

Traffic Data Analysis

Fifth Street

Northbound and Southbound



Town of Midland

Engineering Department

Aug 19th, 2019

1.0 Introduction

A traffic count was conducted from August 13th, 2019 to August 19th, 2019 on Fifth Street for both northbound and southbound directions. Vehicle speeds and traffic volume were collected by a traffic trailer (model ATS-3). The purpose is to see if there is any speeding issue and 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. The trailer was placed close to the Vindin Street and Fifth Street intersection to see if there are any vehicles speeding through the intersection to avoid waiting for the traffic signals. Table 1 below shows the location of the traffic trailer and data collection period.

Table 1. Locations of Traffic Trailer

Direction	Location	Period
Northbound	28 Fifth St, Midland, ON	9:00am on Aug 13 th , 2019 –9:00am on Aug 15 th , 2019
Southbound	24 Fifth St, Midland, ON	12:00pm on Aug 16 th , 2019 –9:00am on Aug 19 th , 2019

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 data into one-hour intervals.



Figure 1. Traffic Trailer

2.0 Speed Summary

The posted speed limit on Fifth Street is 50km/h; however, generally it is accepted that vehicles that are travelling up to 10km/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)	Minimum Speed (km/h)	Maximum Speed(km/h)
Northbound	36.8	10	69
Southbound	34.8	10	74

2.1 Northbound Speed Analysis

Figure 2 and 3 below show the speed summary for the northbound traffic.

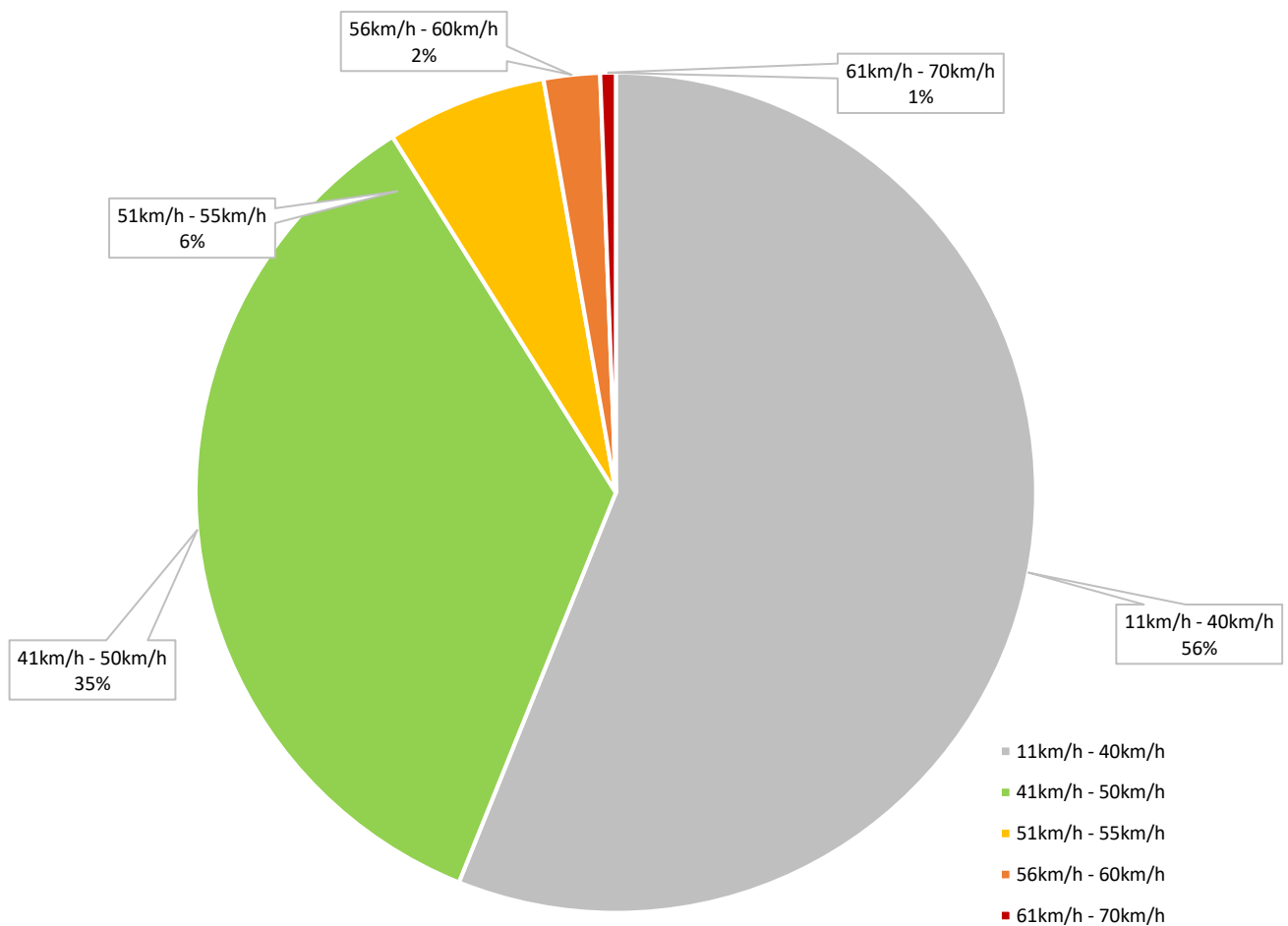


Figure 2. Fifth St. Northbound

Figure 2 shows that 91% of vehicles were travelling below the posted speed limit and 8% of vehicles were travelling between 51-60 km/h. Considering the accepted speed limit is 10km/h over the posted speed limit, a total of 99% of vehicles were travelling within the accepted speed limit in the northbound direction.

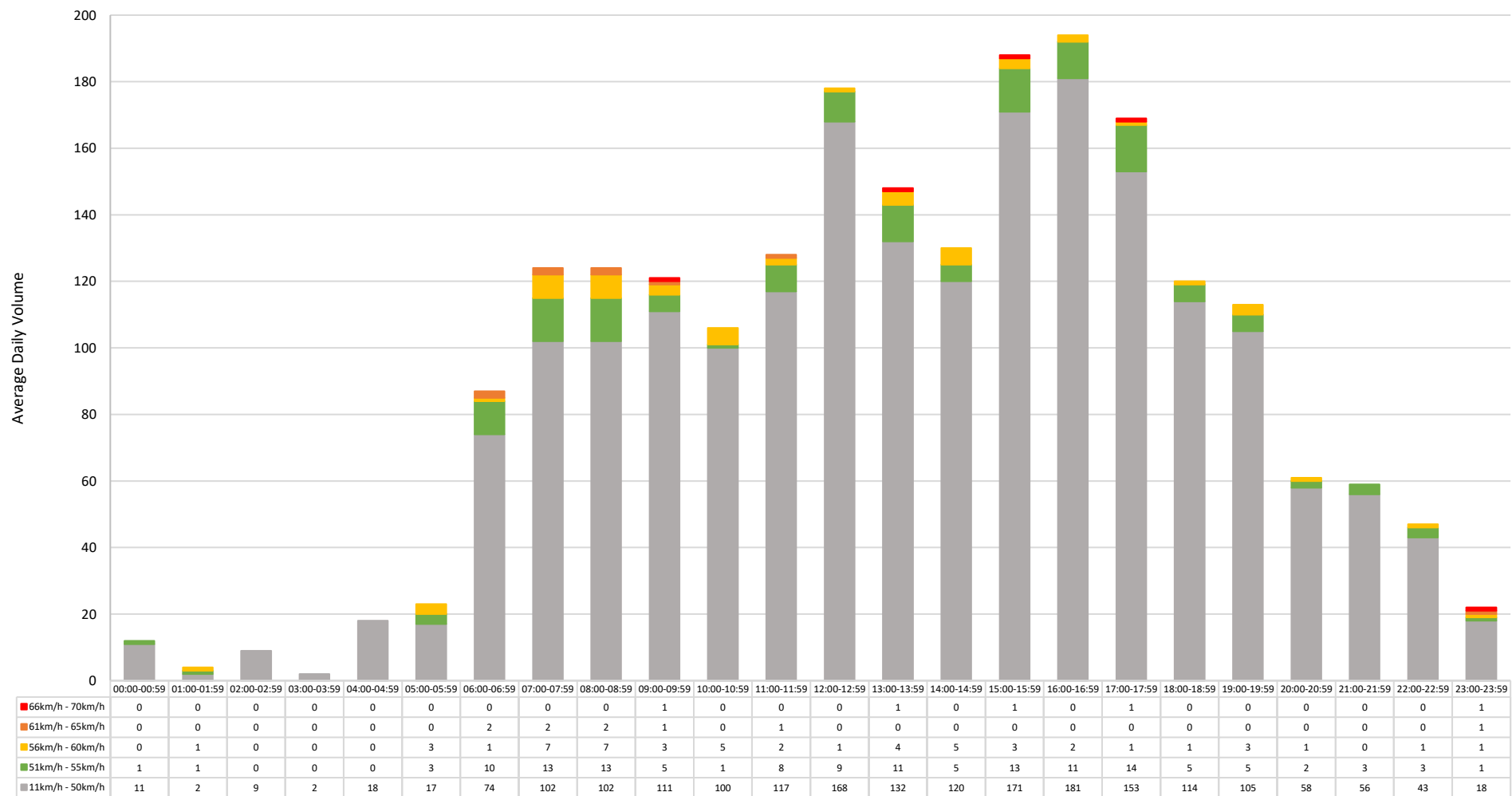


Figure 3. Speed by Hour Analysis for Northbound

Figure 3 is the speed by hour graph used to determine the time where most speeding occurs. This graph highlights that although speeding peaked from 6:00am to 10:00pm, there are no speeding concerns throughout the collection period for the northbound direction.

2.2 Southbound Speed Analysis

Figure 4 to 6 are the speed summary for the southbound traffic.

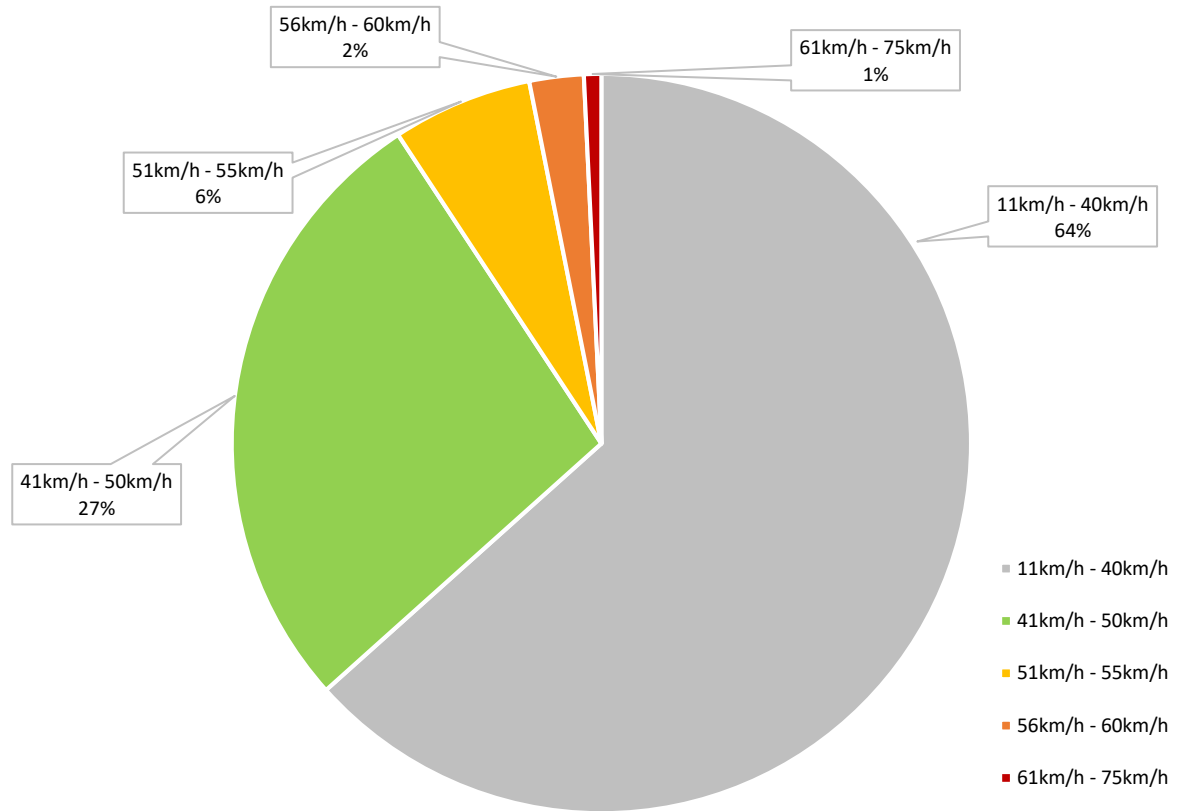


Figure 4. Fifth St. Southbound

Figure 4 shows that 91% of the vehicles were travelling below the posted speed limit and 8% of vehicles were travelling between 51-60 km/h. Considering the accepted speed limit is 10km/h over the posted speed limit, a total of 99% of vehicles were travelling within the accepted speed limit.

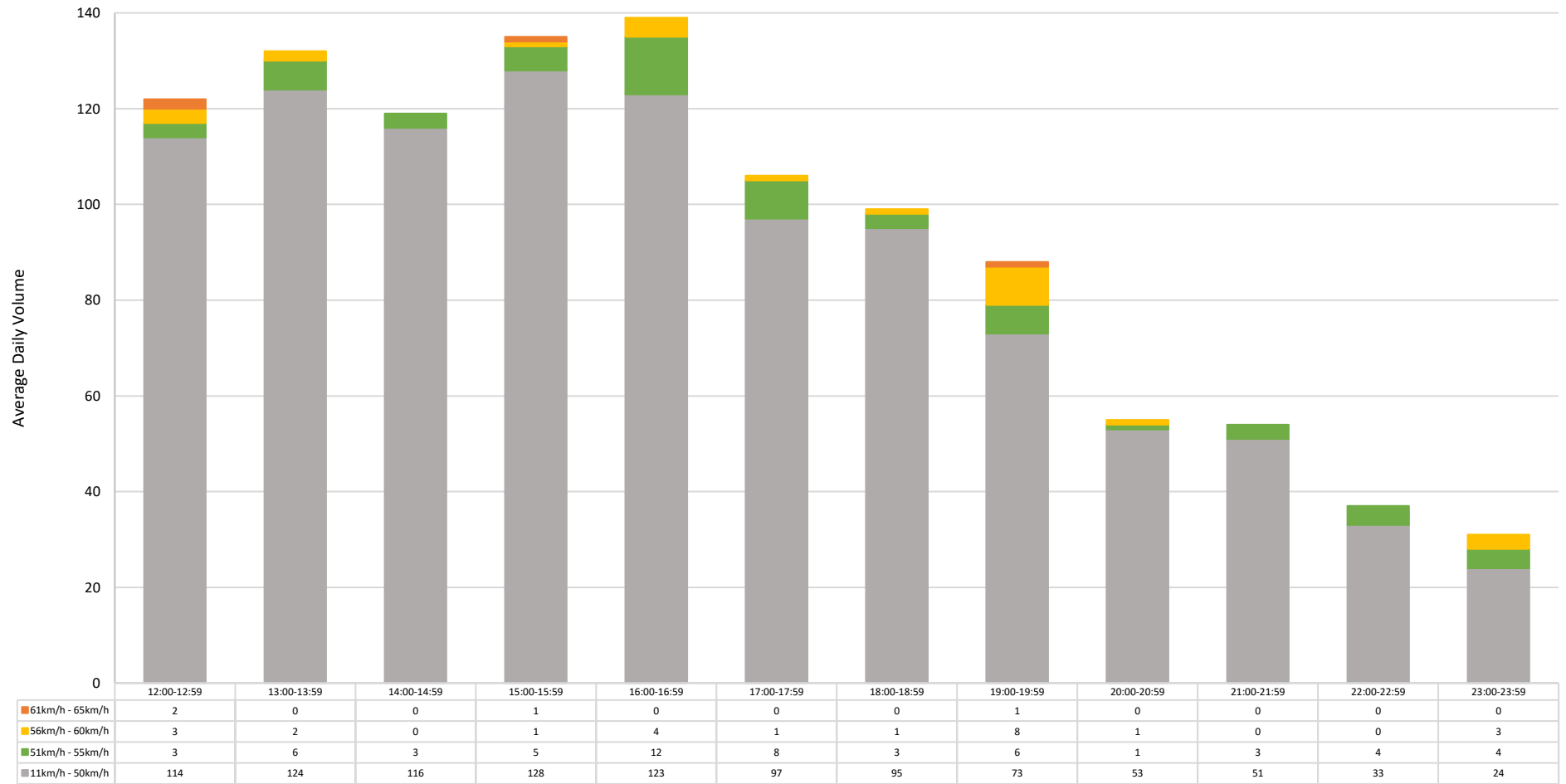


Figure 5. Speed by Hour Analysis for Southbound (Aug 16th, 2019)

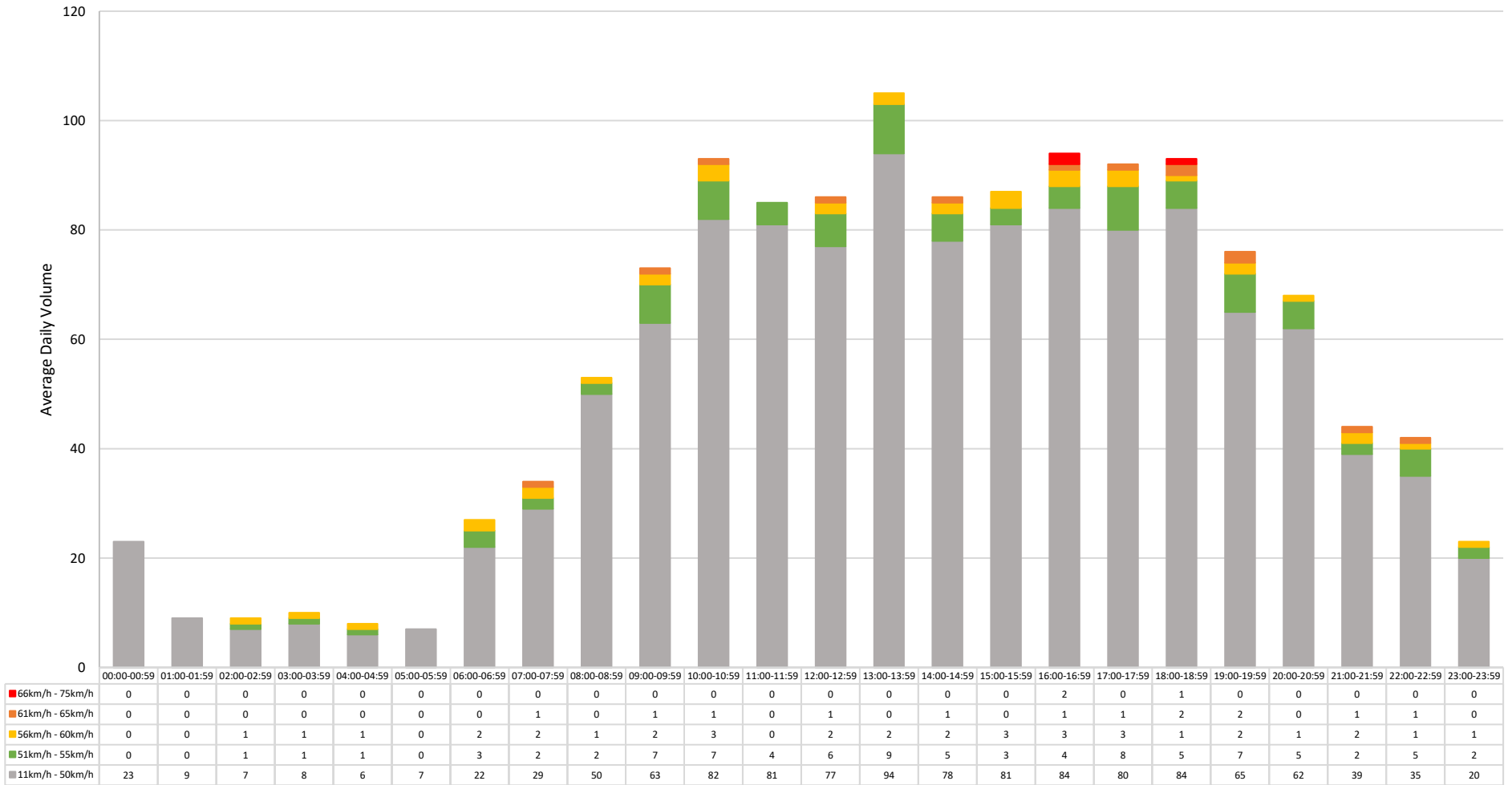


Figure 6. Speed by Hour Analysis for Southbound (Aug 17th to Aug 18th, 2019)

Figure 5 and 6 are the speed by hour graph used to determine the time where most speeding occurs. The graphs highlight that there were more vehicles speeding in the afternoon on the weekend (Aug 17th to Aug 18th) than on a weekday. It should be noted that due to the time of day the trailer was relocated to the southbound direction it was unable to collect data during the morning of August 16th. Based on the low volume of speeding that occurred, there are no speeding concerns in the southbound direction.

Furthermore, the traffic trailer detected that 33% of vehicles slowed down in the northbound direction and 43% slowed down in the southbound direction when approaching the trailer. These percentages show that the trailer is influencing traffic calming.

3.0 Traffic Volume

Table 3 shows the average daily volume on Fifth Street for northbound and southbound directions. Only the days when the traffic trailer was placed there for the full 24 hours are used in traffic volume analysis. As the traffic trailer was not placed in the southbound direction for a full weekday, only weekend volume is included in the traffic volume analysis.

Table 3. Volume Summary

Direction	Period	Average Daily Traffic Volume
Northbound	Aug 14 th (Wednesday)	1,093
Southbound	Aug 17 th to Aug 18 th (Saturday to Sunday)	1,263

3.1 Northbound Volume by Hour

The data collected for the full day (Aug 14th) is used to analyze the average traffic volume at different times of a day (Figure 7). From the graph, Fifth Street has peak traffic during the typical evening commute time.

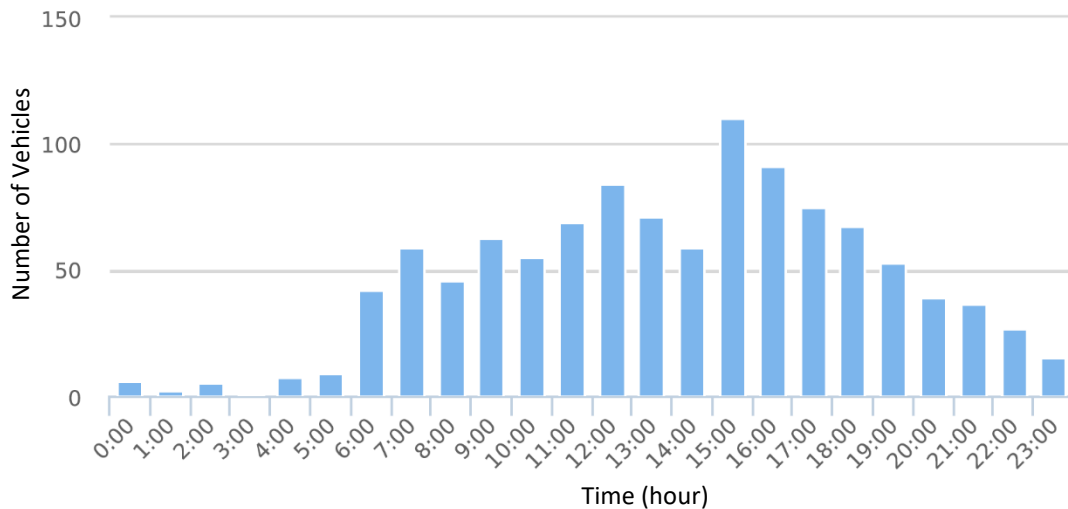


Figure 7. Average Volume by Hour from Aug 14th (Northbound)

3.2 Southbound Volume by Hour

The data collected on August 16th is used to analyze the average traffic volume at different times of a day (Figure 8). From the data collected, Fifth Street had peak traffic during the typical evening commute time on the weekday in the southbound direction. Again, it should be noted that due to the time of date that the trailer was relocated to the southbound direction it was unable to collect data for the morning on August 16th.

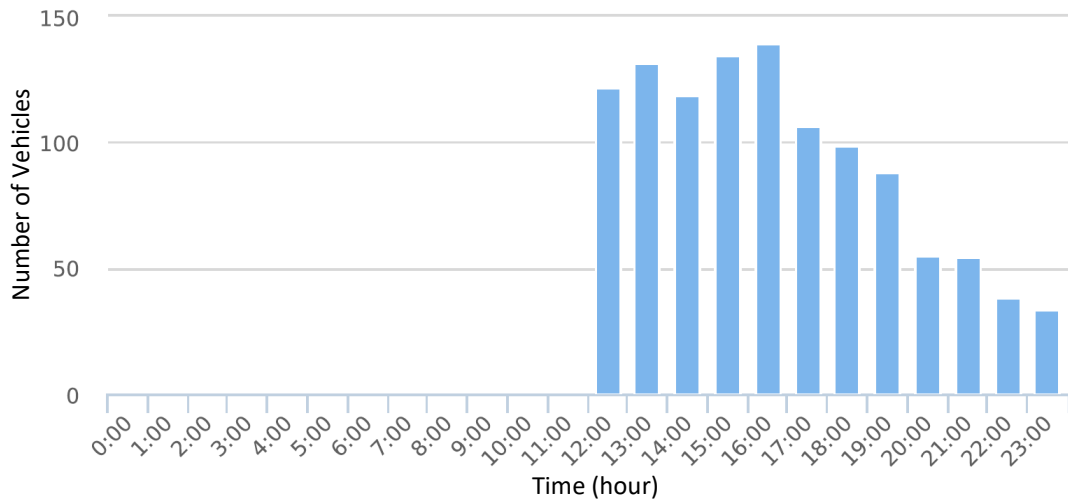


Figure 8. Volume by Hour on Aug 16th (Southbound)

The data collected from August 17th to August 18th (weekend) is used to analyze the average traffic volume at different times of the day as shown in Figure 9. From the graph, the traffic on the weekend in the southbound direction has a peak volume between 1pm and 2pm.

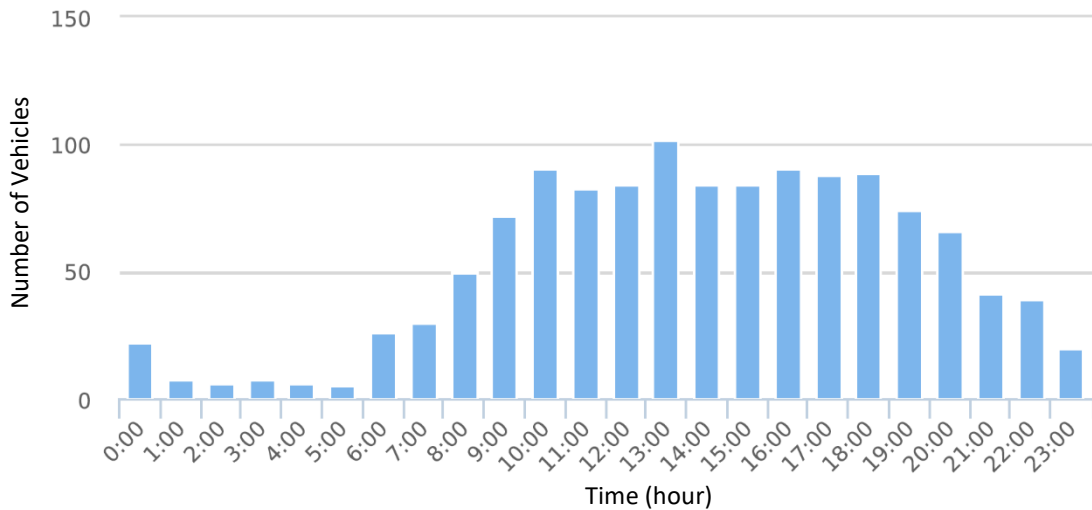


Figure 9. Average Volume by Hour on August 17th to August 18th (Southbound)

4.0 Conclusion

The traffic study conducted on Fifth Street for both northbound and southbound directions was successfully carried out from August 13th, 2019 to August 19th, 2019. From the speed analysis, it was determined that both directions have 99% of vehicles travelling within the accepted speed limit. In addition, from the volume analysis, it was determined that the peak traffic hours were at the typical evening commute time for northbound direction on a weekday. It was also determined that the peak traffic hours were at typical evening commute time in the southbound direction on a weekday however no data was collected during the typical morning commute time. The southbound traffic was monitored over the weekend and it was noted that it has peak volume between 1pm and 2pm.