of-way, environmental, and other factors are evaluated to determine future transportation facility needs.

Cycle: Any complete sequence of traffic signal indications.

Cycle Length: The total time for a traffic signal to complete one cycle.

Design Hour Volume: The traffic volume for the design hour, usually a forecast of the relevant peak hour volume, in vehicles per hour.

Diverted Linked Trips: Trips from the traffic volume on roadways within the vicinity of the generator but which requires a diversion from that roadway to another roadway to gain access to the site.

Driveway Offset: Distance between driveways on opposite sides of a roadway, measured parallel to roadway.

Freeway: A multi-lane divided highway having a minimum of two lanes for exclusive use of traffic in each direction and full control of access and egress.

Gaps (Critical Gap): The median time headway between vehicles in a major traffic stream which will permit side-street vehicles to cross through or merge with the major traffic stream.

Green Time: The actual length of the "green" indication for a given movement at a signalized intersection.

Level of Service: A qualitative measure describing operational conditions within a traffic stream; generally described in terms of such factors as speed and travel time, delay, freedom to maneuver, traffic interruptions, comfort and convenience, and safety.

Operational Analysis: A use of capacity analysis to determine the prevailing level of service on an existing or projected facility, with known or projected traffic, roadway, and control conditions. This analysis can involve a particular location, such as an intersection or a corridor.

Pass-by Trips: Trips made as intermediate stops on the way from an origin to a primary trip destination.

Peak Hour (AM): The one hour period in the morning representing the highest hourly volume of traffic flow on the adjacent public street system.

Peak Hour (PM): The one hour period in the afternoon or evening representing the highest hourly volume of traffic flow on the adjacent public street system.

Peak Hour Factor: The hourly volume during the maximum volume hour of the day divided by four times the peak 15-minute flow within the peak hour; a measure of traffic demand fluctuation within the peak hour.

Phase: The part of the signal cycle allocated to any combination of traffic movements receiving the right-of-way simultaneously during one or more intervals.

Roadway Conditions: Geometric characteristics of a street or highway, including the type of facility, number and width of lanes (by direction), shoulder widths and lateral clearances, design speed, etc.

Service Drive: A roadway (usually private) that provides internal access to two or more uses.

Site Traffic: Existing or projected vehicular traffic generated by the development.

Study Area: The geographic area containing site access points and critical intersections (and connecting highway segments) which are impacted by the site-traffic generated by the development, and should be evaluated.

System Improvements: Added lanes, signal improvements, and other roadway improvements not considered site-related improvements.

Traffic Impact: The adverse impact on intersection Level of Service and/or street and highway safety and operations as determined by the criteria and procedures set forth in this handbook.

Trip (Directional Trip): A single or one-direction vehicle movement with either the origin or the destination (exiting or entering) inside a study site.

Trip Distribution: The distribution or assignment of site traffic into site driveways and study area roadways/intersections based upon expected direction of approach and departure.

Unsignalized Intersection: Any intersection not controlled by traffic signals.

Volume: The number of persons or vehicles passing a point on a lane or roadway during some time interval, such as one hour or during an average day.

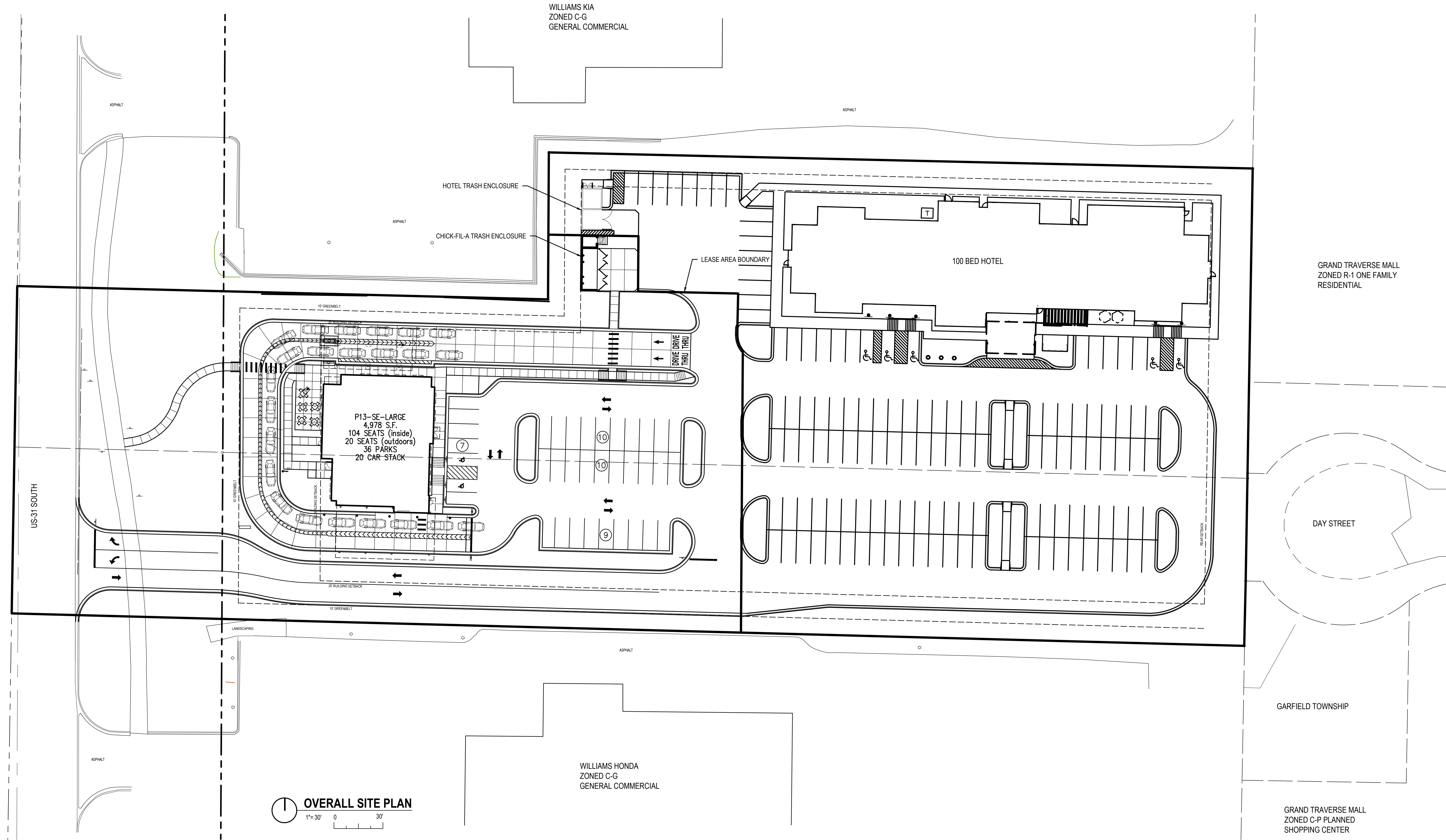
Volume-to-Capacity Ratio (V/C): The ratio of demand flow rate to capacity for a traffic facility.

Site Plan

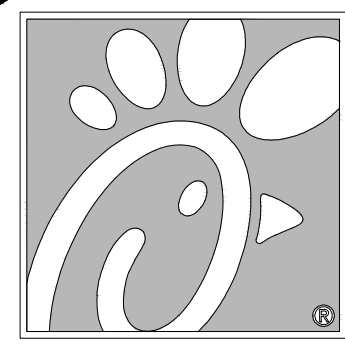
RETAIL COMPLEX
ZONED C-G
GENERAL COMMERCIAL

RED LOBSTER
ZONED C-G
GENERAL COMMERCIAL

DISCOUNT TIRE
ZONED C-G
GENERAL COMMERCIAL



OVERALL SITE PLAN
1" = 30'



Chick-fil-A

5200 Buffington Rd.
Atlanta Georgia,
30349-2998

Revisions:

Mark	Date	By
△		

Mark	Date	By
△		

Mark	Date	By
△		

Seal

progressive | ae

STORE #4815
TRAVERSE CITY FSU

2700 US-31 SOUTH
TRAVERSE CITY, MI

SHEET TITLE
PRELIMINARY
SITE PLAN

Job No. : 77020027
Store : 4815
Date : 2/3/21
Drawn By : DCM
Checked By : CCS

Sheet

C-2.1

South Bend CFA Driveway Counts

AECOM

3950 Sparks Drive SE
Grand Rapids, MI, 49546
(616) 574-8500

File Name : Thur S Bend Chick-Fil-A Dvwy
Site Code : 00000000
Start Date : 12/14/2016
Page No : 1

Groups Printed- Cars - Trucks

Start Time	Dvwy OUT Westbound		Dvwy IN Eastbound		Int. Total
	Thru	App. Total	Thru	App. Total	
07:00 AM	9	9	9	9	18
07:15 AM	6	6	12	12	18
07:30 AM	10	10	10	10	20
07:45 AM	13	13	11	11	24
Total	38	38	42	42	80
08:00 AM	10	10	14	14	24
08:15 AM	9	9	10	10	19
08:30 AM	15	15	10	10	25
08:45 AM	17	17	14	14	31
Total	51	51	48	48	99
04:00 PM	20	20	24	24	44
04:15 PM	24	24	26	26	50
04:30 PM	25	25	25	25	50
04:45 PM	25	25	31	31	56
Total	94	94	106	106	200
05:00 PM	30	30	33	33	63
05:15 PM	23	23	32	32	55
05:30 PM	35	35	36	36	71
05:45 PM	41	41	34	34	75
Total	129	129	135	135	264
Grand Total	312	312	331	331	643
Apprch %	100		100		
Total %	48.5	48.5	51.5	51.5	
Cars	312	312	331	331	643
% Cars	100	100	100	100	100
Trucks	0	0	0	0	0
% Trucks	0	0	0	0	0

AECOM

3950 Sparks Drive SE
Grand Rapids, MI, 49546
(616) 574-8500

File Name : Thur S Bend Chick-Fil-A Dvwy
Site Code : 00000000
Start Date : 12/14/2016
Page No : 2

Start Time	Dvwy OUT Westbound		Dvwy IN Eastbound		Int. Total
	Thru	App. Total	Thru	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	10	10	14	14	24
08:15 AM	9	9	10	10	19
08:30 AM	15	15	10	10	25
08:45 AM	17	17	14	14	31
Total Volume	51	51	48	48	99
% App. Total	100		100		
PHF	.750	.750	.857	.857	.798
Cars	51	51	48	48	99
% Cars	100	100	100	100	100
Trucks	0	0	0	0	0
% Trucks	0	0	0	0	0
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1					
Peak Hour for Entire Intersection Begins at 05:00 PM					
05:00 PM	30	30	33	33	63
05:15 PM	23	23	32	32	55
05:30 PM	35	35	36	36	71
05:45 PM	41	41	34	34	75
Total Volume	129	129	135	135	264
% App. Total	100		100		
PHF	.787	.787	.938	.938	.880
Cars	129	129	135	135	264
% Cars	100	100	100	100	100
Trucks	0	0	0	0	0
% Trucks	0	0	0	0	0

AECOM

3950 Sparks Drive SE
Grand Rapids, MI, 49546
(616) 574-8500

File Name : Sat S Bend Chick-Fil-A Dvwy
Site Code : 00000000
Start Date : 12/17/2016
Page No : 1

Groups Printed- Cars - Trucks

Start Time	Dvwy OUT Westbound		Dvwy IN Eastbound		Int. Total
	Thru	App. Total	Thru	App. Total	
11:00 AM	22	22	20	20	42
11:15 AM	20	20	30	30	50
11:30 AM	30	30	37	37	67
11:45 AM	30	30	27	27	57
Total	102	102	114	114	216
12:00 PM	38	38	42	42	80
12:15 PM	31	31	45	45	76
12:30 PM	47	47	42	42	89
12:45 PM	35	35	40	40	75
Total	151	151	169	169	320
01:00 PM	31	31	40	40	71
01:15 PM	54	54	40	40	94
01:30 PM	39	39	29	29	68
01:45 PM	40	40	43	43	83
Total	164	164	152	152	316
Grand Total	417	417	435	435	852
Apprch %	100		100		
Total %	48.9	48.9	51.1	51.1	
Cars	417	417	435	435	852
% Cars	100	100	100	100	100
Trucks	0	0	0	0	0
% Trucks	0	0	0	0	0

Start Time	Dvwy OUT Westbound		Dvwy IN Eastbound		Int. Total
	Thru	App. Total	Thru	App. Total	
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1					
Peak Hour for Entire Intersection Begins at 12:00 PM					
12:00 PM	38	38	42	42	80
12:15 PM	31	31	45	45	76
12:30 PM	47	47	42	42	89
12:45 PM	35	35	40	40	75
Total Volume	151	151	169	169	320
% App. Total	100		100		
PHF	.803	.803	.939	.939	.899
Cars	151	151	169	169	320
% Cars	100	100	100	100	100
Trucks	0	0	0	0	0
% Trucks	0	0	0	0	0



Chick-fil-A
Fast-food chain for
chicken sandwiches

Dollar General

S Michigan St

S Michigan St

S Michigan St

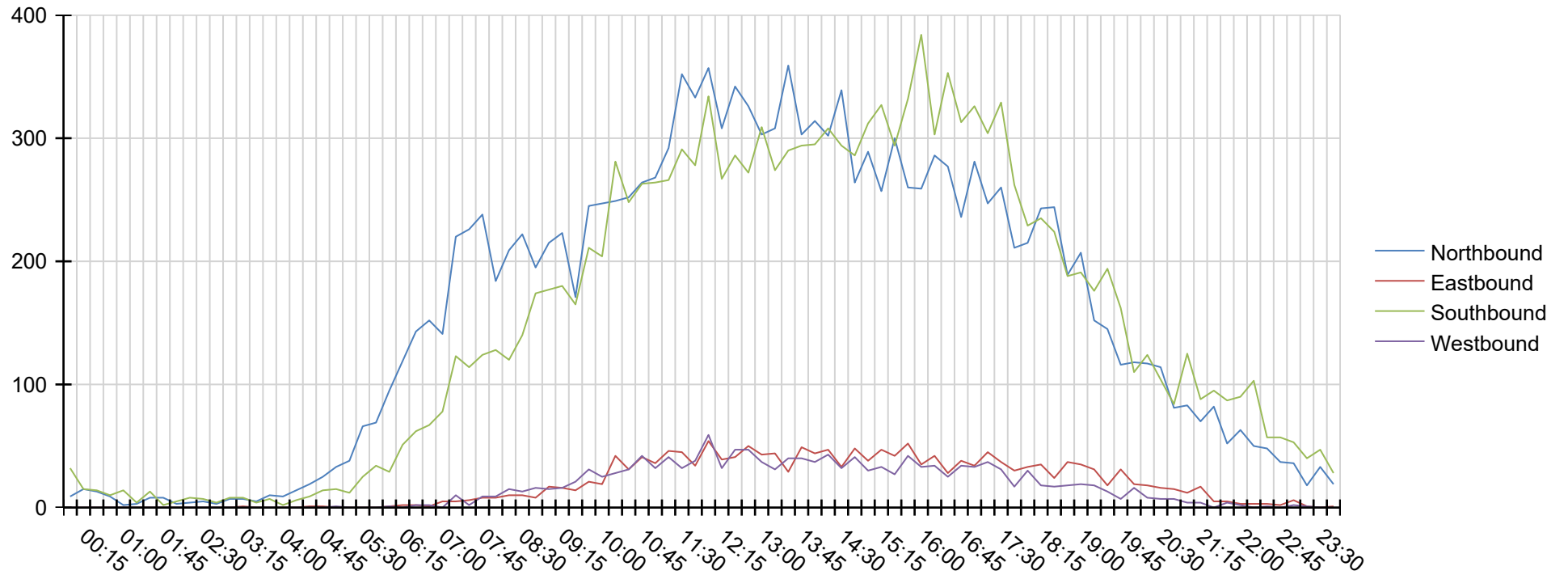
Michigan St

Traffic Count Data

Intersection US31,M37 & Market Place

Date 7/9/2020

	Right	Through	Left	UTurn	Total
Northbound	736	13306	1116	1	15159
Eastbound	107	597	1085	1	1790
Southbound	797	13167	583	2	14549
Westbound	651	119	720		1490
Total	2291	27189	3504	4	32988





Turning Movement Counts

Intersection US31,M37 & Market Place

Date 7/9/2020

	Northbound				Eastbound				Southbound				Westbound		
	R	T	L	U	R	T	L	U	R	T	L	U	R	T	L
00:00		9								32					
00:15		15								15					
00:30		13								14					
00:45		9								10					
01:00		2								14					
01:15		3								4					
01:30		8								13					
01:45		8								2					
02:00		3								5					
02:15		4								8					
02:30		5								7					
02:45		3								4					
03:00		7								8					
03:15		7				1			1	6	1				
03:30	1	3		1						3	1				
03:45	1	9								7					
04:00		9								2					
04:15		14								6					
04:30		18	1				1			9					
04:45	2	23				1			1	12	1				
05:00	4	29							1	13	1				1
05:15	8	29	1							9	3				
05:30	4	59	3						1	23	1				
05:45	2	64	3							32	2				
06:00		94	1				1		1	27	1			1	
06:15		118	1			1	1		1	49	1				



Turning Movement Counts

Intersection US31,M37 & Market Place

Date 7/9/2020

	Northbound				Eastbound				Southbound				Westbound		
	R	T	L	U	R	T	L	U	R	T	L	U	R	T	L
06:30	2	139	2			2			2	58	2				2
06:45	3	143	6				1		2	61	4				2
07:00	4	133	4		1	1	3		5	68	5				
07:15	3	216	1		2	2	1		5	114	4		4	2	4
07:30	5	216	5			1	5		5	105	4		1	1	
07:45	4	224	10			1	7		5	114	5		5		4
08:00	5	175	4		1	4	3		1	117	10		4	1	4
08:15	4	200	5			5	5		3	111	6		4	2	9
08:30	9	201	12			4	6		10	123	7		3		10
08:45	7	178	10			5	3		6	156	12		8	3	5
09:00	11	190	14			6	11		13	156	8		4		11
09:15	9	199	15			11	5		8	159	13		8		8
09:30	10	150	11			9	5		10	140	15		10		11
09:45	18	205	22		1	9	11		14	185	12		13	1	17
10:00	9	216	22			7	12		14	179	11		11	3	11
10:15	14	212	23		1	11	30		21	240	20		12	2	14
10:30	21	206	25		4	12	15		17	221	10		15	2	14
10:45	13	232	19		5	14	22		19	225	19		14	4	24
11:00	23	225	20		4	7	25		14	240	10		13	1	18
11:15	14	248	30		3	11	32		14	243	9		18	5	18
11:30	28	299	25			16	29		19	259	13		14	5	13
11:45	29	267	37			11	23		20	238	20		20	6	12
12:00	23	309	25		2	16	36		24	291	19		28	6	25
12:15	15	261	32			7	32		18	236	13		13	4	15
12:30	15	302	25		2	13	26		17	255	14		24	3	20
12:45	17	279	30		4	15	31		12	243	17		19	4	24



Turning Movement Counts

Intersection US31,M37 & Market Place

Date 7/9/2020

	Northbound				Eastbound				Southbound				Westbound		
	R	T	L	U	R	T	L	U	R	T	L	U	R	T	L
13:00	18	257	28		1	16	26		18	274	17		21	3	13
13:15	16	269	23		1	13	30		15	243	16		15	5	11
13:30	27	299	33			11	18		13	265	12		19	3	18
13:45	21	263	19		5	13	31		20	260	14		15		25
14:00	19	272	23		5	10	29		19	266	10		17		20
14:15	17	255	30		2	12	33		18	279	11		15	2	26
14:30	16	299	24		4	13	16		17	264	13		19	1	12
14:45	14	233	17		1	12	35		26	256	4		16	2	23
15:00	19	246	24		3	7	28		17	282	13		11	4	15
15:15	20	210	27		3	16	28		24	285	18		12	5	16
15:30	14	262	24		2	15	25		18	263	13		15	1	11
15:45	13	226	21		2	15	35		21	300	11		16	6	20
16:00	7	225	27		3	11	21		19	353	11	1	11	3	19
16:15	21	236	29		2	13	27		21	272	10		16	5	13
16:30	16	231	30		3	4	21		16	328	9		10	3	12
16:45	8	206	22		2	18	18		22	279	12		16		18
17:00	17	240	24		1	16	17		15	298	13		11	5	17
17:15	15	209	23		1	19	25		14	282	8		20	2	15
17:30	18	214	28		3	9	25		19	303	7		9	2	20
17:45	11	180	20		3	8	19		12	243	7		7		10
18:00	8	190	17		2	11	20		17	208	4		15	3	12
18:15	9	213	21		1	18	16		21	209	5		11	1	6
18:30	11	207	26		1	8	15		14	204	6		12	2	3
18:45	4	169	16		2	14	21		15	165	8		9	2	7
19:00	6	183	18			20	15		16	165	10		7	2	10
19:15	6	126	20		4	9	18		7	160	9		7		11



Turning Movement Counts

Intersection US31,M37 & Market Place

Date 7/9/2020

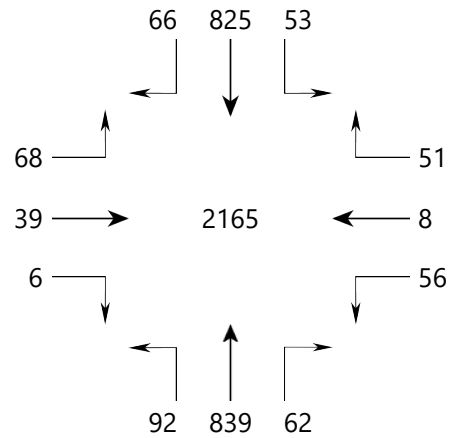
	Northbound				Eastbound				Southbound				Westbound		
	R	T	L	U	R	T	L	U	R	T	L	U	R	T	L
19:30	6	125	14		1	4	13		5	185	4		5		8
19:45	7	98	11		1	5	25		6	153	3		4		3
20:00	3	111	4		2	10	7		3	103	4		7	1	8
20:15	6	102	9		2	5	11		3	118	3		1	1	6
20:30	2	108	4			7	9		1	100	3		2		5
20:45		78	3		1	5	9		7	77			3		4
21:00	1	80	2		2	5	5		3	121	1		2		2
21:15	1	67	2		3	9	5		2	86			3		1
21:30		78	4			2	3		2	93					
21:45	1	51			2		3		1	85		1	2		2
22:00		62	1			3			3	87			1		1
22:15		49	1			2	1			103					
22:30		46	2			2		1		57			1		
22:45		37			1	1			1	56					
23:00	1	35			2	3	1			53			1		1
23:15		18				1			2	38			1		
23:30		33								47					
23:45		18	1		1					28					
Total	736	13306	1116	1	107	597	1085	1	797	13167	583	2	651	119	720

Intersection US31,M37 & Market Place

Date 7/9/2020

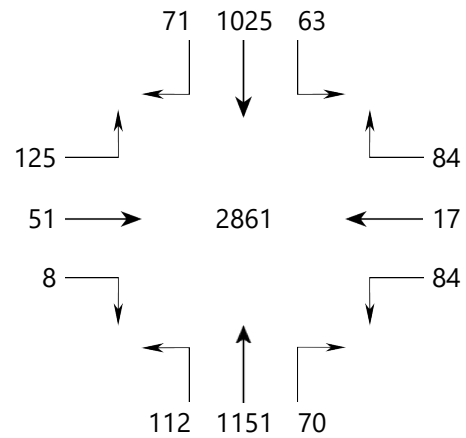
AM PEAK HOUR VOLUME (0:00-10:45)

FROM 09:45 TO 10:45



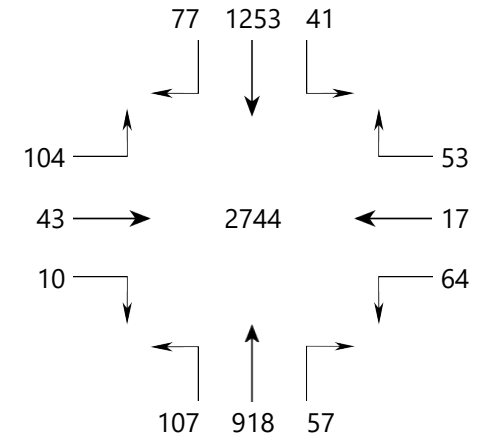
MID-DAY PEAK HOUR VOLUME (11:00-14:00)

FROM 12:00 TO 13:00



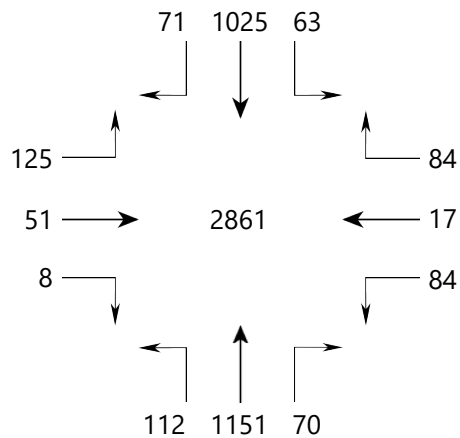
PM PEAK HOUR VOLUME (14:15-23:45)

FROM 15:45 TO 16:45



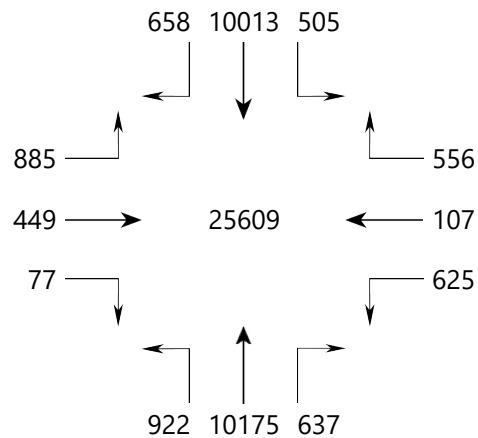
OVERALL PEAK HOUR VOLUME

FROM 12:00 TO 13:00



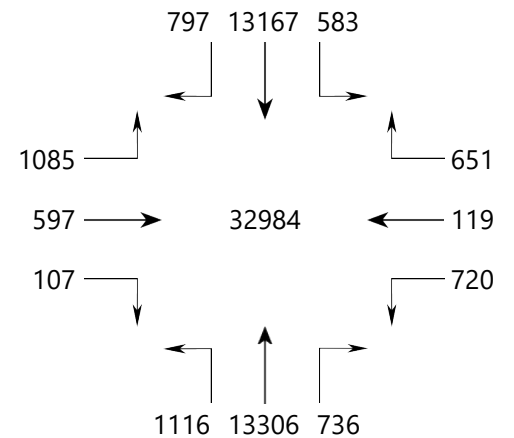
DAYTIME TOTAL VOLUME

FROM 07:00 TO 18:00



SELECTED TIME VOLUME

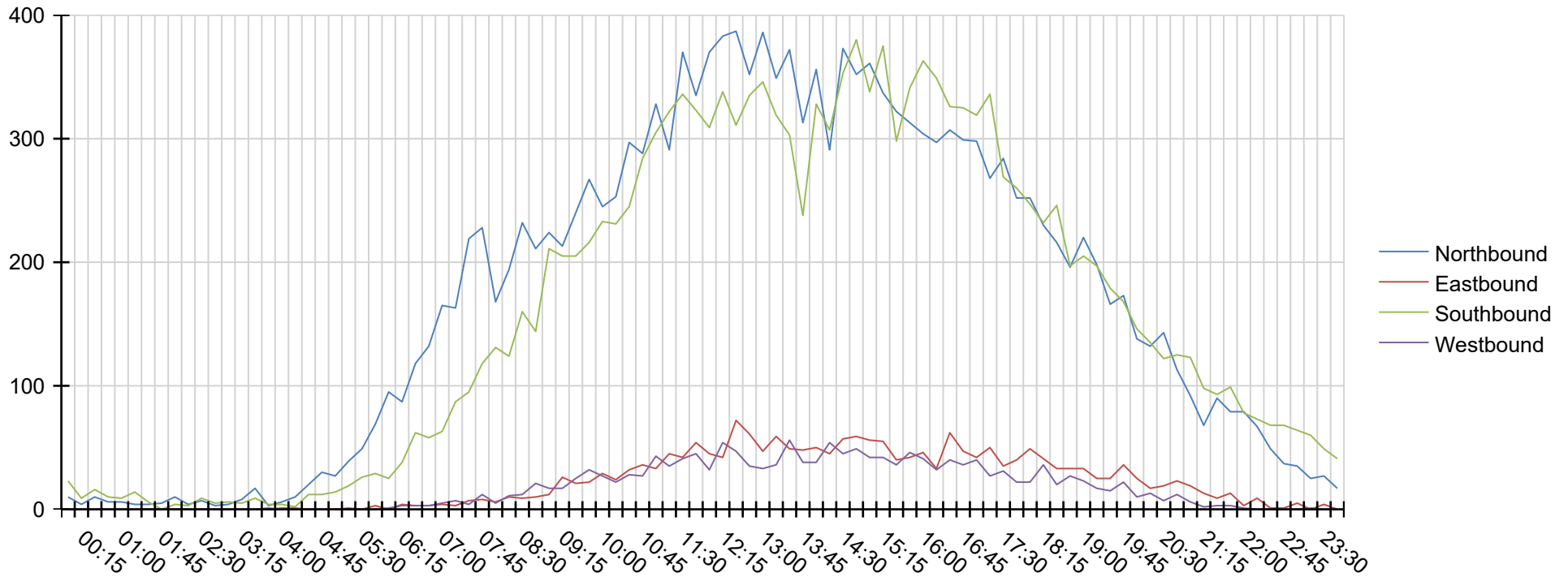
FROM 00:00 TO 23:59



Intersection US31,M37 & Market Place

Date 7/10/2020

	Right	Through	Left	UTurn	Total
Northbound	780	14425	1281		16486
Eastbound	170	720	1177		2067
Southbound	869	13793	687	1	15350
Westbound	725	154	760		1639
Total	2544	29092	3905	1	35542





Turning Movement Counts

Intersection US31,M37 & Market Place

Date 7/10/2020

	Northbound			Eastbound			Southbound				Westbound		
	R	T	L	R	T	L	R	T	L	U	R	T	L
00:00		10							23				
00:15		4							9				
00:30		10							16				
00:45		5	1						10				
01:00		6							9				
01:15		4							14				
01:30		4							6				
01:45		4	1										
02:00		9	1						4				
02:15		4							3				
02:30		7							9				
02:45		3							5				
03:00		4							6				
03:15		7	1						5				
03:30	2	13	2						5	4			
03:45		3							4				1
04:00		6				1			4				
04:15		10				1			2				
04:30		20						1	11				
04:45	2	27	1						11	1			
05:00	4	23						2	11	1			
05:15	7	32				1			17	2			
05:30	4	41	4					4	21	1			
05:45		63	6	1	2			3	25	1			
06:00	1	93	1					1	22	2			1
06:15	1	85	1	3	1			1	37		1		2



Turning Movement Counts

Intersection US31,M37 & Market Place

Date 7/10/2020

	Northbound			Eastbound			Southbound				Westbound		
	R	T	L	R	T	L	R	T	L	U	R	T	L
06:30	5	112	1	1	1	1		59	3		2		1
06:45	3	120	9		1	2	2	51	5		1	1	1
07:00	7	156	2	2	1	1	3	57	3		4		1
07:15	2	160	1	1		2	3	81	3		2	1	4
07:30	6	201	12	1	1	5	4	89	2		1		3
07:45	7	213	8	3	3	2	4	109	5		7	1	4
08:00	5	160	3	1	1	4	5	115	11		4		1
08:15	6	183	5	3	2	5	3	115	6		6	1	4
08:30	9	219	4	1	3	5	13	136	11		10		2
08:45	9	191	11	1	5	4	10	128	6		7	2	12
09:00	9	208	7		3	9	14	176	21		9		8
09:15	12	188	13	3	9	14	18	182	5		13	1	3
09:30	10	213	17	2	10	9	9	182	14		12	2	11
09:45	12	230	25	2	10	10	13	193	10		18	1	13
10:00	13	225	7	1	12	16	12	205	16		10	5	12
10:15	11	226	16	2	7	15	20	197	14		9	2	11
10:30	11	267	19	1	11	20	12	218	15		10	2	16
10:45	14	250	24	1	14	21	22	247	15		13	1	13
11:00	30	270	28		14	19	19	270	16		19	4	20
11:15	21	240	30	1	18	26	19	286	17		14	6	15
11:30	22	315	33		15	27	24	291	21		18	2	21
11:45	19	274	42	6	15	33	25	282	16		22	5	18
12:00	22	309	39	6	13	26	23	271	15		10	4	18
12:15	20	326	37	3	14	25	15	313	10		22	8	24
12:30	11	331	45	3	19	50	30	262	19		21	8	18
12:45	13	304	35	5	14	42	21	288	26		17	4	14



Turning Movement Counts

Intersection US31,M37 & Market Place

Date 7/10/2020

	Northbound			Eastbound			Southbound				Westbound		
	R	T	L	R	T	L	R	T	L	U	R	T	L
13:00	16	332	38	5	12	30	21	307	18		15	4	14
13:15	23	306	20	6	19	34	16	284	19		16	4	16
13:30	20	311	41	4	14	31	17	266	20		28	2	26
13:45	16	271	26	6	13	29	11	215	12		16	5	17
14:00	27	295	34	1	22	27	15	293	20		20	3	15
14:15	12	256	23	1	12	32	19	277	11		20	5	29
14:30	18	312	43	3	24	30	31	302	20		27	2	16
14:45	29	296	27	4	16	39	26	334	20		21	1	27
15:00	18	317	26	2	20	34	20	309	9		14	4	24
15:15	19	287	31	2	22	31	21	334	20		17	5	20
15:30	15	270	37	4	15	21	17	268	12	1	13	5	18
15:45	18	269	26	4	15	23	21	302	18		21	3	22
16:00	17	255	32	6	18	22	14	336	13		19	3	19
16:15	20	249	28	2	10	21	31	304	14		9	3	20
16:30	13	263	31	5	19	38	19	294	13		18	2	20
16:45	16	252	31	4	18	25	18	286	21		13	3	20
17:00	13	265	20	3	20	19	21	290	8		16	6	18
17:15	15	219	34	3	16	31	10	309	17		9		18
17:30	9	247	28	3	13	19	19	242	8		19	3	9
17:45	12	218	22	2	12	26	22	230	8		10	1	11
18:00	17	205	30	6	20	23	17	222	8		12	2	8
18:15	11	203	16	1	18	22	11	214	7		18	4	14
18:30	13	183	20	1	15	17	13	231	2		9		11
18:45	4	174	18	2	15	16	10	178	9		13	1	13
19:00	7	193	20	2	18	13	14	181	10		7	3	13
19:15	9	174	15	1	11	13	10	178	9		7	2	8



Turning Movement Counts

Intersection US31,M37 & Market Place

Date 7/10/2020

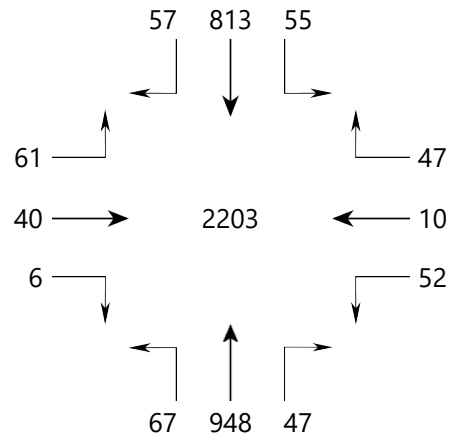
	Northbound			Eastbound			Southbound				Westbound		
	R	T	L	R	T	L	R	T	L	U	R	T	L
19:30	10	142	14	2	9	14	6	167	6		9	2	4
19:45	9	150	14	5	9	22	10	155	3		9	5	8
20:00	9	119	10	5	9	11	4	137	5		2		8
20:15	9	111	12	1	6	10	4	129	2		5	2	6
20:30	5	134	4	6	5	8	5	113	4			2	5
20:45		104	9	2	9	12	3	120	2		1	3	8
21:00		89	3	2	3	14	8	114	1		3	1	2
21:15		68		1	4	8	5	93			1	1	
21:30		88	2	3	2	4	1	91	1		2		1
21:45	1	76	2	2	7	4	2	97			2	1	
22:00		79			2	1		78			1		
22:15		66	1	1	4	4		73					
22:30		49				1		68					
22:45		37			1			68					
23:00		34	1	1	2	2	1	63					
23:15		25					1	59			1		
23:30		27		2	1	1		49					
23:45		17						41					
Total	780	14425	1281	170	720	1177	869	13793	687	1	725	154	760

Intersection US31,M37 & Market Place

Date 7/10/2020

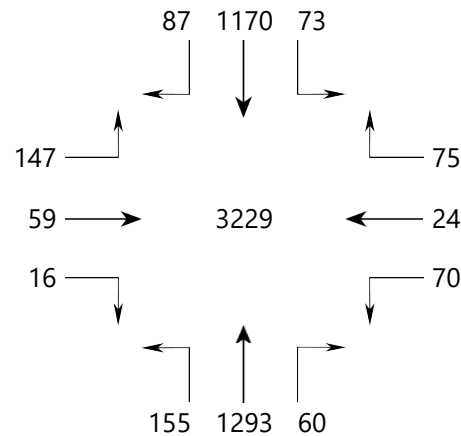
AM PEAK HOUR VOLUME (0:00-10:45)

FROM 09:45 TO 10:45



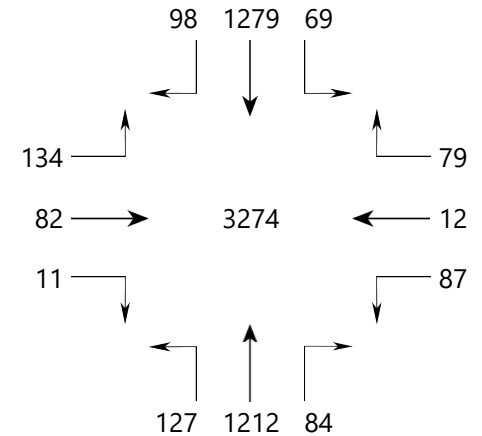
MID-DAY PEAK HOUR VOLUME (11:00-14:00)

FROM 12:15 TO 13:15



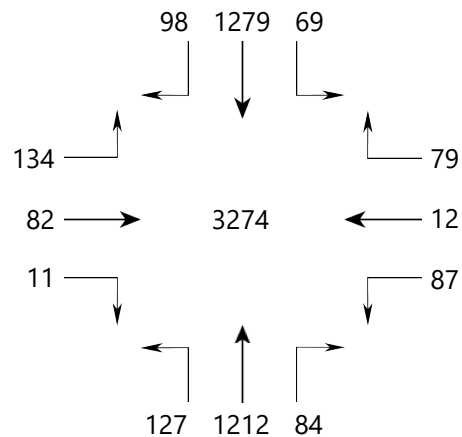
PM PEAK HOUR VOLUME (14:15-23:45)

FROM 14:30 TO 15:30



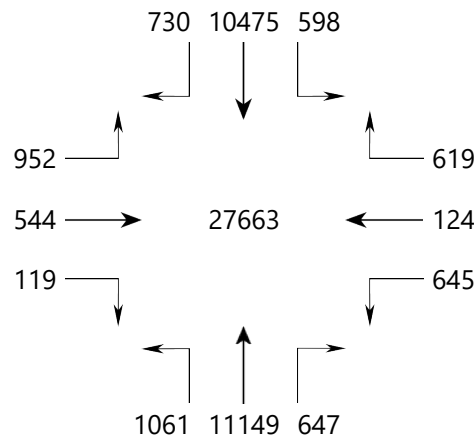
OVERALL PEAK HOUR VOLUME

FROM 14:30 TO 15:30



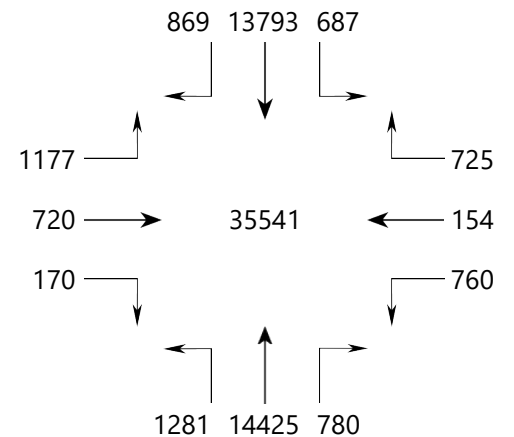
DAYTIME TOTAL VOLUME

FROM 07:00 TO 18:00



SELECTED TIME VOLUME

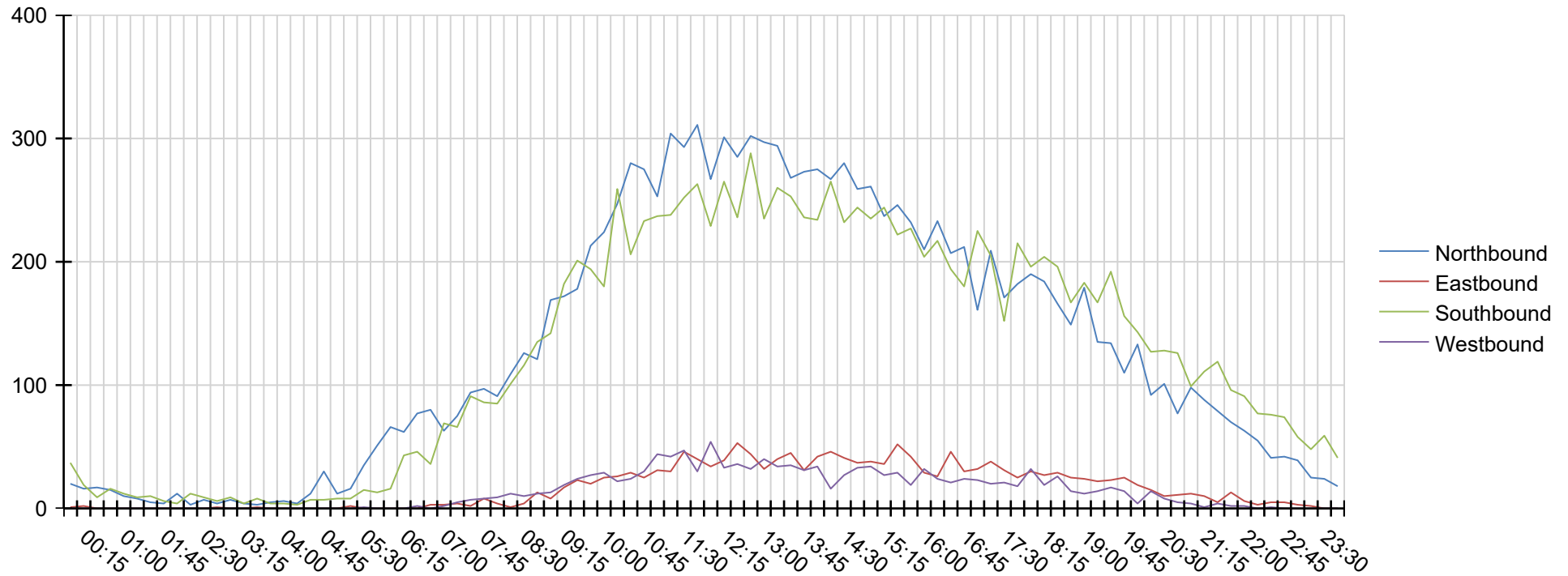
FROM 00:00 TO 23:59



Intersection US31,M37 & Market Place

Date 7/11/2020

	Right	Through	Left	UTurn	Total
Northbound	661	10868	977	1	12507
Eastbound	115	617	870		1602
Southbound	660	10916	570	1	12147
Westbound	456	133	720		1309
Total	1892	22534	3137	2	27565





Turning Movement Counts

Intersection US31,M37 & Market Place

Date 7/11/2020

	Northbound				Eastbound			Southbound				Westbound		
	R	T	L	U	R	T	L	R	T	L	U	R	T	L
00:00		20					1	1	36					
00:15		15	1			1	1		19					
00:30		17							9					
00:45		15							16					
01:00		10							12					
01:15		7	1						9					
01:30		4	1						10					
01:45		4							6					
02:00		12							4					
02:15		3							12					
02:30		7							9					
02:45		3	1				1		6					
03:00		7							9					
03:15		4							4					
03:30		3				1		1	7					
03:45		5							4					
04:00		6							4					
04:15		3	1						3					
04:30	1	11							7					
04:45	2	28							7					
05:00	1	11							8					
05:15	1	15					2		7	1				
05:30	2	29	4					1	14					1
05:45	1	48	2					2	8	3				
06:00		66						1	14	1				
06:15		62						2	41					



Turning Movement Counts

Intersection US31,M37 & Market Place

Date 7/11/2020

	Northbound				Eastbound				Southbound				Westbound		
	R	T	L	U	R	T	L	R	T	L	U	R	T	L	
06:30	2	73	2					1	45			2			
06:45		75	5			2	1	4	31	1					
07:00	2	61				1	2	5	60	4		1		1	
07:15	5	67	3			1	3	4	56	6				5	
07:30	6	78	10			2		1	81	9		5		2	
07:45	8	83	6		1	5	2	2	78	6		6		2	
08:00	6	81	4		1	2	1	5	73	7		6		3	
08:15	4	103	2				1	8	84	9		4	1	7	
08:30	8	110	8			1	3	5	104	7		2		8	
08:45	10	103	8			6	7	6	118	11		4	2	6	
09:00	8	150	11			5	3	6	126	10		5	2	6	
09:15	14	152	6		1	7	9	15	152	15		5	1	13	
09:30	15	145	18			16	7	12	175	14		9	3	12	
09:45	11	184	18			8	12	10	174	10		7	3	17	
10:00	10	201	13		1	11	13	9	161	10		9	5	15	
10:15	15	214	18		1	9	16	12	230	17		8	2	12	
10:30	25	234	20	1	1	15	13	10	183	13		7	2	15	
10:45	20	234	21		1	11	13	17	199	17		12	6	12	
11:00	19	212	22		2	10	19	16	204	17		15	7	22	
11:15	19	261	24		1	14	15	14	211	13		8	10	24	
11:30	26	240	27		2	21	23	18	218	16		17	4	26	
11:45	24	258	29		3	18	19	14	238	11		13	2	15	
12:00	8	235	24		2	17	15	21	192	16		20	1	33	
12:15	19	260	22		1	14	24	16	236	13		18	2	13	
12:30	8	244	33		2	21	30	17	204	15		13	3	20	
12:45	22	261	19		4	13	27	17	252	19		12	3	17	



Turning Movement Counts

Intersection US31,M37 & Market Place

Date 7/11/2020

	Northbound				Eastbound				Southbound				Westbound		
	R	T	L	U	R	T	L	U	R	T	L	U	R	T	L
13:00	23	249	25		4	11	17		10	213	12		18	4	18
13:15	18	246	30		2	14	24		20	228	12		7	7	20
13:30	13	233	22			18	27		14	220	19		13	5	17
13:45	14	230	29		2	7	22		19	206	11		11	3	17
14:00	15	233	27		2	14	26		16	209	9		11	3	20
14:15	14	227	26		4	17	25		24	232	9		5	3	8
14:30	21	236	23		3	15	23		5	214	13		11	3	13
14:45	11	227	21		1	11	25		12	217	15		9	1	23
15:00	13	228	20		4	9	25		16	209	10		20	4	10
15:15	8	198	31		5	14	17		6	226	12		7	5	15
15:30	9	214	23		7	12	33		11	202	9		8	1	20
15:45	14	191	27		5	9	28		13	199	15		7	1	11
16:00	14	172	24		4	12	13		13	183	8		8	4	20
16:15	8	203	22		3	9	14		11	195	11		8	4	12
16:30	9	175	23		2	19	25		12	174	8		6	4	11
16:45	12	176	24		2	14	14		7	168	5		5	3	16
17:00	11	139	11		2	12	18		17	197	11		6	1	16
17:15	18	167	24		4	10	24		16	181	8		8	3	9
17:30	10	149	12		3	16	12		11	133	8		7	3	11
17:45	10	159	13		1	8	16		20	182	12	1	6		12
18:00	12	166	12		2	11	17		13	172	11		8	2	22
18:15	8	161	15		2	15	10		19	178	7		8	1	10
18:30	9	137	20		2	9	18		16	177	3		10	1	15
18:45	5	132	12		2	10	13		7	154	6		5	1	8
19:00	8	156	15		4	4	16		8	170	5		4	2	6
19:15	7	114	14			13	9		6	153	8		1	1	12



Turning Movement Counts

Intersection US31,M37 & Market Place

Date 7/11/2020

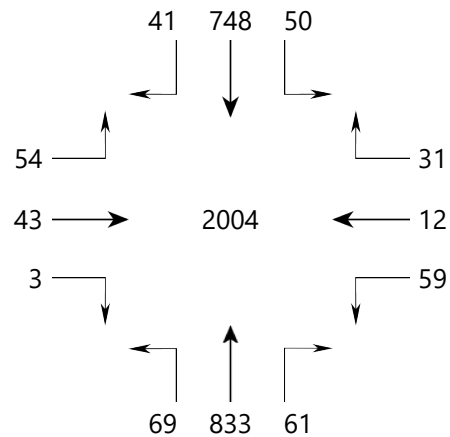
	Northbound				Eastbound				Southbound				Westbound		
	R	T	L	U	R	T	L	U	R	T	L	U	R	T	L
19:30	5	121	8		4	8	11		8	181	3		8	1	8
19:45	2	101	7		1	8	16		11	140	5		6	1	7
20:00	8	120	5		2	6	11		6	134	3		3		1
20:15	4	81	7		1	3	11		5	119	3		4	1	9
20:30	1	90	10		1	5	4		2	121	5		1	1	6
20:45	1	73	3		1	6	4		3	122	1		1		4
21:00		96	2			8	4		3	95	1		3		1
21:15	1	85	2		1	6	3		1	109	1		1		
21:30	2	77				5			2	117			2		2
21:45	1	67	2		3	3	7			96					2
22:00		63			1	4	1		1	90			1		1
22:15		55				3				77					
22:30		40	1		1	1	3		1	75			1		
22:45		42			2	2	1			74					
23:00		38	1			3			1	57					
23:15		25			1	1				48					
23:30		24							1	58					
23:45		18								41					
Total	661	10868	977	1	115	617	870	660	10916	570	1	456	133	720	

Intersection US31,M37 & Market Place

Date 7/11/2020

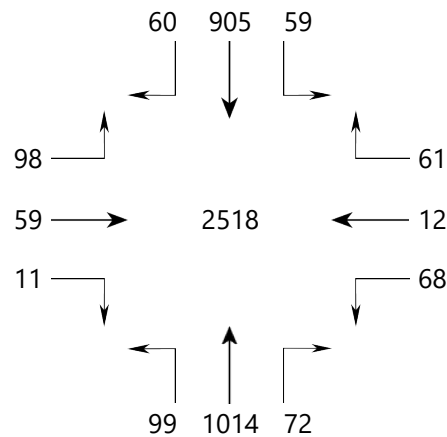
AM PEAK HOUR VOLUME (0:00-10:45)

FROM 09:45 TO 10:45



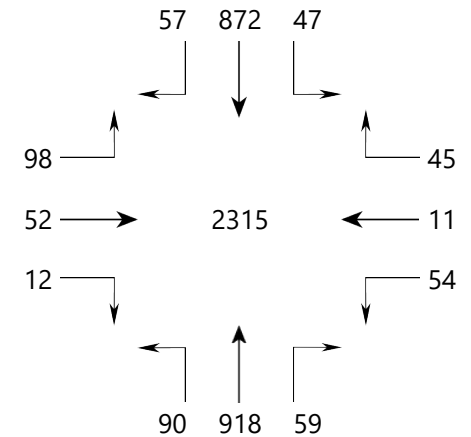
MID-DAY PEAK HOUR VOLUME (11:00-14:00)

FROM 12:15 TO 13:15



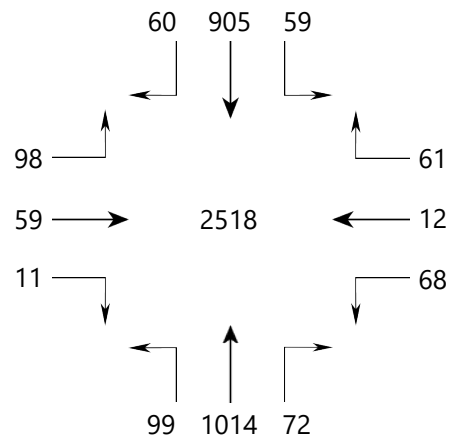
PM PEAK HOUR VOLUME (14:15-23:45)

FROM 14:15 TO 15:15



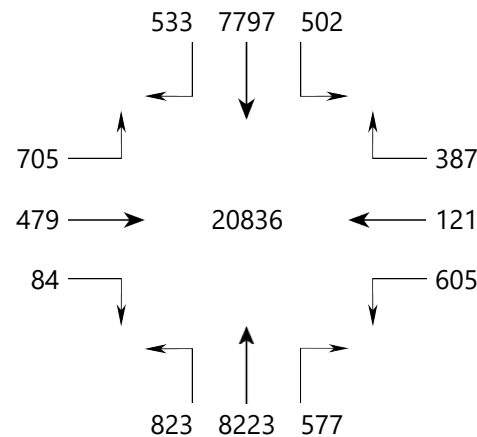
OVERALL PEAK HOUR VOLUME

FROM 12:15 TO 13:15



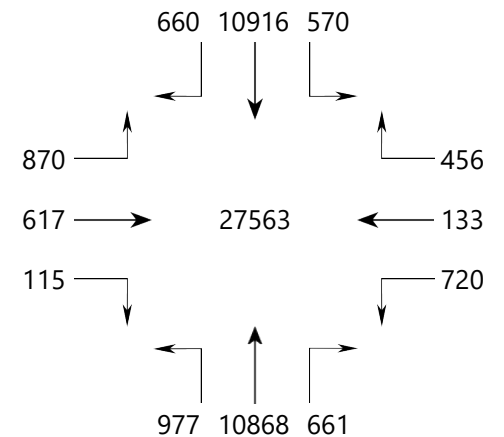
DAYTIME TOTAL VOLUME

FROM 07:00 TO 18:00



SELECTED TIME VOLUME

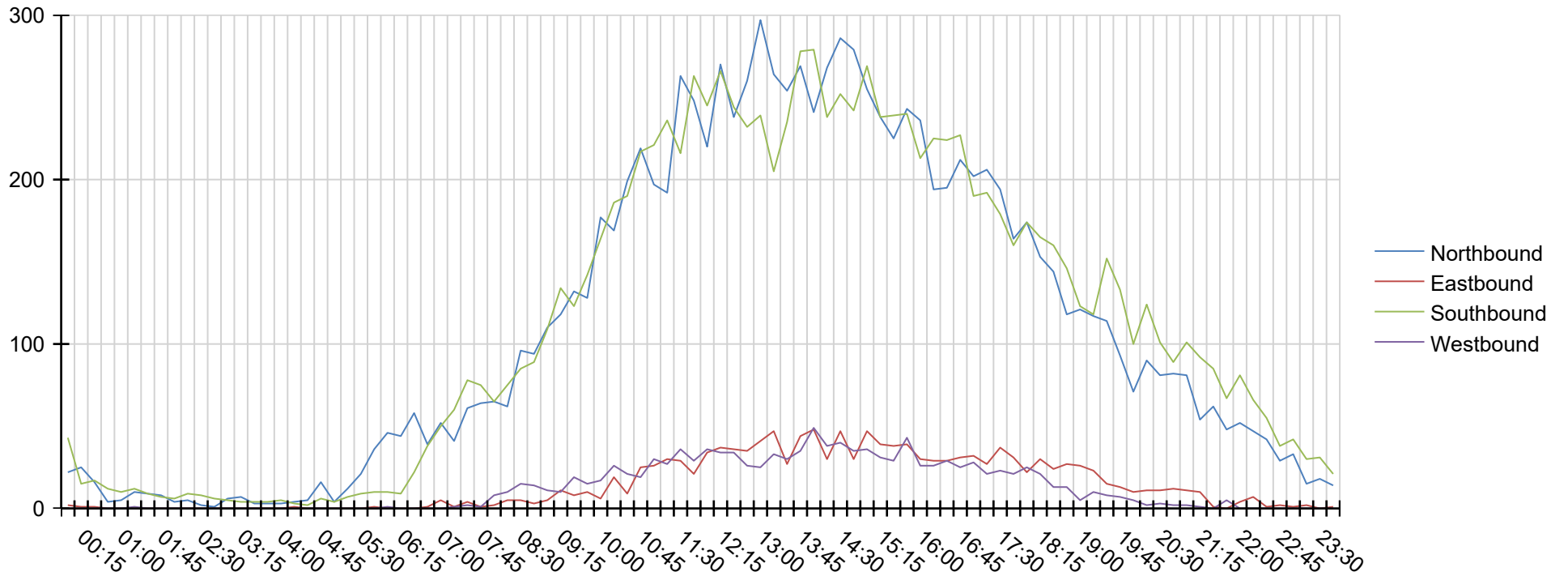
FROM 00:00 TO 23:59



Intersection US31,M37 & Market Place

Date 7/12/2020

	Right	Through	Left	UTurn	Total
Northbound	610	9303	754	1	10668
Eastbound	90	521	749	1	1361
Southbound	567	9794	557	1	10919
Westbound	523	112	553		1188
Total	1790	19730	2613	3	24136





Turning Movement Counts

Intersection US31,M37 & Market Place

Date 7/12/2020

	Northbound				Eastbound				Southbound				Westbound		
	R	T	L	U	R	T	L	U	R	T	L	U	R	T	L
00:00		22			1	1				43					
00:15		25					1			15					
00:30		16				1				17					
00:45		4								12					
01:00		5								10					
01:15	1	9								12				1	
01:30		9								9					
01:45		8								7					
02:00		4								6					
02:15		5								9					
02:30		2								8					
02:45		1								6					
03:00		6								5					
03:15		7								4					
03:30		2	1							4					
03:45		3								4					
04:00		3								5					
04:15		4				1				3					
04:30		5								2					
04:45		16								6					
05:00		4								4					
05:15		12								7					
05:30		18	3						1	8					
05:45	1	30	5				1		3	7					
06:00		46								10					1
06:15	1	43								9					



Turning Movement Counts

Intersection US31,M37 & Market Place

Date 7/12/2020

	Northbound				Eastbound				Southbound				Westbound		
	R	T	L	U	R	T	L	U	R	T	L	U	R	T	L
06:30		58								22					
06:45	4	35					1		4	31	3				
07:00	2	49	1			3	2		2	48					
07:15	3	35	3				1		2	55	3				1
07:30	3	55	3			2	1	1	2	75	1		1	1	
07:45	6	55	3		1				2	62	11				1
08:00	4	59	2				2		5	54	6		4	4	
08:15	5	56	1			3	2		3	59	13		9	1	
08:30	6	88	2			2	3		4	72	9		8	7	
08:45	5	86	3				3		3	77	9		7	7	
09:00	8	100	2			3	2		4	96	9		3	2	6
09:15	8	104	6		1	6	4		9	115	10		6	4	
09:30	5	120	7			7	1		4	108	11		8	3	8
09:45	12	104	12			5	5		6	123	13		5	10	
10:00	12	154	11			5	1		7	149	8		8	2	7
10:15	14	145	10		1	9	9		8	164	14		13	1	12
10:30	16	168	15			6	3		10	166	14		11	1	9
10:45	15	189	15			15	10		8	191	18		8	2	9
11:00	11	169	17		1	13	12		13	196	12		12	2	16
11:15	22	154	16			14	16		12	212	12		12	3	12
11:30	16	234	13		1	19	9		10	192	14		13	2	21
11:45	15	210	23		3	7	11		13	234	16		13	3	13
12:00	23	182	15		2	14	18		11	218	16		14	5	17
12:15	16	242	12		3	15	19		14	238	13	1	13	1	20
12:30	13	204	21		3	13	20		14	218	12		14	7	13
12:45	17	224	19		2	17	16		10	204	18		11	2	13



Turning Movement Counts

Intersection US31,M37 & Market Place

Date 7/12/2020

	Northbound				Eastbound				Southbound				Westbound		
	R	T	L	U	R	T	L	U	R	T	L	U	R	T	L
13:00	19	261	17			15	26		19	211	9		12	1	12
13:15	25	212	27		2	11	34		12	175	18		12	2	19
13:30	15	214	25		2	9	16		18	198	19		11	4	15
13:45	20	228	21		1	18	25		22	241	15		22	1	12
14:00	13	203	25		3	13	32		18	243	18		20	4	25
14:15	22	222	24		3	5	22		17	206	15		20	4	14
14:30	23	237	26		1	16	30		15	228	9		19	4	17
14:45	17	232	30		1	14	15		14	212	16		18	2	15
15:00	18	215	22		5	17	25		16	239	14		18	5	13
15:15	18	194	26		4	14	21		13	209	16		11	7	13
15:30	13	197	15		5	14	19		11	216	12		14	2	13
15:45	17	207	19		3	12	24		17	211	12		19	4	20
16:00	12	208	16		4	8	18		11	195	7		8	1	17
16:15	15	162	17			9	20		12	202	11		11	5	10
16:30	11	168	16		1	13	15		19	199	6		11	2	16
16:45	14	180	18		4	10	17		16	194	17		5	3	17
17:00	10	171	21		1	12	19		8	169	13		8	4	16
17:15	9	179	18		2	6	19		13	175	4		11	3	7
17:30	12	164	18		1	16	20		11	164	4		11	1	11
17:45	11	140	13		4	10	17		8	137	15		8	5	8
18:00	5	159	10		1	9	12		14	148	12		16		9
18:15	5	136	12		4	9	17		7	149	9		11	2	8
18:30	6	128	10		1	8	15		13	145	2		10		3
18:45	3	107	8		3	6	18		10	133	3		5	3	5
19:00	4	104	13		1	9	16		12	109	2		1	1	3
19:15	3	101	13		3	9	11		5	108	5		4		6



Turning Movement Counts

Intersection US31,M37 & Market Place

Date 7/12/2020

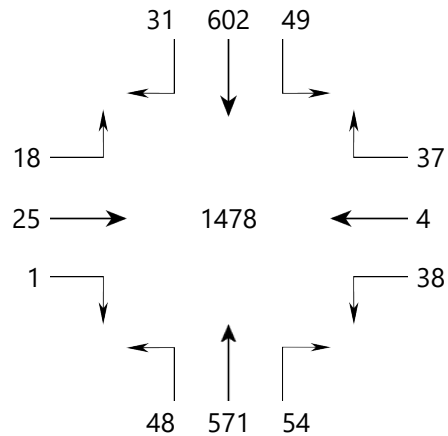
	Northbound				Eastbound				Southbound				Westbound		
	R	T	L	U	R	T	L	U	R	T	L	U	R	T	L
19:30	3	107	4			6	9		11	135	6		4	1	3
19:45		90	3		1	5	7		2	131			1	3	3
20:00	1	65	5		1	6	3		7	93			3		2
20:15		83	7		4	3	4		1	122	1		1		1
20:30		75	6		1	4	6		2	98	1			1	2
20:45	2	76	3	1	1	4	7		2	86	1		1		1
21:00		78	3		1	4	6		1	100			2		
21:15		54				6	4			92					1
21:30		62				1				85					
21:45		48								67			2		3
22:00		52				1	3			81					
22:15		47			1	4	2		4	62					
22:30		42				1			1	54					
22:45		29				1	1		1	37					
23:00		32	1			1				42					
23:15		15			1	1				30					
23:30		17	1							31					
23:45		14					1			21					
Total	610	9303	754	1	90	521	749	1	567	9794	557	1	523	112	553

Intersection US31,M37 & Market Place

Date 7/12/2020

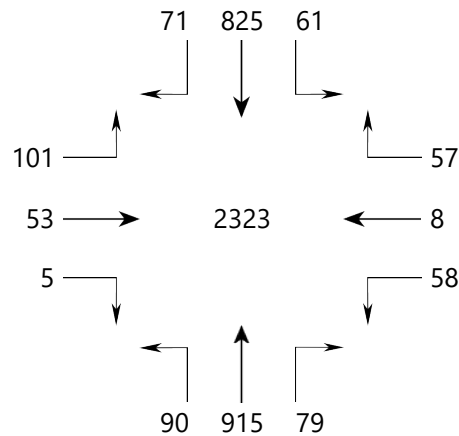
AM PEAK HOUR VOLUME (0:00-10:45)

FROM 09:45 TO 10:45



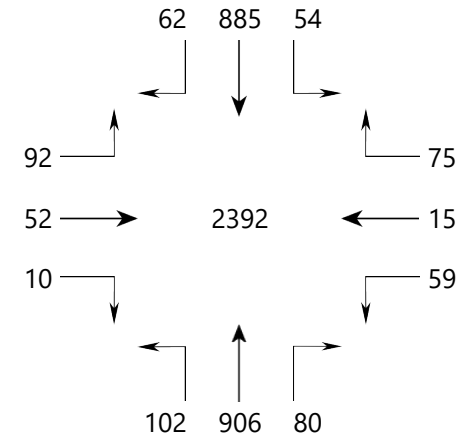
MID-DAY PEAK HOUR VOLUME (11:00-14:00)

FROM 13:00 TO 14:00



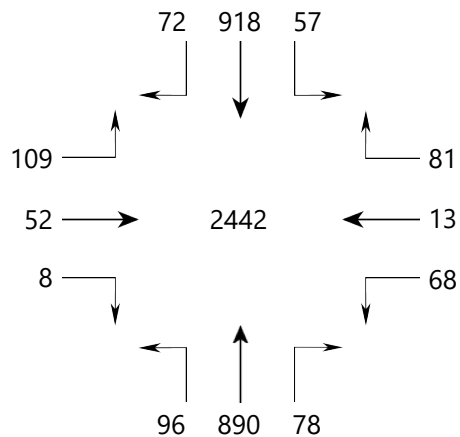
PM PEAK HOUR VOLUME (14:15-23:45)

FROM 14:15 TO 15:15



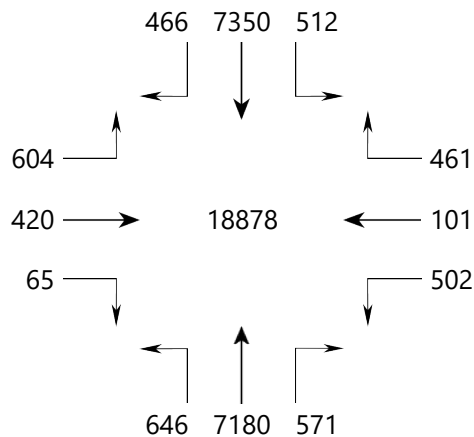
OVERALL PEAK HOUR VOLUME

FROM 13:45 TO 14:45



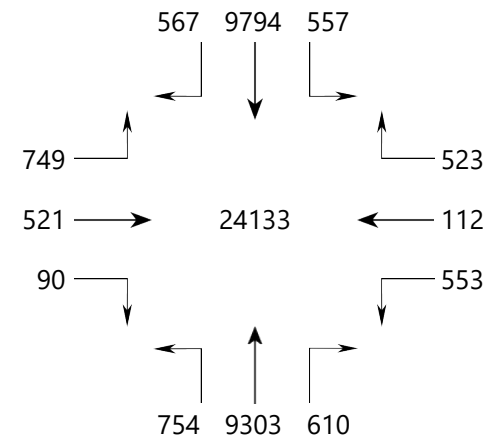
DAYTIME TOTAL VOLUME

FROM 07:00 TO 18:00



SELECTED TIME VOLUME

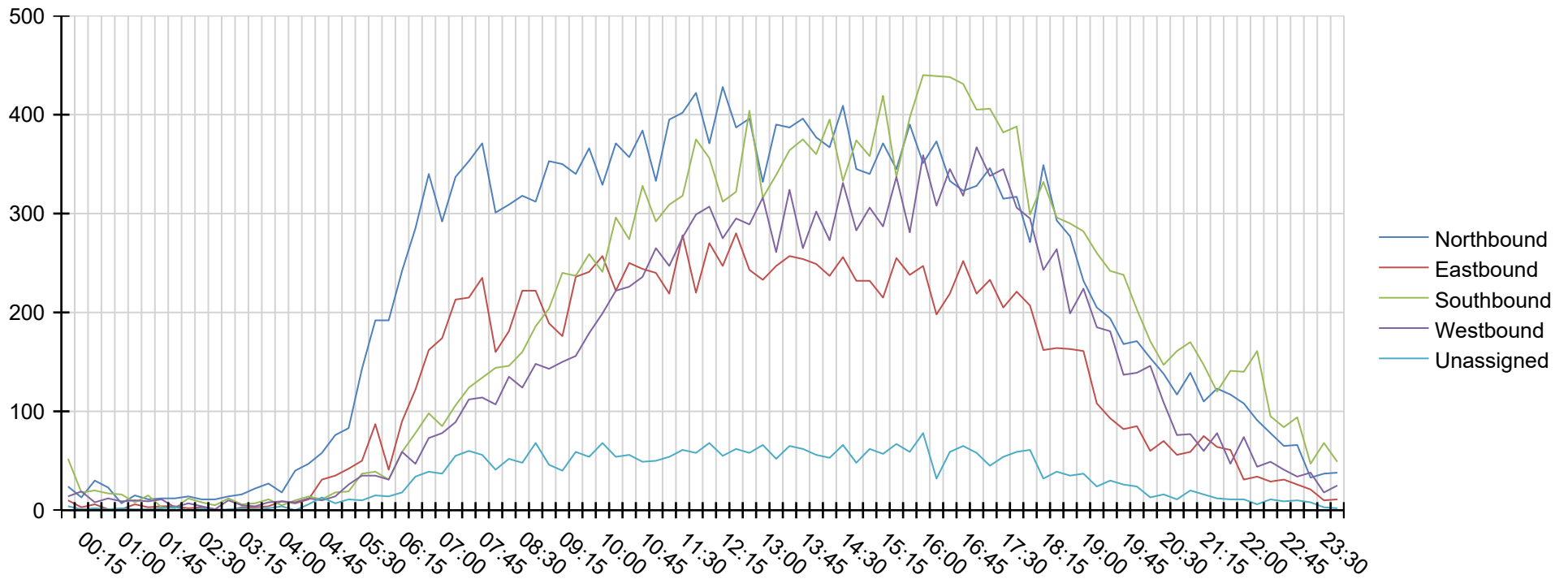
FROM 00:00 TO 23:59



Intersection US31,M37 & S AIRPORT ROAD

Date 7/9/2020

	Right	Through	Left	UTurn	Total
Northbound	5316	14575	1373		21264
Eastbound	209	10291	2237		12737
Southbound	3401	9918	5088	9	18416
Westbound	3750	4665	5784		14199
Unassigned	1147	1988			3135
Total	13823	41437	14482	9	69751





Turning Movement Counts

Intersection US31,M37 & S AIRPORT ROAD

Date 7/9/2020

	Northbound			Eastbound			Southbound				Westbound			Unassigned	
	R	T	L	R	T	L	R	T	L	U	R	T	L	R	T
00:00	4	18	2		8	2	8	33	11			9	5	3	1
00:15	2	9	2		2	1	2	14	2		6	7	6		1
00:30	4	24	2		6		2	14	4			1	7	2	
00:45	3	15	5		1			14	3			6	6	1	
01:00	1	5	1		1			15	1		1	4	4		2
01:15	4	8	3		4	2	4	4				3	7		1
01:30	1	9	1		2	1	3	10	2		2	2	5		1
01:45		12			4			2	1			4	7	2	
02:00	2	9	1	1	2	1		2				2	1	2	1
02:15	7	7			2			6	6		1	3	3		
02:30	2	9			3			6	2		1	3		2	
02:45	2	7	2		1			5				1			
03:00	3	10	1					8	4			3	7	1	
03:15	6	10			3			4	2			2	3		2
03:30	4	17	1		3		1	4	2			2	2		1
03:45	11	16			4		2	6	3		3	1	4	1	1
04:00	4	13	1		8	1		3	2		4	2	3	2	2
04:15	11	29			6	1		6	4		1	4	3		
04:30	13	34			9	2		10	4		6	1	5	1	5
04:45	11	46	1		26	5	4	6	1		3	5	2	7	6
05:00	19	56	1		33	2	2	15	1		4	3	7	2	5
05:15	13	66	4		39	3	2	9	8		7	8	11	3	8
05:30	35	100	8	2	46	2	11	21	5		11	7	17	5	5
05:45	43	139	10	2	83	2	4	24	11		9	10	16	5	10
06:00	28	156	8	2	36	3		24	7		3	14	14	5	9
06:15	23	210	9	2	86	2	5	36	18		14	17	28	5	13



Turning Movement Counts

Intersection US31,M37 & S AIRPORT ROAD

Date 7/9/2020

	Northbound			Eastbound			Southbound				Westbound			Unassigned	
	R	T	L	R	T	L	R	T	L	U	R	T	L	R	T
06:30	49	221	15	1	110	11	6	43	29		14	18	15	10	24
06:45	73	249	18		151	11	6	49	43		21	20	32	17	22
07:00	58	217	17	2	160	12	8	54	23		22	23	33	10	27
07:15	83	239	15	2	194	17	8	69	29		31	30	28	18	37
07:30	68	268	17	2	193	20	16	76	32		33	43	36	16	44
07:45	83	268	20	3	204	28	14	80	40		30	39	45	18	38
08:00	67	213	21	3	138	19	20	77	47		25	46	36	9	32
08:15	66	226	17	2	153	26	26	69	51		41	42	52	15	37
08:30	80	215	23	3	186	33	25	86	49		39	42	43	11	37
08:45	73	225	14	3	191	28	31	91	64		46	50	52	16	52
09:00	80	250	23	1	157	31	38	99	66	1	39	48	56	13	33
09:15	82	248	20	3	154	19	47	121	72		54	49	47	11	29
09:30	81	239	20	5	199	32	38	123	76		47	59	50	19	40
09:45	89	249	28	1	191	49	46	123	90		72	63	44	16	38
10:00	72	240	17	8	213	36	43	125	73		63	70	66	23	45
10:15	87	261	23	3	172	47	47	165	84		68	75	79	16	38
10:30	96	233	28	4	203	43	49	127	97	1	72	67	87	16	40
10:45	105	258	21	1	191	52	71	157	100		78	75	83	10	39
11:00	111	207	15	3	179	58	51	143	98		76	84	105	11	39
11:15	123	258	14		175	44	54	157	97	1	86	64	97	22	32
11:30	116	263	23	2	217	59	60	152	106		90	84	102	15	46
11:45	115	286	21	3	172	45	67	201	107		86	87	126	16	42
12:00	99	244	28	4	219	47	64	194	98		101	82	124	28	40
12:15	119	278	31	2	195	50	71	155	86		78	83	114	25	30
12:30	95	265	27	2	199	79	78	165	79		76	92	127	21	41
12:45	117	262	17	4	183	56	88	201	115		83	92	114	21	37



Turning Movement Counts

Intersection US31,M37 & S AIRPORT ROAD

Date 7/9/2020

	Northbound			Eastbound			Southbound				Westbound			Unassigned	
	R	T	L	R	T	L	R	T	L	U	R	T	L	R	T
13:00	96	216	20	1	187	45	48	162	106		86	109	121	20	46
13:15	100	279	11	4	188	55	54	190	95		94	73	94	16	36
13:30	131	234	22	5	196	56	67	195	102		106	87	131	21	44
13:45	126	251	19	6	201	47	60	200	115		80	70	115	24	38
14:00	94	259	24	5	193	51	65	193	102		86	98	118	18	38
14:15	94	250	23	2	183	52	77	199	119		76	75	122	29	24
14:30	105	274	30	3	209	44	56	154	123		104	96	131	21	45
14:45	91	235	19	3	177	52	83	200	91		79	83	121	11	37
15:00	97	215	28	5	189	38	66	187	104	1	75	103	128	25	37
15:15	107	234	30	3	175	37	85	234	99	1	85	87	115	28	29
15:30	101	219	25	5	210	40	57	187	93		84	118	135	24	43
15:45	115	258	17	6	174	58	81	220	96		56	92	133	22	37
16:00	102	218	31	5	212	30	99	235	106		76	121	162	32	46
16:15	109	241	23	4	138	56	90	240	109		71	98	139	11	21
16:30	79	222	32	6	167	46	92	250	96		71	126	148	29	30
16:45	84	212	27	8	197	47	90	233	108		65	125	128	31	34
17:00	84	214	30	10	165	44	98	215	92		76	139	152	28	30
17:15	77	231	38	3	186	44	95	225	86		62	126	150	15	30
17:30	85	196	34	3	159	43	88	193	101		70	131	144	25	29
17:45	89	200	28	4	181	36	64	238	86		70	113	123	34	25
18:00	77	172	22	9	162	36	50	150	99		59	114	122	31	30
18:15	78	252	19	2	125	35	68	182	82		56	79	108	11	21
18:30	65	209	19	5	128	31	58	148	90		72	83	109	20	19
18:45	66	195	16	1	130	32	66	158	66		35	63	101	15	20
19:00	61	153	18	5	116	40	70	138	74		46	82	96	13	24
19:15	56	138	11	2	78	28	47	156	56	1	36	59	90	10	14



Turning Movement Counts

Intersection US31,M37 & S AIRPORT ROAD

Date 7/9/2020

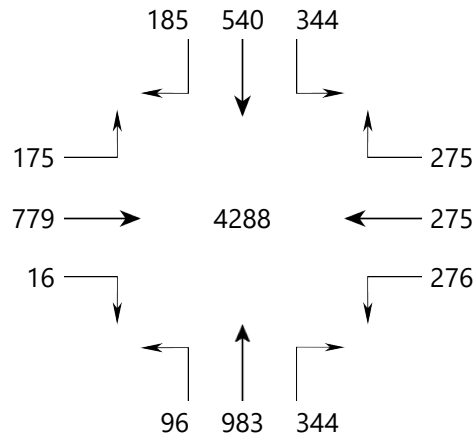
	Northbound			Eastbound			Southbound				Westbound			Unassigned	
	R	T	L	R	T	L	R	T	L	U	R	T	L	R	T
19:30	48	126	20	3	74	16	44	141	57		54	51	76	13	17
19:45	40	109	19	3	68	11	39	133	66		43	39	55	13	13
20:00	49	111	11	4	70	11	55	89	59		25	44	70	14	10
20:15	28	114	12	3	48	9	27	103	40	1	36	45	65	4	9
20:30	24	105	9	1	58	11	30	77	40		26	43	40	5	11
20:45	30	78	9		47	9	30	86	45		23	22	31	3	8
21:00	18	103	18		53	6	24	99	47		21	25	31	10	10
21:15	21	81	8		62	13	25	80	42		14	24	22	6	10
21:30	21	95	7	2	50	12	19	69	32		17	29	32	4	8
21:45	34	76	7	1	54	6	10	94	37		11	20	16	6	5
22:00	18	76	14	1	27	3	20	79	41		11	35	28	5	6
22:15	19	66	6		29	5	28	105	28		8	14	22	3	3
22:30	14	58	6		24	5	4	52	37	2	11	17	21	6	5
22:45	11	48	6		27	4	12	60	12		5	16	20	6	3
23:00	11	50	5		25	1	16	53	25		10	9	15	7	3
23:15	7	23	3		16	5	6	37	4		6	12	20	5	3
23:30	4	32	1		7	3	10	46	12		4	9	5		3
23:45	7	31			9	2	6	30	13		2	10	13	1	1
Total	5316	14575	1373	209	10291	2237	3401	9918	5088	9	3750	4665	5784	1147	1988

Intersection US31,M37 & S AIRPORT ROAD

Date 7/9/2020

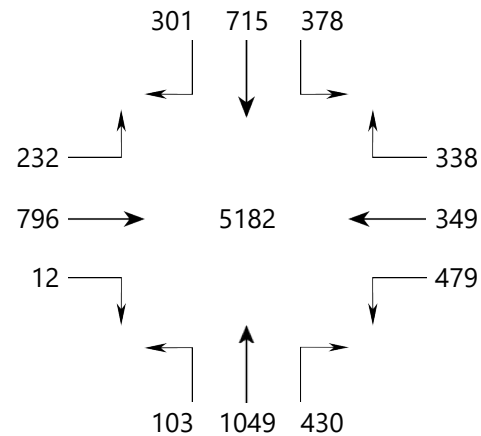
AM PEAK HOUR VOLUME (0:00-10:45)

FROM 09:45 TO 10:45



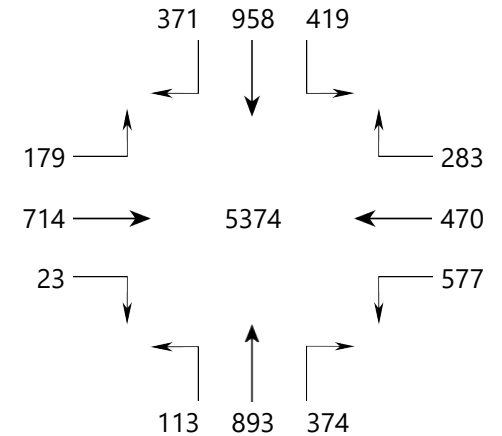
MID-DAY PEAK HOUR VOLUME (11:00-14:00)

FROM 12:00 TO 13:00



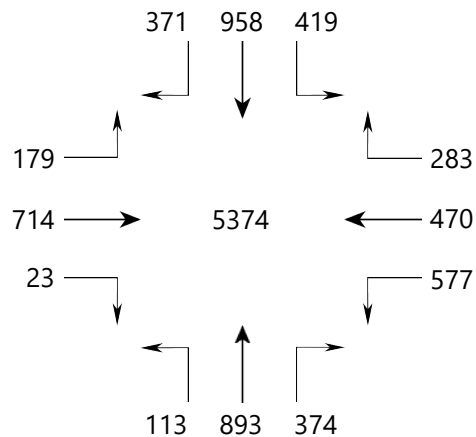
PM PEAK HOUR VOLUME (14:15-23:45)

FROM 16:00 TO 17:00



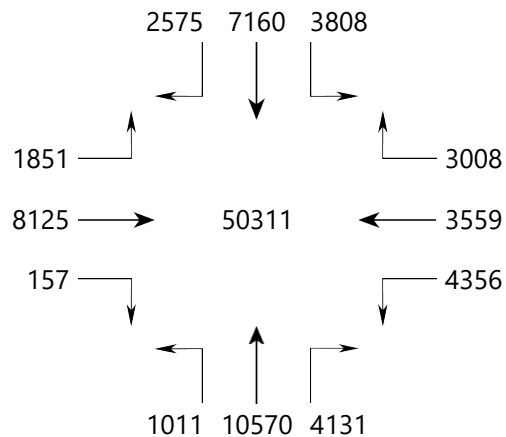
OVERALL PEAK HOUR VOLUME

FROM 16:00 TO 17:00



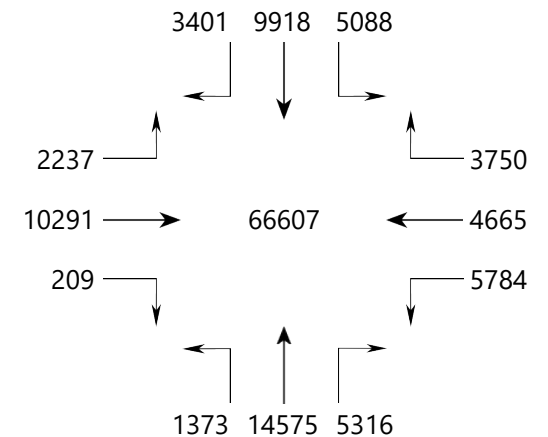
DAYTIME TOTAL VOLUME

FROM 07:00 TO 18:00



SELECTED TIME VOLUME

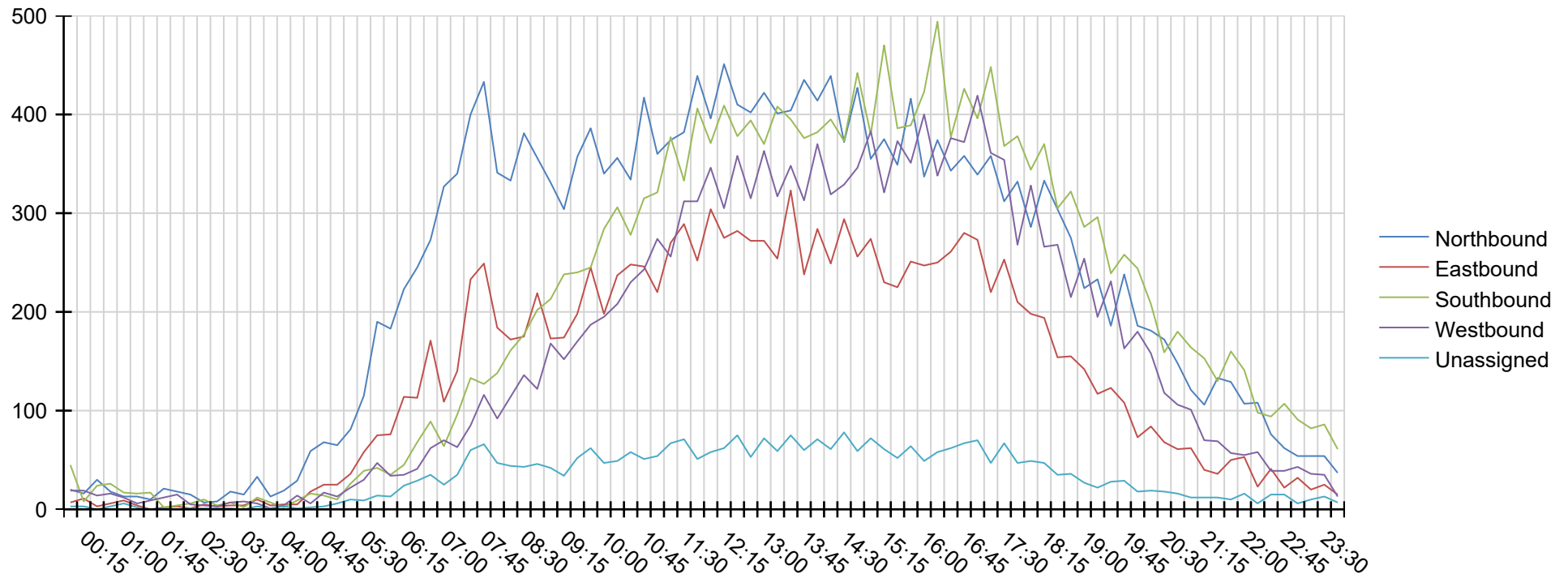
FROM 00:00 TO 23:59



Intersection US31,M37 & S AIRPORT ROAD

Date 7/10/2020

	Right	Through	Left	UTurn	Total
Northbound	5712	15027	1397	1	22137
Eastbound	195	10580	2426		13201
Southbound	3505	10350	5598	9	19462
Westbound	4190	4824	6410	4	15428
Unassigned	1171	1985			3156
Total	14773	42766	15831	14	73384





Turning Movement Counts

Intersection US31,M37 & S AIRPORT ROAD

Date 7/10/2020

	Northbound				Eastbound				Southbound				Westbound				Unassigned	
	R	T	L	U	R	T	L	U	R	T	L	U	R	T	L	U	R	T
00:00	7	13				7			14	28	3		2	7	10		3	
00:15	4	6	6			11				7	1			8	11		3	
00:30	3	23	4			3			2	16	6		2	8	4			
00:45	6	10	2			6				21	5		1	9	6		2	1
01:00	3	9	1			8	1	6		11			1	6	5		4	2
01:15	4	7	2			2	2	1		15				3	3			2
01:30	4	5	1					4		12	1			1	8			
01:45	3	17	1			2				1	1		4	1	7			1
02:00	2	15	1			1	2			4			1	3	11			
02:15	7	7	1			1				5	1		1	1	3		1	
02:30		7				3	2			8	2			1	3			1
02:45	1	6	1			3				3	1				3			1
03:00	6	11	1			4				6	1			2	5		1	
03:15	4	11			1	3				2			2	4	2			
03:30	7	26				8	2			5	7		1	3	2			3
03:45	6	7				4		2		4	1		1					1
04:00	4	15				4	1	1	1	1				1	3			3
04:15	9	17	3			4	1			6	3		1	3	9	1	1	
04:30	10	47	2			15	3	2	8	6				2	4		2	
04:45	12	51	5		1	15	9	4	10				4	1	12		1	2
05:00	16	48	1			19	6		5	5			5	2	6		1	5
05:15	15	62	4		1	30	5	5	16	5			6	5	11		5	5
05:30	27	79	9		1	47	10	6	17	16			8	5	17		1	8
05:45	31	149	10		2	55	18	7	31	4			10	15	22		2	12
06:00	17	162	4		2	71	3	2	20	13			9	10	15		7	6
06:15	40	171	12		5	107	2	4	29	12			8	12	15		8	16



Turning Movement Counts

Intersection US31,M37 & S AIRPORT ROAD

Date 7/10/2020

	Northbound				Eastbound				Southbound				Westbound				Unassigned	
	R	T	L	U	R	T	L	U	R	T	L	U	R	T	L	U	R	T
06:30	41	192	12		3	103	7		8	42	18		13	10	18		6	23
06:45	55	209	9		12	149	10		8	52	29		26	12	24		13	22
07:00	50	259	18		3	91	15		2	35	27		25	18	27		7	18
07:15	54	265	21		5	113	22		8	46	42		30	13	20		7	28
07:30	60	321	19		5	198	30		14	76	43		23	25	37		18	42
07:45	82	326	25		2	211	36		12	78	37		35	46	35		21	45
08:00	66	255	20		3	161	20		18	74	46		22	38	32		11	36
08:15	73	250	10		3	147	22		20	82	59		34	38	42		14	30
08:30	82	281	18		1	150	24		21	96	60		42	51	43		13	30
08:45	90	254	12		1	183	35		45	85	71	1	34	43	45		11	35
09:00	67	252	12		1	140	32		29	102	82		54	52	62		18	24
09:15	84	209	11			138	36		37	119	82		51	50	51		5	29
09:30	89	248	20		2	168	28		36	123	81		54	51	65		14	38
09:45	96	276	14			205	40		42	123	80		60	55	72		10	52
10:00	111	215	14		1	156	41		57	133	94		71	54	70		15	32
10:15	95	242	19		2	185	50		44	152	110		56	54	98		13	36
10:30	99	217	18		3	199	46		56	134	88		71	61	98		19	39
10:45	145	250	22		2	187	57		57	160	98		72	74	97		14	37
11:00	108	232	20		2	170	48		58	174	88	1	89	80	105		14	40
11:15	116	240	18		1	208	61		60	198	119		74	71	111		20	47
11:30	116	254	12		2	216	71		58	162	113		107	92	113		21	50
11:45	139	278	22		2	182	68		76	199	131		96	85	131		17	34
12:00	122	248	26		4	232	68		96	173	101	1	92	111	143		17	41
12:15	133	296	22		3	212	60		68	219	121	1	91	81	133		22	40
12:30	128	256	26		5	215	62		77	195	105	1	116	113	129		34	41
12:45	121	253	28		1	218	53		77	192	125		97	85	133		14	39



Turning Movement Counts

Intersection US31,M37 & S AIRPORT ROAD

Date 7/10/2020

	Northbound				Eastbound				Southbound				Westbound				Unassigned	
	R	T	L	U	R	T	L	U	R	T	L	U	R	T	L	U	R	T
13:00	138	254	30		3	215	54	68	182	120			104	117	141	1	20	52
13:15	122	257	22		2	195	57	74	212	122			99	90	128		21	38
13:30	132	248	24		6	254	63	92	182	120	1		112	97	139		34	41
13:45	113	284	38		6	199	33	68	196	111	1		94	81	138		22	38
14:00	133	247	34		3	223	58	78	204	100			99	113	158		26	45
14:15	117	287	35		3	195	51	68	202	125			87	98	134		23	38
14:30	108	242	22		3	230	61	67	200	106			82	97	150		28	50
14:45	130	280	17		4	210	42	72	243	127			100	112	134		21	38
15:00	104	230	21		1	209	64	79	206	95			101	116	166		29	43
15:15	99	253	23		3	187	40	95	249	126			86	95	140		24	37
15:30	109	215	25		2	174	49	67	216	103			88	119	166		14	38
15:45	118	265	33		4	203	44	60	229	100			88	110	153		30	34
16:00	98	216	23		6	186	55	105	214	104			96	138	166		24	25
16:15	104	243	27		4	196	50	133	245	116			74	123	141		28	30
16:30	98	221	24		3	216	42	68	212	97			94	127	155		27	35
16:45	95	230	33		7	221	52	76	243	107			91	118	163		29	38
17:00	103	202	34		7	241	25	77	230	89			94	155	170		37	33
17:15	77	241	40		4	162	54	90	243	115			65	137	159		21	26
17:30	88	192	32		5	202	46	90	196	82			78	121	155		25	42
17:45	93	214	25		5	169	36	88	205	85			71	96	101		19	28
18:00	73	191	22		3	156	39	73	167	103	1		72	120	136		24	25
18:15	82	221	30		4	154	36	63	210	97			60	80	126		27	20
18:30	63	220	21		2	120	32	64	164	77			59	76	133		15	20
18:45	75	178	22		6	116	33	68	170	84			57	64	94		16	20
19:00	66	139	19		1	105	36	61	147	77	1		74	73	107		13	14
19:15	49	157	27		2	93	22	48	171	77			46	58	91		10	12



Turning Movement Counts

Intersection US31,M37 & S AIRPORT ROAD

Date 7/10/2020

	Northbound				Eastbound				Southbound				Westbound				Unassigned	
	R	T	L	U	R	T	L	U	R	T	L	U	R	T	L	U	R	T
19:30	42	131	13			95	28	38	130	71			59	74	98		11	17
19:45	54	169	15		3	85	20	28	141	89			44	39	80		9	20
20:00	57	114	15		2	61	10	56	116	72			42	65	73		8	10
20:15	44	121	16		1	70	13	34	111	63			50	35	73		9	10
20:30	36	122	14		2	54	12	27	78	54			35	41	42		6	12
20:45	22	116	10		2	56	3	28	99	53			47	25	34		10	6
21:00	23	91	7		2	53	7	24	94	46			24	40	37		5	7
21:15	30	67	9		1	33	6	14	85	54			20	26	24		6	6
21:30	26	101	6		1	27	8	6	81	43			15	35	18	1	4	8
21:45	30	86	13			43	7	18	97	45			23	20	14		5	5
22:00	21	81	4	1		46	7	19	76	46			12	22	20	1	9	7
22:15	10	92	6			18	5	12	67	19			8	21	29		5	1
22:30	11	57	8			36	5	4	59	31			9	12	18		10	5
22:45	6	49	7			22		16	73	18			10	13	16		10	5
23:00	12	39	3			23	9	11	48	32			8	12	23		5	1
23:15	17	32	5			18	2	17	48	17			8	15	13		8	2
23:30	7	44	3			24	1	15	52	19			2	17	16		11	2
23:45	7	29	1			15		2	42	17			1	5	7		3	4
Total	5712	15027	1397	1	195	10580	2426	3505	10350	5598	9	4190	4824	6410	4	1171	1985	

GRIDSMART[®]

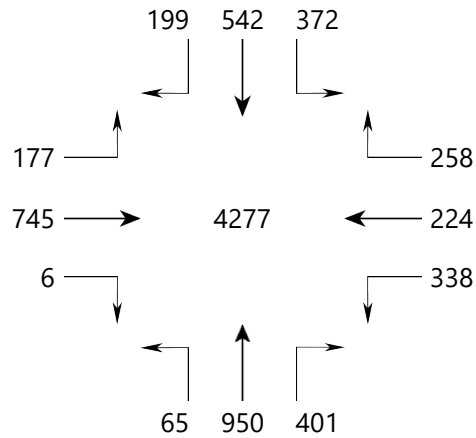
Turning Movement Counts

Intersection US31,M37 & S AIRPORT ROAD

Date 7/10/2020

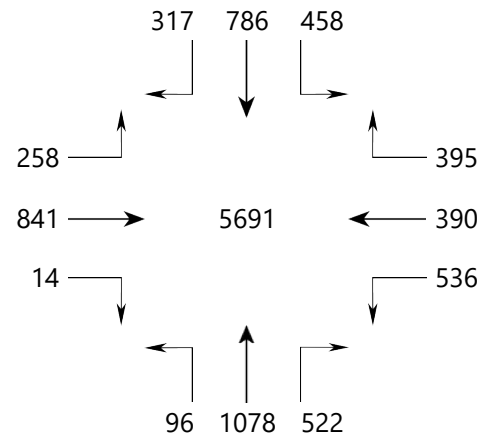
AM PEAK HOUR VOLUME (0:00-10:45)

FROM 09:45 TO 10:45



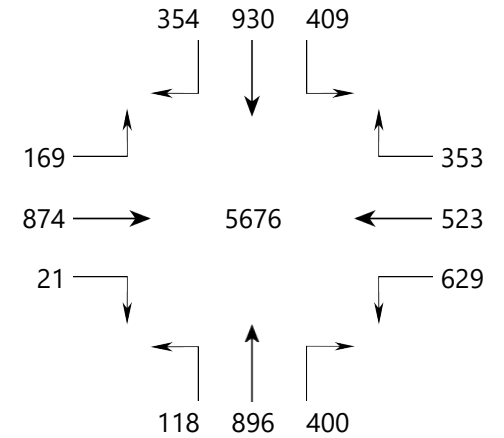
MID-DAY PEAK HOUR VOLUME (11:00-14:00)

FROM 11:45 TO 12:45



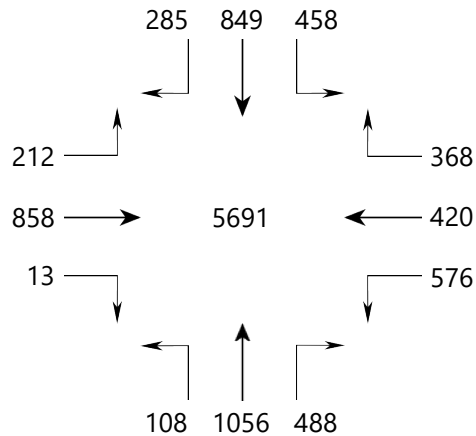
PM PEAK HOUR VOLUME (14:15-23:45)

FROM 16:15 TO 17:15



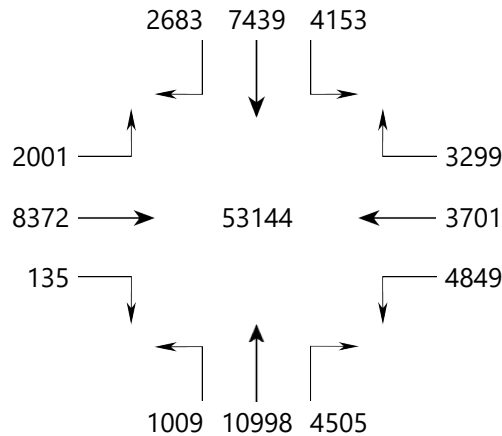
OVERALL PEAK HOUR VOLUME

FROM 14:00 TO 15:00



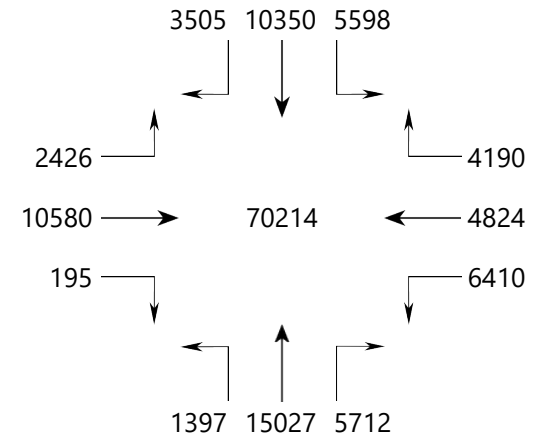
DAYTIME TOTAL VOLUME

FROM 07:00 TO 18:00



SELECTED TIME VOLUME

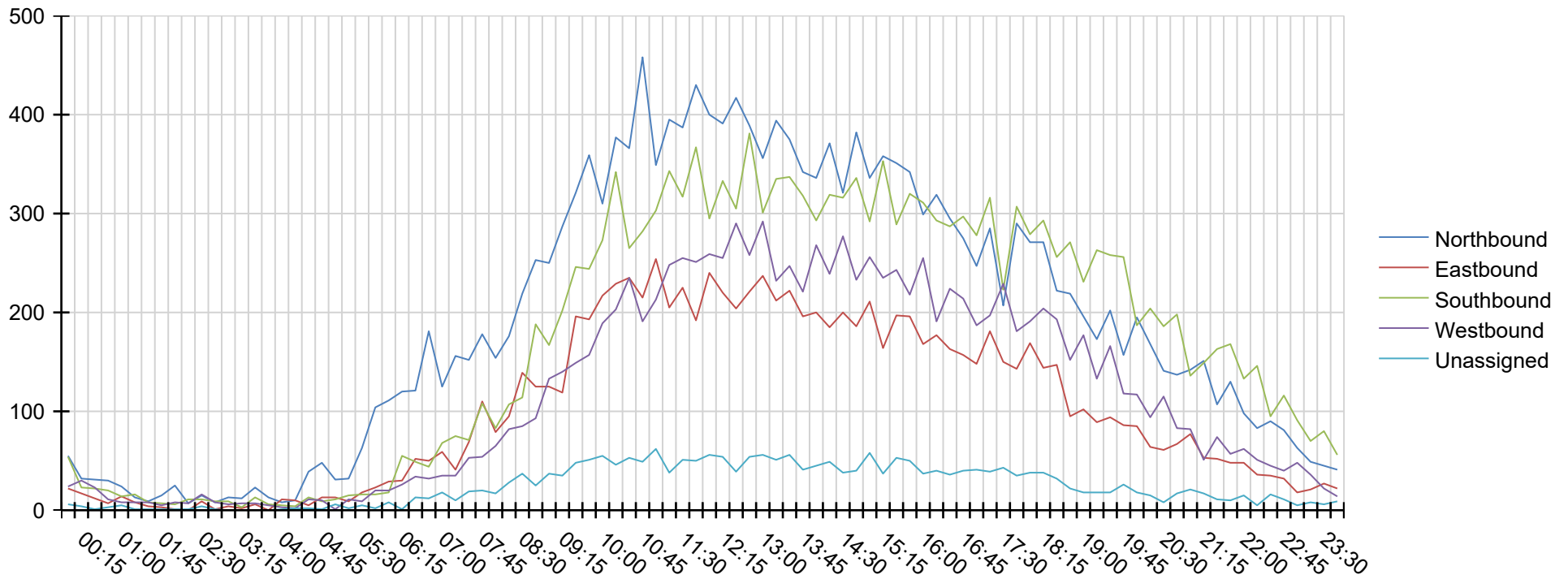
FROM 00:00 TO 23:59



Intersection US31,M37 & S AIRPORT ROAD

Date 7/11/2020

	Right	Through	Left	UTurn	Total
Northbound	4416	12949	1040		18405
Eastbound	170	7829	1746		9745
Southbound	2724	8753	4882	13	16372
Westbound	3186	3452	4614		11252
Unassigned	864	1458	1		2323
Total	11360	34441	12283	13	58097





Turning Movement Counts

Intersection US31,M37 & S AIRPORT ROAD

Date 7/11/2020

	Northbound			Eastbound			Southbound				Westbound			Unassigned		
	R	T	L	R	T	L	R	T	L	U	R	T	L	R	T	L
00:00	9	44	2		22		7	28	19			11	13	5	1	
00:15	4	27	1		16	1	2	17	4			15	15	4		
00:30	4	23	4		11	1	3	15	4		4	10	9	1		
00:45	4	23	3		7		2	15	3		1	6	4		3	
01:00	5	17	2		12	2		13	1			5	3	3	2	
01:15	2	11			7	1	6	8	2		2	3	3		1	
01:30	1	6	2		2	2		8			1	3	4	1		
01:45	2	9	4		3			6	1			3	2	1		
02:00	5	17	3		1			6			1	3	4		1	
02:15	3	4						9	2			2	5		1	
02:30	4	11			8	1	1	8	2		1	2	13	3	1	
02:45		7	1		1			6	3		1	5	2		1	
03:00	3	10			3	1		9			1	2	3			
03:15	2	8	2		2			3				3	4			
03:30	14	7	2		6			12	1			3	4			
03:45	3	7	3					4	2		1	1	3			
04:00	1	6	1	2	9			5			1	2		1		
04:15	3	7			10			4				2		1	1	
04:30	16	23			5		4	4	5		1	4	6	1	1	
04:45	5	43			11	2	4	3	2		2	3	5	1		
05:00	6	25			12	1		10	1				1	3	3	
05:15	8	23	1		8	1		8	7		5	3	3	1	1	
05:30	16	44	3		15	3		15	1		3	4	2	3	2	
05:45	18	85	1		22	1	2	12	2		11	3	6		2	
06:00	10	100	1	1	27	1	2	7	9		7	5	8	4	4	
06:15	14	104	2		27	3	6	29	20		8	10	8	1		



Turning Movement Counts

Intersection US31,M37 & S AIRPORT ROAD

Date 7/11/2020

	Northbound			Eastbound			Southbound				Westbound			Unassigned		
	R	T	L	R	T	L	R	T	L	U	R	T	L	R	T	L
06:30	13	105	3		50	2	12	28	9		9	12	13	3	10	
06:45	36	145			45	5	1	28	15		9	9	14	6	6	
07:00	27	91	7		48	11	15	26	27		12	8	15	5	13	
07:15	37	112	7	1	32	8	11	52	12		11	13	11	3	7	
07:30	32	113	7		63	6	4	52	15		25	11	17	7	12	
07:45	31	135	12	3	90	17	10	61	37		21	18	15	6	14	
08:00	37	110	7		62	17	14	50	19		23	15	27	4	13	
08:15	37	131	8		88	7	14	64	29		28	19	35	10	18	
08:30	63	152	4	1	117	21	18	61	35		32	31	22	12	25	
08:45	58	182	13		109	16	28	87	73		27	24	42	5	20	
09:00	66	176	8	2	95	28	30	84	53		43	37	53	12	25	
09:15	79	197	11	2	92	25	20	115	67		57	37	46	13	22	
09:30	83	222	16	2	168	26	51	126	69		40	49	60	19	29	
09:45	89	254	16	1	169	23	26	124	94		42	51	64	10	41	
10:00	63	233	14		180	37	46	124	103		64	56	69	11	44	
10:15	99	260	18	7	185	37	82	163	97		64	53	86	15	31	
10:30	99	248	19	2	183	50	44	132	89		77	78	80	17	36	
10:45	112	318	28	3	169	43	46	149	87		60	59	72	15	34	
11:00	90	242	17	3	197	54	70	139	94		55	60	98	20	42	
11:15	103	271	21	1	170	34	68	162	112	1	82	71	95	12	26	
11:30	110	257	20	2	159	64	70	141	106		79	75	101	15	36	
11:45	105	298	27	6	142	44	82	159	125	1	77	70	104	18	32	
12:00	102	275	23	1	196	43	44	160	91		69	78	112	13	43	
12:15	105	262	24	1	171	48	68	154	111		77	80	98	15	39	
12:30	110	287	20	3	147	54	62	157	85	1	80	88	122	16	23	
12:45	112	260	17	8	175	38	72	184	125		68	78	112	24	30	



Turning Movement Counts

Intersection US31,M37 & S AIRPORT ROAD

Date 7/11/2020

	Northbound			Eastbound			Southbound				Westbound			Unassigned		
	R	T	L	R	T	L	R	T	L	U	R	T	L	R	T	L
13:00	73	268	15	3	187	47	68	128	105		78	94	120	18	38	
13:15	85	289	20	2	167	43	72	164	99		65	69	98	21	30	
13:30	88	263	24	2	178	42	55	168	112	2	78	66	103	20	36	
13:45	101	221	20	2	149	45	68	147	103		65	71	85	15	26	
14:00	89	231	16	2	161	37	53	145	93	2	76	82	110	11	34	
14:15	98	252	21	6	143	36	31	175	112	1	82	64	93	15	34	
14:30	87	218	16	3	148	49	62	169	85		74	94	109	9	29	
14:45	94	271	17	3	150	33	34	209	91	2	74	64	95	17	23	
15:00	84	221	31	8	173	30	40	161	91		77	87	92	19	39	
15:15	89	236	33	6	132	26	58	191	104		63	73	99	17	20	
15:30	82	242	27	1	152	44	63	137	88	1	66	63	114	15	38	
15:45	70	251	21	3	150	43	60	170	90		63	55	100	23	27	
16:00	88	190	21	3	126	39	53	155	103		66	88	101	11	26	
16:15	71	227	21	6	138	33	50	170	72	1	56	61	74	14	26	
16:30	62	209	24	3	125	35	42	154	91		60	79	85	14	22	
16:45	61	196	18	3	127	27	62	145	90		64	56	94	14	26	
17:00	85	148	14	1	126	21	52	154	72		46	66	75	15	26	
17:15	74	193	18	9	141	31	52	172	92		72	64	61	22	17	
17:30	52	143	12	3	121	26	32	130	61		51	71	107	16	27	
17:45	69	198	23	4	118	21	44	160	103		45	61	75	17	18	
18:00	60	192	19	13	124	32	46	152	81		56	50	85	22	16	
18:15	65	185	21	4	114	26	36	161	96		49	69	86	22	16	
18:30	53	156	13	2	120	25	26	141	89		47	57	89	12	20	
18:45	51	149	19	2	80	13	42	160	69		44	41	67	13	9	
19:00	38	143	15	2	77	23	37	126	68		55	53	69	9	9	
19:15	46	117	10	2	69	18	44	156	63		32	42	59	5	13	



Turning Movement Counts

Intersection US31,M37 & S AIRPORT ROAD

Date 7/11/2020

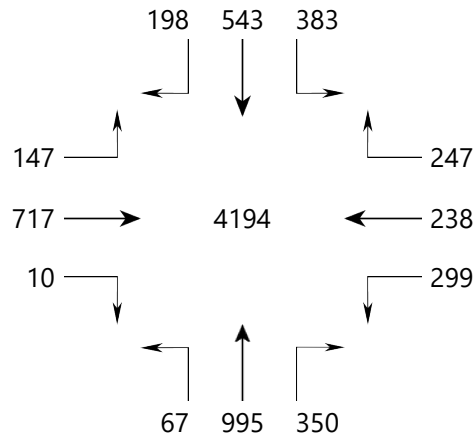
	Northbound			Eastbound			Southbound				Westbound			Unassigned		
	R	T	L	R	T	L	R	T	L	U	R	T	L	R	T	L
19:30	51	140	11	1	75	18	48	148	62		31	60	75	10	8	
19:45	48	100	9	5	68	13	32	146	78		31	35	52	16	9	1
20:00	55	127	13	2	67	16	43	107	37		31	33	53	8	10	
20:15	35	124	9	2	58	4	30	127	47		22	31	41	9	6	
20:30	32	102	7	2	48	11	26	103	57		32	37	46	7	1	
20:45	28	101	8		56	11	38	98	62		24	21	38	4	13	
21:00	25	108	9	2	71	4	13	84	39		21	22	39	8	13	
21:15	27	117	7	1	46	6	8	98	43		12	21	18	8	9	
21:30	17	82	8	3	38	11	25	99	39		14	28	32	4	7	
21:45	25	100	5		44	4	30	97	41		16	17	24	5	5	
22:00	25	64	9	2	43	3	20	84	29		18	20	24	10	5	
22:15	9	72	2		31	5	26	87	33		14	19	18		5	
22:30	14	67	9		35		15	65	14	1	5	14	26	6	10	
22:45	10	64	7		28	4	12	73	31		5	16	19	8	3	
23:00	14	45	4		15	3	17	54	20		11	14	23	2	3	
23:15	9	36	4		18	3	6	44	20		5	18	13	2	6	
23:30	9	33	3		23	4	4	55	21		6	7	9	4	2	
23:45	8	31	2		20	2	2	38	16		2	6	6	7	2	
Total	4416	12949	1040	170	7829	1746	2724	8753	4882	13	3186	3452	4614	864	1458	1

Intersection US31,M37 & S AIRPORT ROAD

Date 7/11/2020

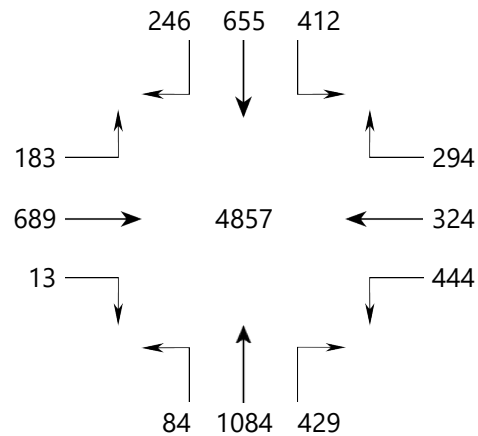
AM PEAK HOUR VOLUME (0:00-10:45)

FROM 09:45 TO 10:45



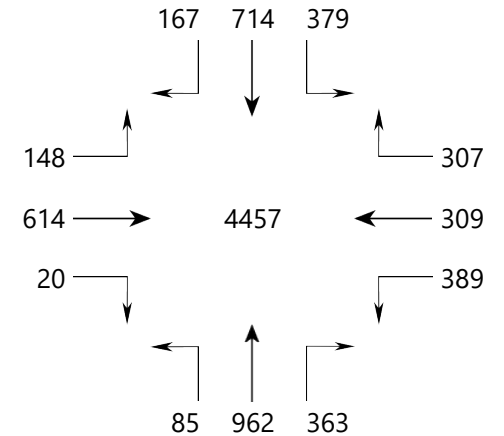
MID-DAY PEAK HOUR VOLUME (11:00-14:00)

FROM 12:00 TO 13:00



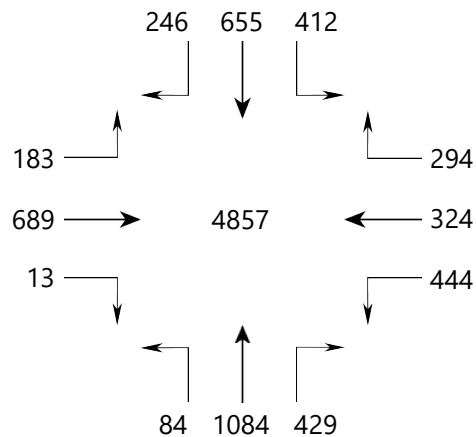
PM PEAK HOUR VOLUME (14:15-23:45)

FROM 14:15 TO 15:15



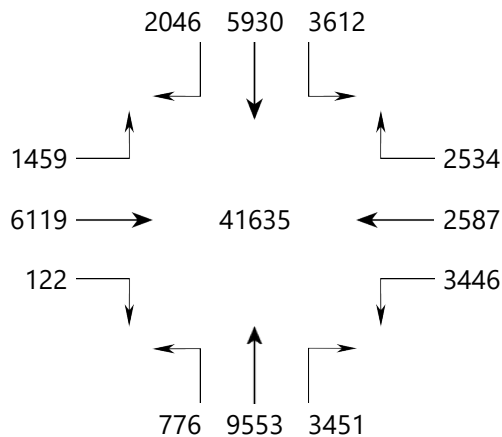
OVERALL PEAK HOUR VOLUME

FROM 12:00 TO 13:00



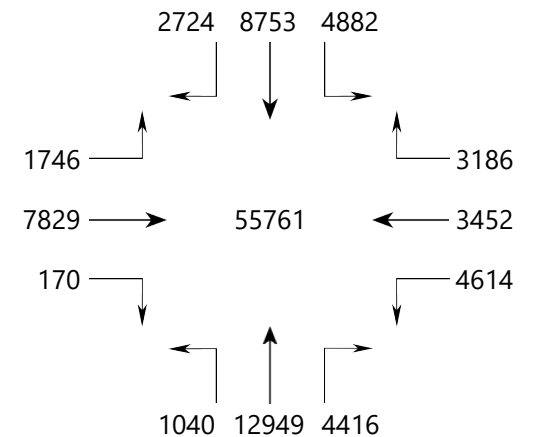
DAYTIME TOTAL VOLUME

FROM 07:00 TO 18:00



SELECTED TIME VOLUME

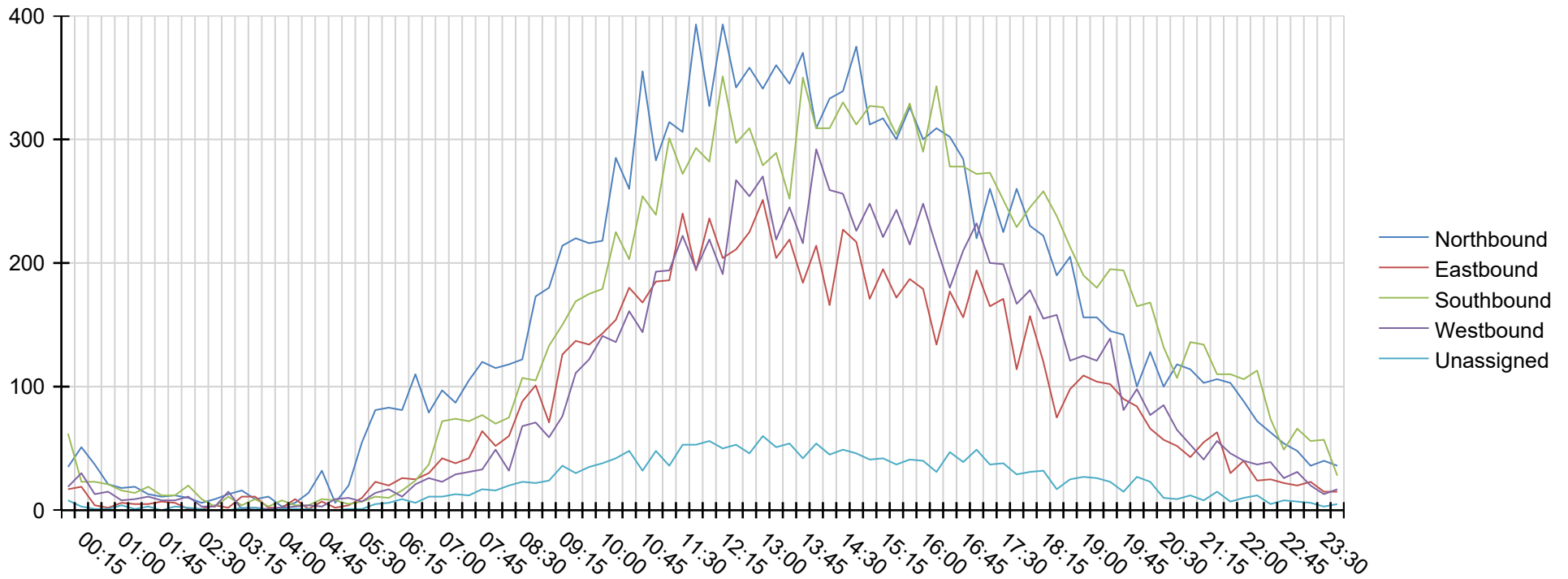
FROM 00:00 TO 23:59



Intersection US31,M37 & S AIRPORT ROAD

Date 7/12/2020

	Right	Through	Left	UTurn	Total
Northbound	3843	10637	924		15404
Eastbound	185	6986	1557	1	8729
Southbound	2366	7648	4122	6	14142
Westbound	2633	3018	4035		9686
Unassigned	810	1312			2122
Total	9837	29601	10638	7	50083





Turning Movement Counts

Intersection US31,M37 & S AIRPORT ROAD

Date 7/12/2020

	Northbound			Eastbound				Southbound				Westbound			Unassigned	
	R	T	L	R	T	L	U	R	T	L	U	R	T	L	R	T
00:00	2	29	4		16	1		4	47	11		2	5	12	6	2
00:15	12	37	2		16	3		2	16	5		1	10	19	1	2
00:30	5	27	5		4				12	11		1	7	5	1	
00:45	5	14	2		1	1		5	11	5		2	2	11		1
01:00	7	9	2		5	1			8	8		2	3	3	3	1
01:15	7	10	2		5			4	7	3		2	1	6	1	
01:30	2	10	1		5			4	13	2		2	3	6	2	1
01:45	2	9			7			2	8	2		1	2	5		
02:00	4	7	1	1	5				7	5		1	2	5	3	
02:15	4	6			1			2	16	2		3	3	5	2	
02:30	1	4	1		1				9				1	2		1
02:45	6	2	1		4				3				2	1		
03:00	1	11	1		2				7	4			5	10		
03:15	2	9	5		9	2			4					1		2
03:30	4	5			11			2	7				2		1	1
03:45	2	8	1		2				1	2				1		
04:00	1	2			2			2	6			2			1	
04:15		5	1		9				2	2		2	1		1	
04:30	5	9			1				2	2			2	2		1
04:45	5	27			7			4	5			1	1	1		
05:00		6			2				6	2		2	1	6		
05:15	4	16			4			1	4			3		7		1
05:30	9	42	4	1	8	1			6	1		4	2	1	1	
05:45	12	66	3	1	21	1		2	5	4		5	4	5	1	4
06:00	8	71	4	1	15	4			8	2		6	8	3	3	3
06:15	11	70			24	2			10	6		5	5	1	2	7



Turning Movement Counts

Intersection US31,M37 & S AIRPORT ROAD

Date 7/12/2020

	Northbound			Eastbound				Southbound				Westbound			Unassigned	
	R	T	L	R	T	L	U	R	T	L	U	R	T	L	R	T
06:30	9	97	4		24	1		4	12	8		9	9	3	2	4
06:45	19	57	3	2	25	3		2	23	12		10	8	8	5	6
07:00	16	76	5		39	3		11	45	16		7	3	13	5	6
07:15	18	66	3		32	6		10	45	19		6	9	14	3	10
07:30	21	75	9		38	4		6	44	22		10	9	12	3	9
07:45	34	86		2	57	5		7	53	17		16	9	8	5	12
08:00	28	83	4		46	6		13	34	23		14	18	17	4	12
08:15	28	83	7		52	8		6	47	22		14	9	9	4	16
08:30	32	86	4	3	72	12	1	16	48	43		26	19	23	6	17
08:45	49	114	10	2	81	18		14	47	44		19	21	31	8	14
09:00	49	125	6	1	62	8		21	65	47		17	14	28	5	19
09:15	58	147	9	2	110	14		20	80	50		22	21	33	13	23
09:30	61	146	13	1	117	19		26	78	65		25	34	52	14	16
09:45	57	148	11	5	111	18		24	96	55		34	37	51	12	23
10:00	55	155	8	5	109	29		20	100	59		43	39	59	13	25
10:15	62	209	14	2	132	20		33	135	57		32	44	60	13	29
10:30	63	181	16	4	137	39		22	114	67		48	53	60	15	33
10:45	98	241	16	4	130	34		41	148	65		53	35	56	12	20
11:00	97	169	17	2	147	36		36	126	77		45	58	90	14	34
11:15	78	218	18	4	141	41		55	146	100		56	73	65	18	18
11:30	79	213	14	4	179	57		48	152	72		71	68	83	19	34
11:45	107	263	23	4	148	42		46	167	80		52	67	76	17	36
12:00	95	216	16	2	189	45		62	139	81		58	71	90	17	39
12:15	105	268	20	3	158	43		69	175	107		63	51	77	17	33
12:30	102	216	24	2	171	38		64	147	86		64	81	122	21	32
12:45	95	238	25	6	172	47		40	182	87		85	72	97	17	29



Turning Movement Counts

Intersection US31,M37 & S AIRPORT ROAD

Date 7/12/2020

	Northbound			Eastbound				Southbound				Westbound			Unassigned	
	R	T	L	R	T	L	U	R	T	L	U	R	T	L	R	T
13:00	89	237	15	4	199	48		46	155	78		72	91	107	19	41
13:15	106	233	21	5	167	32		62	144	82	1	76	56	87	16	35
13:30	101	227	17	3	163	53		47	130	75		52	75	118	17	37
13:45	106	238	26	2	145	37		66	187	96	1	61	67	88	16	26
14:00	98	198	13	3	158	53		58	159	92		73	88	131	23	31
14:15	91	227	15	4	130	32		52	151	106		92	69	98	15	30
14:30	92	232	15	5	167	55		56	167	107		70	81	105	18	31
14:45	86	266	23	4	164	49		53	180	79		55	71	100	19	27
15:00	78	216	18	1	140	30		74	150	102	1	65	80	103	11	30
15:15	74	225	18	3	158	34		44	166	116		68	57	96	16	26
15:30	82	203	15	2	135	35		61	158	85		56	94	93	10	27
15:45	72	224	30	3	140	44		60	170	99		56	66	93	13	28
16:00	76	208	16	1	143	35		67	145	78		73	65	110	20	20
16:15	73	210	26		102	32		74	174	95		58	62	93	6	25
16:30	86	202	14	6	146	25		60	150	68		45	48	87	20	27
16:45	77	187	20	7	117	32		48	146	84		56	79	75	18	21
17:00	59	148	13	11	150	33		64	131	77		62	73	97	25	24
17:15	64	183	13	6	125	34		44	138	89	2	66	57	77	19	18
17:30	43	170	12	12	125	34		42	129	80		49	65	85	22	16
17:45	53	177	30	4	94	16		46	110	73		44	53	70	11	18
18:00	60	149	21	3	119	35		31	134	80		38	57	83	11	20
18:15	48	159	15	4	97	19		53	133	72		38	47	70	16	16
18:30	48	128	14	4	57	14		45	129	64		33	60	65	7	10
18:45	34	153	18	6	78	14		30	120	63		27	40	54	13	12
19:00	42	105	9	2	94	13		33	107	50		33	48	44	14	13
19:15	33	107	16	3	86	15		20	109	51		39	38	44	13	13



Turning Movement Counts

Intersection US31,M37 & S AIRPORT ROAD

Date 7/12/2020

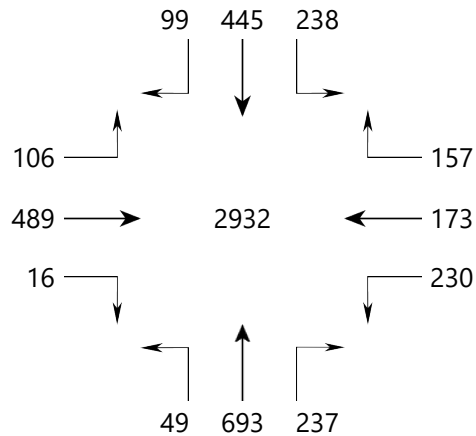
	Northbound			Eastbound				Southbound				Westbound			Unassigned	
	R	T	L	R	T	L	U	R	T	L	U	R	T	L	R	T
19:30	33	99	13	1	90	11		26	121	48		25	44	70	11	12
19:45	35	100	7		79	11		36	112	46		26	30	25	8	7
20:00	28	62	10	1	74	9		26	88	50	1	16	35	47	11	16
20:15	26	83	19	1	60	5		25	90	53		22	28	27	8	15
20:30	30	62	8	3	47	7		20	80	32		21	26	38	3	7
20:45	26	89	3	2	41	9		10	75	22		20	20	25	5	4
21:00	16	87	11		39	4		16	75	45		14	16	23	2	10
21:15	22	72	9		46	9		20	79	35		13	11	17	4	4
21:30	27	75	4	2	58	3		16	65	29		14	22	20	7	8
21:45	19	72	12	2	28			15	61	34		11	17	18	5	2
22:00	16	69	3		35	5		18	69	19		13	12	15	4	6
22:15	16	55	1		20	4		25	62	26		8	12	17	4	8
22:30	14	44	5		22	3		4	52	18		9	13	17	4	1
22:45	3	47	4		21	1			36	13		2	14	10	2	6
23:00	4	39	5		17	3		10	38	18		10	7	14	4	3
23:15	8	23	5		19	4		3	42	11		4	12	4	2	4
23:30	8	29	3		11	4		6	33	18		1	5	7	2	1
23:45	5	31		1	14			4	20	4		1	3	13	5	
Total	3843	10637	924	185	6986	1557	1	2366	7648	4122	6	2633	3018	4035	810	1312

Intersection US31,M37 & S AIRPORT ROAD

Date 7/12/2020

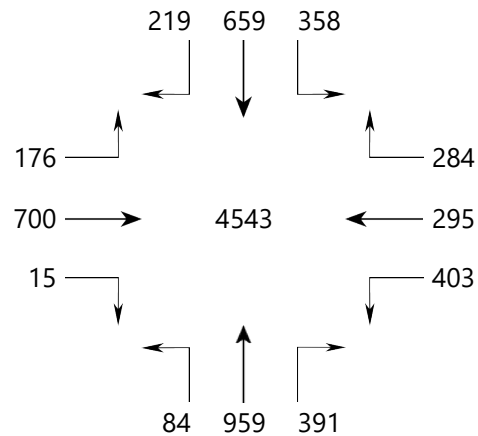
AM PEAK HOUR VOLUME (0:00-10:45)

FROM 09:45 TO 10:45



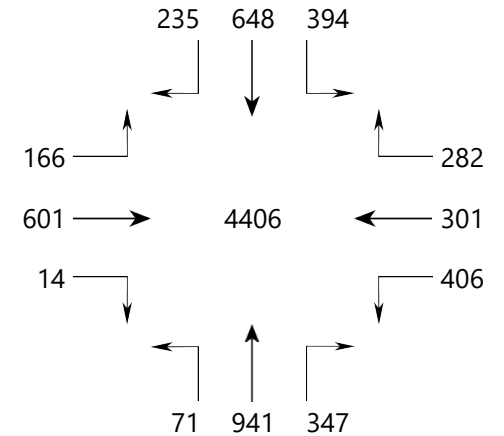
MID-DAY PEAK HOUR VOLUME (11:00-14:00)

FROM 12:15 TO 13:15



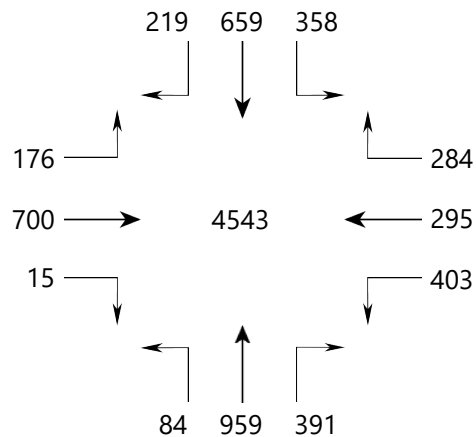
PM PEAK HOUR VOLUME (14:15-23:45)

FROM 14:15 TO 15:15



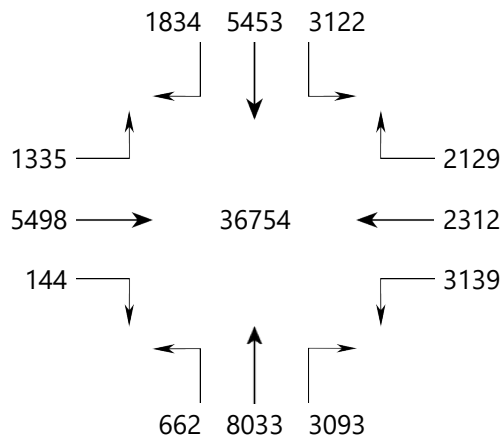
OVERALL PEAK HOUR VOLUME

FROM 12:15 TO 13:15



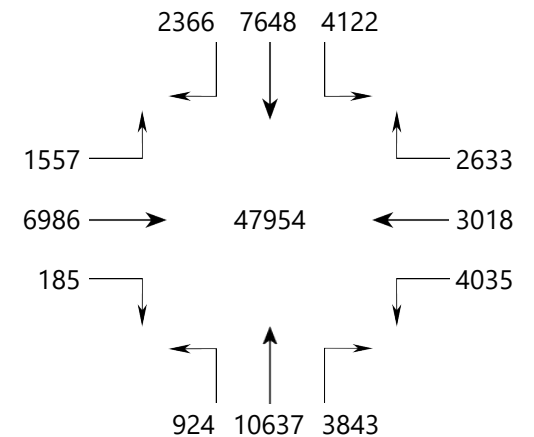
DAYTIME TOTAL VOLUME

FROM 07:00 TO 18:00



SELECTED TIME VOLUME

FROM 00:00 TO 23:59



Synchro Analysis Results

HCM 6th TWSC
 3: US-31/M-37 & Proposed Driveway

03/02/2021

Intersection						
Int Delay, s/veh	1.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙	↗	↕		↙	↕
Traffic Vol, veh/h	61	55	807	83	46	452
Future Vol, veh/h	61	55	807	83	46	452
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	0	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	95	95	85	85
Heavy Vehicles, %	0	0	2	2	2	2
Mvmt Flow	66	60	849	87	54	532

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1267	468	0	0	936
Stage 1	893	-	-	-	-
Stage 2	374	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.14
Critical Hdwy Stg 1	5.8	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.22
Pot Cap-1 Maneuver	163	547	-	-	727
Stage 1	365	-	-	-	-
Stage 2	672	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	151	547	-	-	727
Mov Cap-2 Maneuver	272	-	-	-	-
Stage 1	365	-	-	-	-
Stage 2	622	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	17.7	0	1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	272	547	727	-
HCM Lane V/C Ratio	-	-	0.244	0.109	0.074	-
HCM Control Delay (s)	-	-	22.4	12.4	10.3	-
HCM Lane LOS	-	-	C	B	B	-
HCM 95th %tile Q(veh)	-	-	0.9	0.4	0.2	-

HCM 6th TWSC
 3: US-31/M-37 & Proposed Driveway

03/02/2021

Intersection						
Int Delay, s/veh	2.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖	↗	↕		↖	↗
Traffic Vol, veh/h	75	78	971	72	88	1255
Future Vol, veh/h	75	78	971	72	88	1255
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	0	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	95	95
Heavy Vehicles, %	0	0	2	2	2	2
Mvmt Flow	82	85	1055	78	93	1321

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1941	567	0	0	1133
Stage 1	1094	-	-	-	-
Stage 2	847	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.14
Critical Hdwy Stg 1	5.8	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.22
Pot Cap-1 Maneuver	~ 58	472	-	-	612
Stage 1	287	-	-	-	-
Stage 2	386	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	~ 49	472	-	-	612
Mov Cap-2 Maneuver	162	-	-	-	-
Stage 1	287	-	-	-	-
Stage 2	327	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	30.7	0	0.8
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	162	472	612	-
HCM Lane V/C Ratio	-	-	0.503	0.18	0.151	-
HCM Control Delay (s)	-	-	47.8	14.3	11.9	-
HCM Lane LOS	-	-	E	B	B	-
HCM 95th %tile Q(veh)	-	-	2.4	0.6	0.5	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 6th TWSC
3: US-31/M-37 & Proposed Driveway

03/02/2021

Intersection						
Int Delay, s/veh	4.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙	↗	↕		↙	↕
Traffic Vol, veh/h	93	90	1162	116	94	979
Future Vol, veh/h	93	90	1162	116	94	979
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	0	-	-	250	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	93	93	87	87
Heavy Vehicles, %	0	0	2	2	2	2
Mvmt Flow	101	98	1249	125	108	1125

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	2091	687	0	0	1374
Stage 1	1312	-	-	-	-
Stage 2	779	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.14
Critical Hdwy Stg 1	5.8	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.22
Pot Cap-1 Maneuver	~ 46	394	-	-	495
Stage 1	220	-	-	-	-
Stage 2	418	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	~ 36	394	-	-	495
Mov Cap-2 Maneuver	136	-	-	-	-
Stage 1	220	-	-	-	-
Stage 2	327	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	51.1	0	1.3
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	136	394	495	-
HCM Lane V/C Ratio	-	-	0.743	0.248	0.218	-
HCM Control Delay (s)	-	-	84.1	17.1	14.3	-
HCM Lane LOS	-	-	F	C	B	-
HCM 95th %tile Q(veh)	-	-	4.3	1	0.8	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 6th TWSC
 3: US-31/M-37 & Proposed Driveway

03/02/2021

Intersection						
Int Delay, s/veh	1.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑↑		↘	↑↑
Traffic Vol, veh/h	61	55	873	83	46	488
Future Vol, veh/h	61	55	873	83	46	488
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	0	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	95	95	85	85
Heavy Vehicles, %	0	0	2	2	2	2
Mvmt Flow	66	60	919	87	54	574

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1358	503	0	0	1006	0
Stage 1	963	-	-	-	-	-
Stage 2	395	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.14	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.22	-
Pot Cap-1 Maneuver	143	519	-	-	684	-
Stage 1	336	-	-	-	-	-
Stage 2	656	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	132	519	-	-	684	-
Mov Cap-2 Maneuver	251	-	-	-	-	-
Stage 1	336	-	-	-	-	-
Stage 2	604	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.9	0	0.9
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	251	519	684	-
HCM Lane V/C Ratio	-	-	0.264	0.115	0.079	-
HCM Control Delay (s)	-	-	24.4	12.8	10.7	-
HCM Lane LOS	-	-	C	B	B	-
HCM 95th %tile Q(veh)	-	-	1	0.4	0.3	-

HCM 6th TWSC
 3: US-31/M-37 & Proposed Driveway

03/02/2021

Intersection						
Int Delay, s/veh	2.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙	↗	↕		↙	↕
Traffic Vol, veh/h	75	78	1049	72	88	1355
Future Vol, veh/h	75	78	1049	72	88	1355
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	0	-	-	250	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	95	95
Heavy Vehicles, %	0	0	2	2	2	2
Mvmt Flow	82	85	1140	78	93	1426

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	2078	609	0	0	1218
Stage 1	1179	-	-	-	-
Stage 2	899	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.14
Critical Hdwy Stg 1	5.8	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.22
Pot Cap-1 Maneuver	~ 47	443	-	-	568
Stage 1	259	-	-	-	-
Stage 2	362	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	~ 39	443	-	-	568
Mov Cap-2 Maneuver	145	-	-	-	-
Stage 1	259	-	-	-	-
Stage 2	303	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	36	0	0.8
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	145	443	568	-
HCM Lane V/C Ratio	-	-	0.562	0.191	0.163	-
HCM Control Delay (s)	-	-	57.8	15	12.6	-
HCM Lane LOS	-	-	F	C	B	-
HCM 95th %tile Q(veh)	-	-	2.8	0.7	0.6	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 6th TWSC
3: US-31/M-37 & Proposed Driveway

03/02/2021

Intersection						
Int Delay, s/veh	4.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↕		↘	↕
Traffic Vol, veh/h	93	90	1256	116	94	1058
Future Vol, veh/h	93	90	1256	116	94	1058
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	0	-	-	250	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	93	93	87	87
Heavy Vehicles, %	0	0	2	2	2	2
Mvmt Flow	101	98	1351	125	108	1216

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	2238	738	0	0	1476
Stage 1	1414	-	-	-	-
Stage 2	824	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.14
Critical Hdwy Stg 1	5.8	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.22
Pot Cap-1 Maneuver	~ 37	365	-	-	452
Stage 1	194	-	-	-	-
Stage 2	396	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	~ 28	365	-	-	452
Mov Cap-2 Maneuver	120	-	-	-	-
Stage 1	194	-	-	-	-
Stage 2	301	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	65.9	0	1.3
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	120	365	452	-
HCM Lane V/C Ratio	-	-	0.842	0.268	0.239	-
HCM Control Delay (s)	-	-	111.9	18.4	15.4	-
HCM Lane LOS	-	-	F	C	C	-
HCM 95th %tile Q(veh)	-	-	5.1	1.1	0.9	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon