

Traffic Data Analysis

Fifth St

Northbound and Southbound



Town of Midland

Engineering Department

July 26th, 2022

Table of Contents

1.0	Introduction	3
1.1	Location.....	3
1.2	Traffic Trailer	3
2.0	Speed Summary.....	3
2.1	Northbound Speed Analysis	4
2.2	Southbound Speed Analysis	7
3.0	Traffic Volume	10
3.1	Northbound Volume by Hour	10
3.2	Southbound Volume by Hour	11
4.0	Conclusion	12

List of Figures

Figure 1-	Traffic Trailer	3
Figure 2-	Total Volume Breakdown Based on Speed per Hour Intervals (Northbound).....	4
Figure 3-	Traffic Volume Speeds for Each Hour on Weekdays (Northbound)	5
Figure 4 -	Traffic Volume Speeds for Each Hour on Weekends (Northbound)	6
Figure 5 -	Total Volume Breakdown Based on Speed per Hour Intervals (Southbound)	7
Figure 6 -	Traffic Volume Speeds for Each Hour on Weekdays (Southbound)	8
Figure 7 -	Traffic Volume Speeds for Each Hour on Weekends (Southbound)	9
Figure 8 -	Total Volume per Day (Northbound).....	10
Figure 9 -	Total Volume per Hour (Northbound).....	11
Figure 10 -	Total Volume per Day (Southbound).....	11
Figure 11 -	Total Volume per Hour (Southbound).....	12

List of Tables

Table 1-	Locations of Traffic Trailer	3
Table 2-	Speed Summary.....	4
Table 3 -	Volume Summary	10

1.0 Introduction

A traffic count was conducted from July 13th, 2022, to July 27th, 2022, on Fifth Street for both northbound and southbound directions. Vehicle speeds and traffic volumes were collected by a traffic trailer (model ATS-3). The purpose is to see if there are any speeding issues, raise safety awareness, and help calm traffic by displaying speeds of vehicles approaching.

1.1 Location

The traffic trailer was placed on Fifth Street for both northbound and southbound directions. Table 1 below shows the location of the traffic trailer and data collection period.

Table 1- Locations of Traffic Trailer

Direction	Location	Period
Northbound	43 Fifth Street, Midland, ON	11:00 on July 13 th , 2022 – 05:00 on July 22 nd , 2022
Southbound	42 Fifth Street, Midland, ON	06:00 on July 22 nd , 2022 – 04:00 on July 27 th , 2022

1.2 Traffic Trailer

The traffic trailer used was model ATS-3 as shown in Figure 1. The traffic trailer is set to show the speed of the approaching vehicle and display short messages depending on the speed. The data is collected and grouped into one-hour intervals.



Figure 1 - Traffic Trailer

2.0 Speed Summary

The posted speed limit on Fifth St is 50 km/h; however, generally it is accepted that vehicles that are travelling up to 10 km/h above the posted speed limit are not considered to be speeding. Table 2 shows an overall speed summary of the data collected for northbound and southbound directions.

Table 2- Speed Summary

Direction	Average Speed (km/h)	85 th Percentile Speed (km/h)	Minimum Speed (km/h)	Maximum Speed (km/h)
Northbound	41.76	52.04	10.00	87.00
Southbound	33.59	47.02	10.00	93.00

2.1 Northbound Speed Analysis

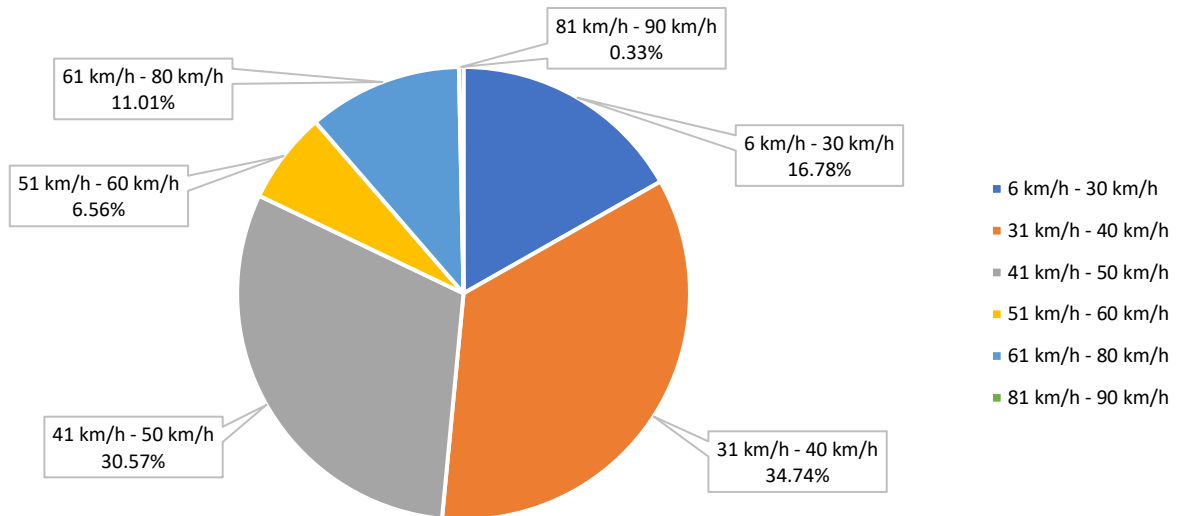


Figure 2- Total Volume Breakdown Based on Speed per Hour Intervals (Northbound)

Figure 2 above shows that 82.09% of vehicles were travelling below the posted speed limit, 6.56% of vehicles were travelling between 51-60 km/h, and 11.34% of vehicles were travelling above 60 km/h. Considering the accepted speed limit is 10 km/h over the posted speed limit, a total of 88.66% of vehicles were travelling within the accepted speed limit in the northbound direction.

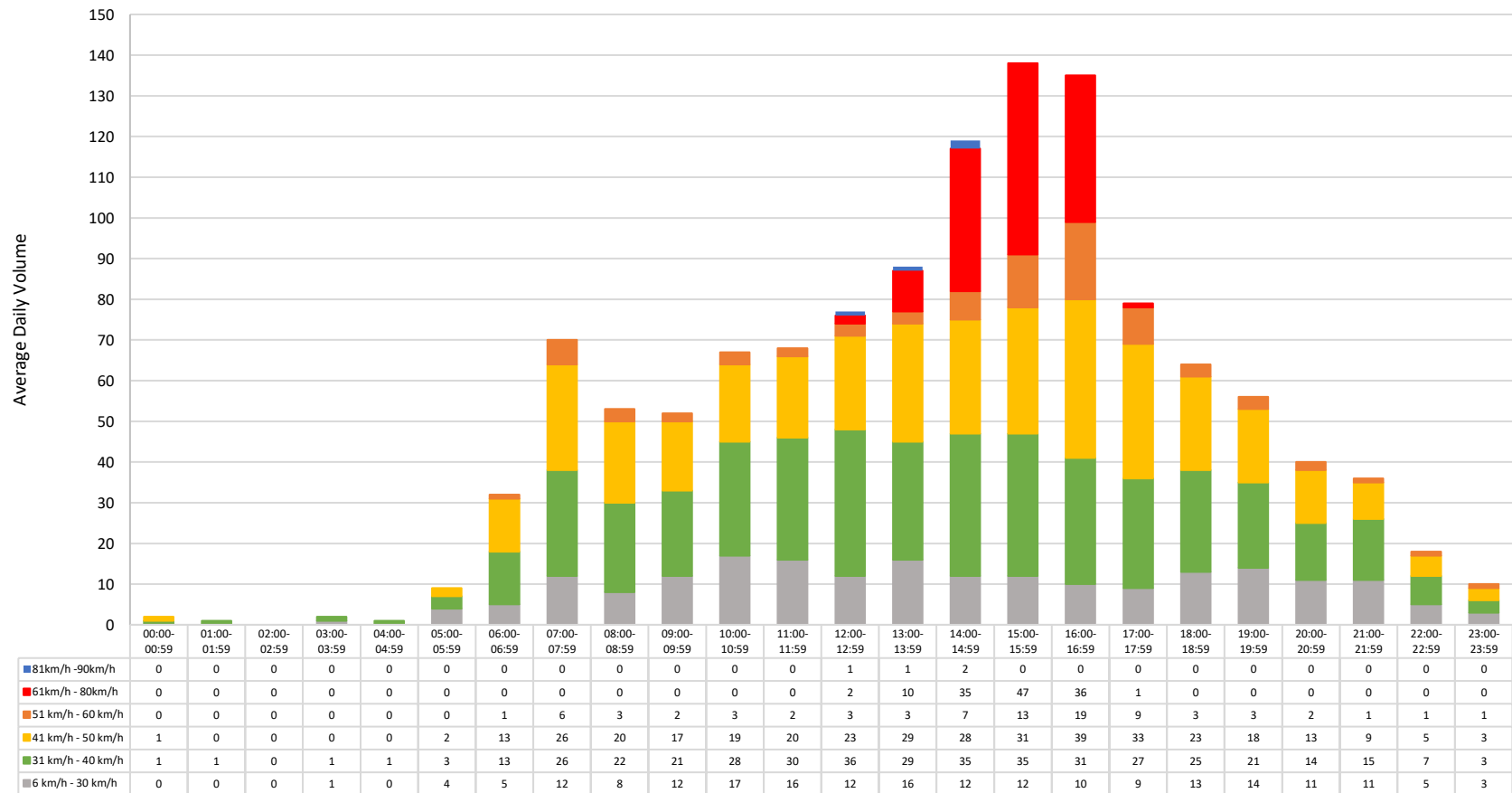


Figure 3 - Traffic Volume Speeds for Each Hour on Weekdays (Northbound)

Figure 3 above is the graph used to determine the time when most speeding occurs on weekdays. Generally, the data shows that speeds formed a curve as traffic volumes increased throughout the day from 06:00 – 06:59 until it reached its peak at 15:00 – 15:59 and begins to decline. The largest volumes of traffic traveling at speeds beyond the acceptable limit were recorded between 14:00 – 16:59.

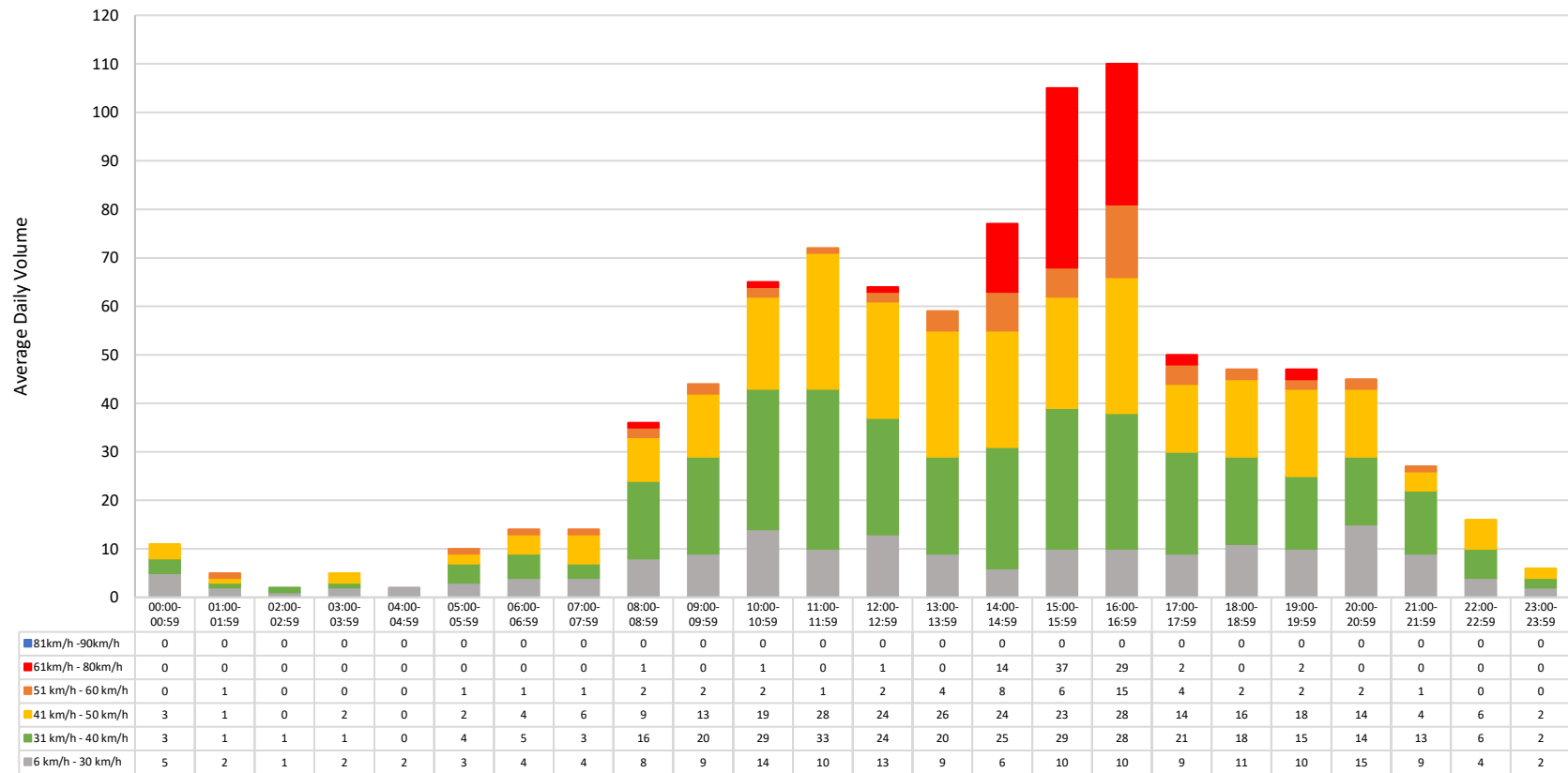


Figure 4 - Traffic Volume Speeds for Each Hour on Weekends (Northbound)

Figure 4 above is the graph used to determine the time when most speeding occurs on weekends. Generally, the data shows that speeds formed a curve as traffic volumes increased throughout the day with a spike at 08:00 – 08:59. It peaks at 11:00 – 11:59, begins to decline and peaks again at 16:00 – 16:59. Speeds greater than the speed limit were not recorded between 22:00 – 00:50 and 02:00 – 04:59. The largest volumes of traffic traveling at speeds beyond the acceptable limit were recorded from 14:00 - 16:59.

2.2 Southbound Speed Analysis

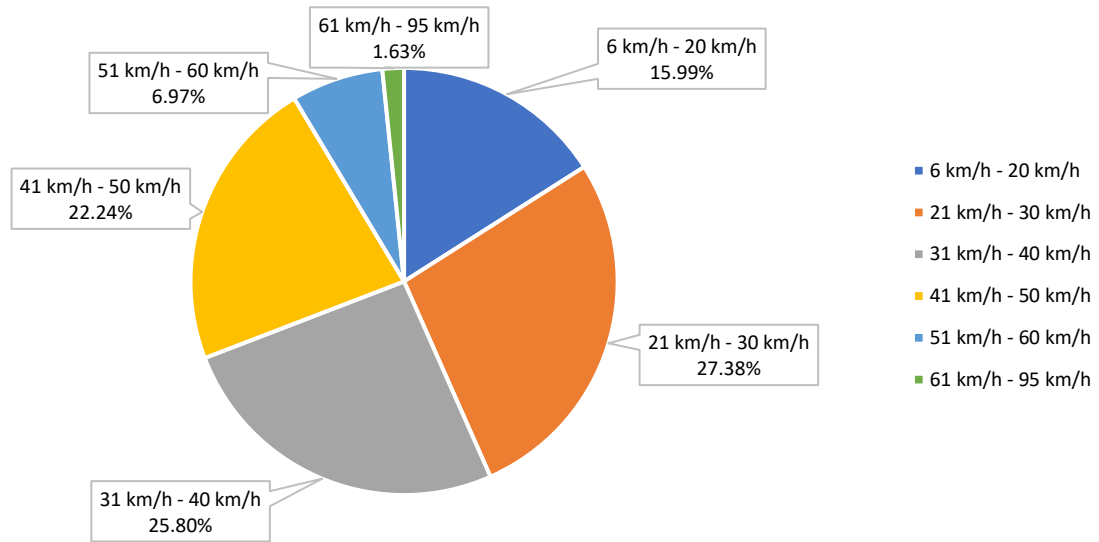


Figure 5 - Total Volume Breakdown Based on Speed per Hour Intervals (Southbound)

Figure 5 shows that 91.40% of the vehicles were travelling below the posted speed limit, 6.79% of vehicles were travelling between 51-60 km/h, and 1.63% of vehicles were travelling above 60 km/h. Considering the accepted speed limit is 10 km/h over the posted speed limit, a total of 98.37% of vehicles were driving within the accepted speed limit.

Due to the radar picking up cars from the stop light turning from Harbourview Dr, the volume and speed values may not be accurate for the southbound direction. The speeds are concentrated on turning speeds and the total volume for a similar collection period is double that of the northbound direction.

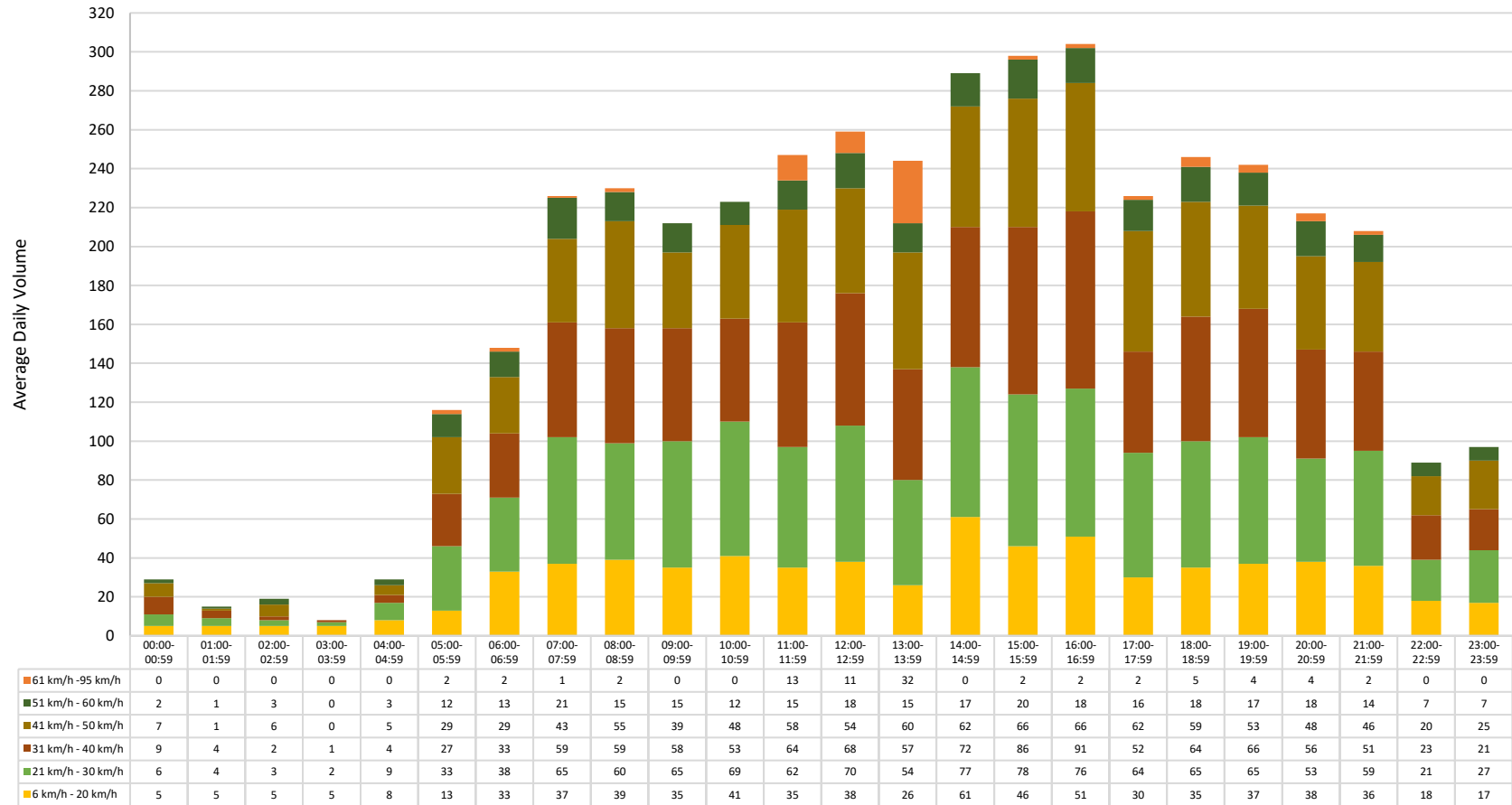


Figure 6 - Traffic Volume Speeds for Each Hour on Weekdays (Southbound)

Figure 6 above is the graph used to determine the time when most speeding occurs on weekdays. The data does not have a definite curve shape but, traffic volumes increased throughout the day with a spike from 05:00 – 05:59 until it reached its peak at 16:00 – 16:59 and begins to decline. Speeds greater than the speed limit were recorded during every hour except 03:00 – 03:59. The largest volumes of traffic traveling at speeds beyond the acceptable limit were recorded from 11:00 - 13:59.

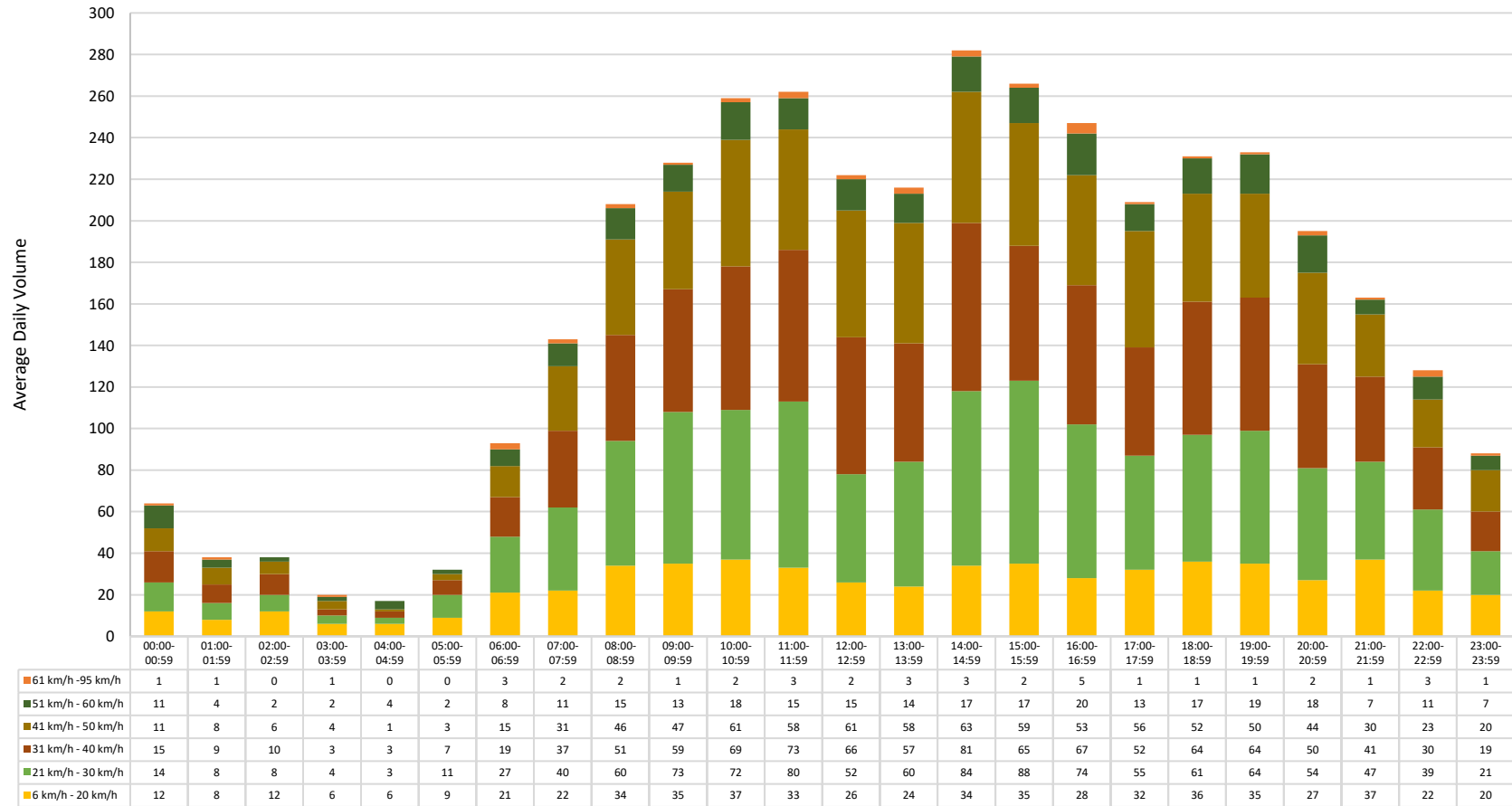


Figure 7 - Traffic Volume Speeds for Each Hour on Weekends (Southbound)

Figure 7 above is the graph used to determine the time when most speeding occurs on weekends. Generally, the data shows that speeds formed a curve as traffic volumes increased throughout the day from 05:00 – 05:59. It peaks at 14:00 – 14:59 and begins to decline. There is a slight decline from 12:00 – 13:59. The largest volume of traffic traveling at speeds beyond the acceptable limit were not recorded between 02:00 – 02:59 and 04:00 – 05:59.

3.0 Traffic Volume

Table 3 shows the average daily volume on Fifth St for northbound and southbound directions.

Table 3 - Volume Summary

Direction	Period	Average Daily Traffic Volume
Northbound	Weekday	1045
Northbound	Weekend	877
Southbound	Weekday	3332
Southbound	Weekend	3809

3.1 Northbound Volume by Hour

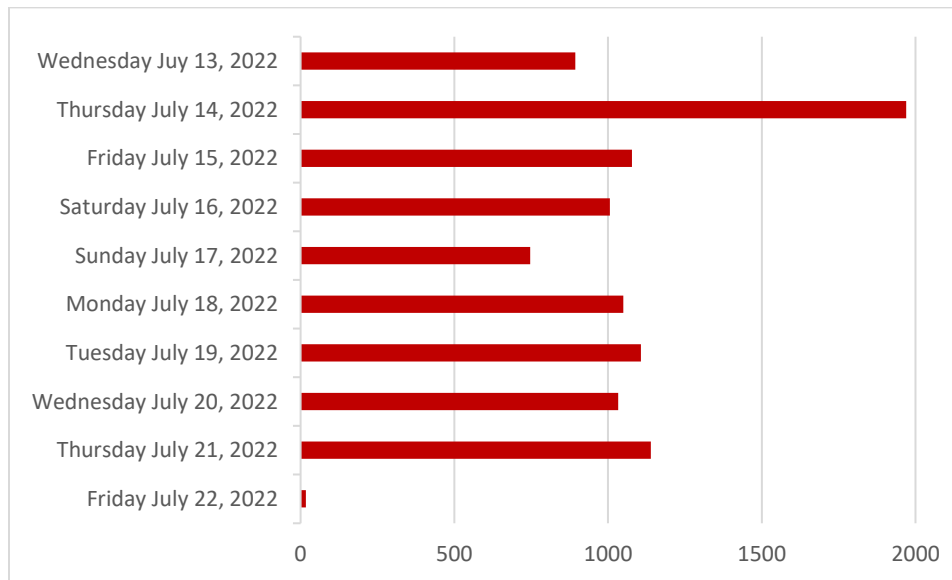


Figure 8 - Total Volume per Day (Northbound)

Figure 8 above shows the total volumes of each day data was collected in the northbound direction. Thursday July 14th had the largest traffic volume, while Sunday July 17th had the least discounting Friday July 22nd, whereby data was not collected for the full day. Generally, more traffic was recorded on weekdays than weekends.

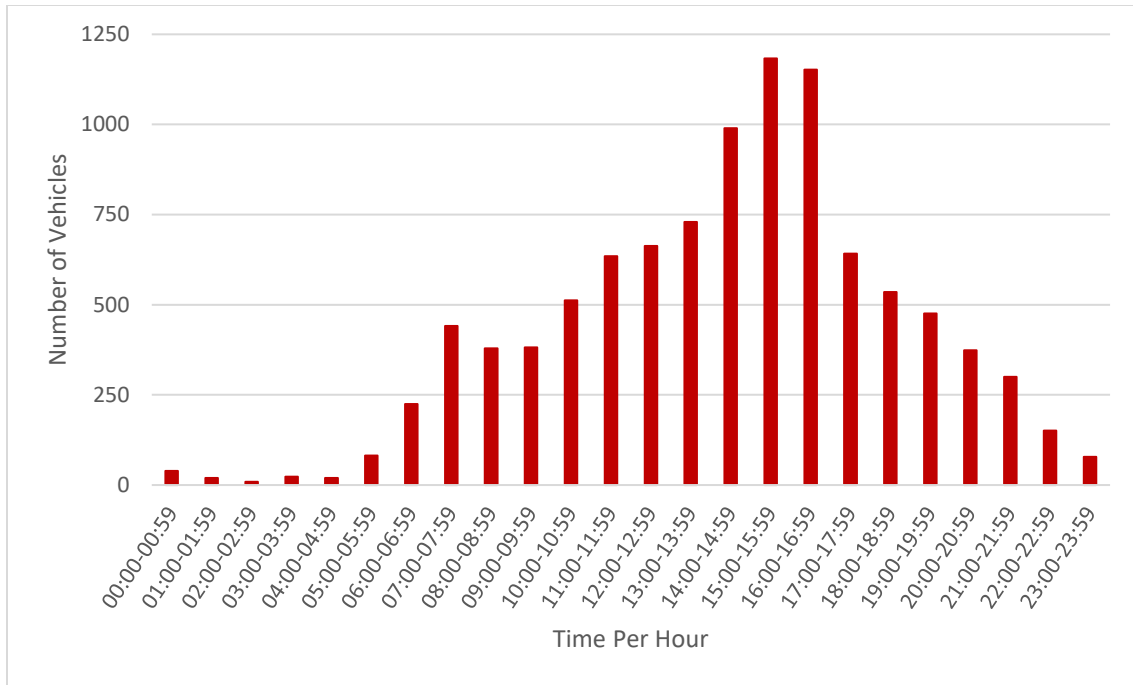


Figure 9 - Total Volume per Hour (Northbound)

As shown in Figure 9 above, the traffic volume forms a curve in which traffic flow is low at night and begins to increase at 06:00 – 06:59. Peak traffic volume occurs at 15:00 – 15:59 and it begins to decline into the night.

3.2 Southbound Volume by Hour

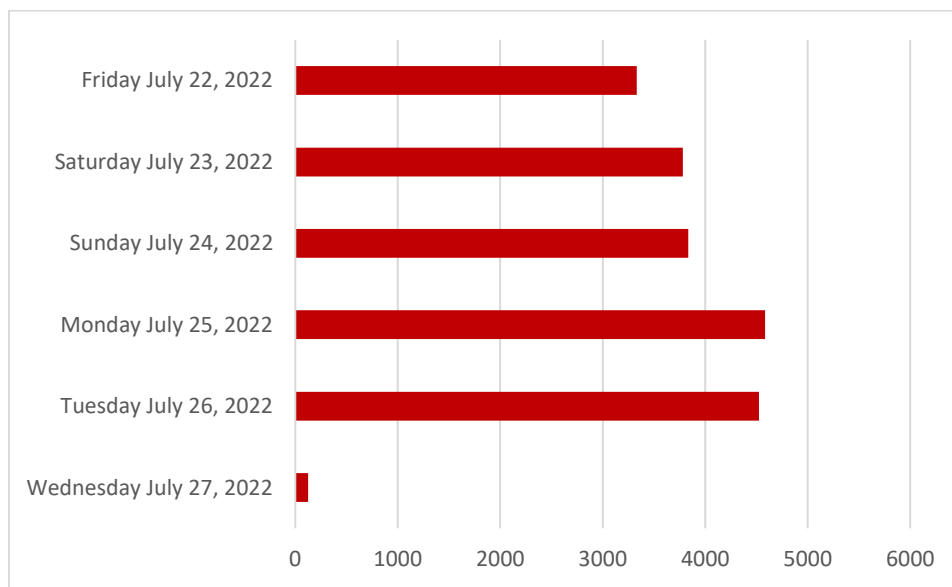


Figure 10 - Total Volume per Day (Southbound)

Figure 10 above shows the daily total traffic volumes in the southbound direction. Monday July 25th had the largest traffic volume. Generally, more traffic was recorded on weekdays than weekends.

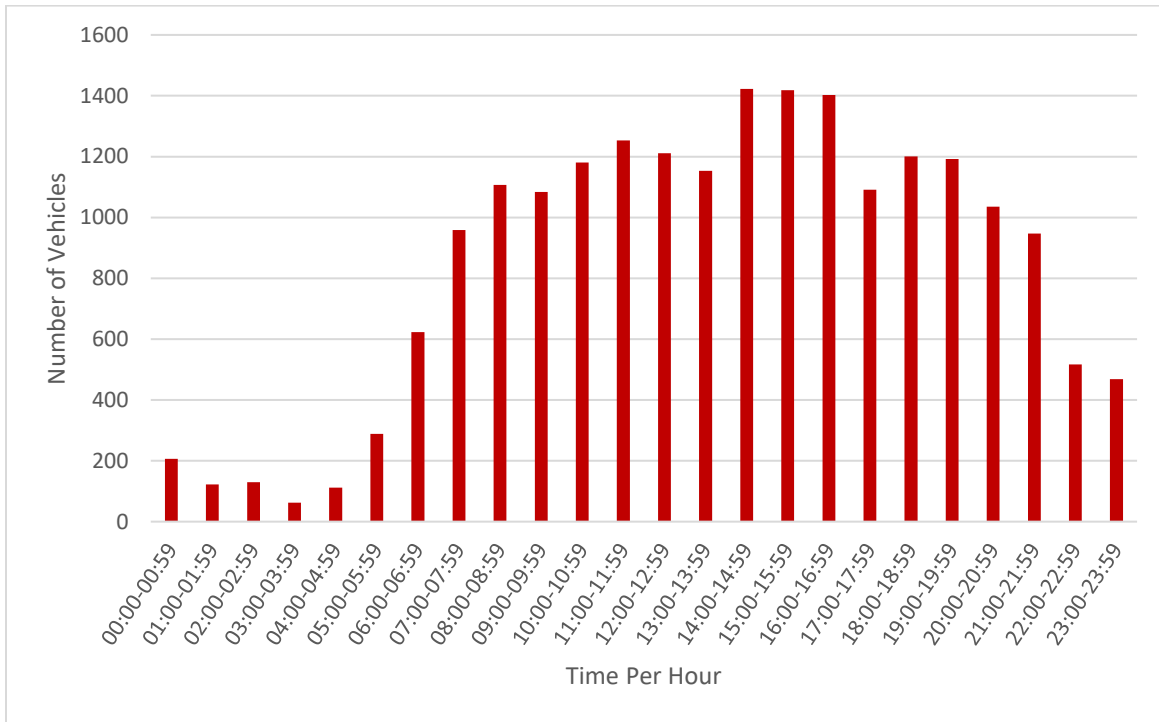


Figure 11 - Total Volume per Hour (Southbound)

The total volumes of traffic at different hours of the day in the southbound direction are shown in Figure 11 above. The data does not have a definite curve shape but, traffic volumes increased throughout the day from 05:00 – 05:59 until it reached its peak at 14:00 – 14:59.

4.0 Conclusion

The traffic study conducted on Fifth St for both northbound and southbound directions was carried out from July 13th to July 27th, 2022. From the speed analysis, it was determined that 88.66% and 98.37% of vehicles were travelling within the accepted speed limit for the northbound and southbound directions, respectively. In addition, from the volume analysis, it was determined that traffic spikes were at 05:00 – 06:59 and peak traffic was around 14:00 – 16:59 in both directions

Due to the radar picking up cars from the stop light turning from Harbourview Dr, the volume and speed values may not be accurate for the southbound direction.