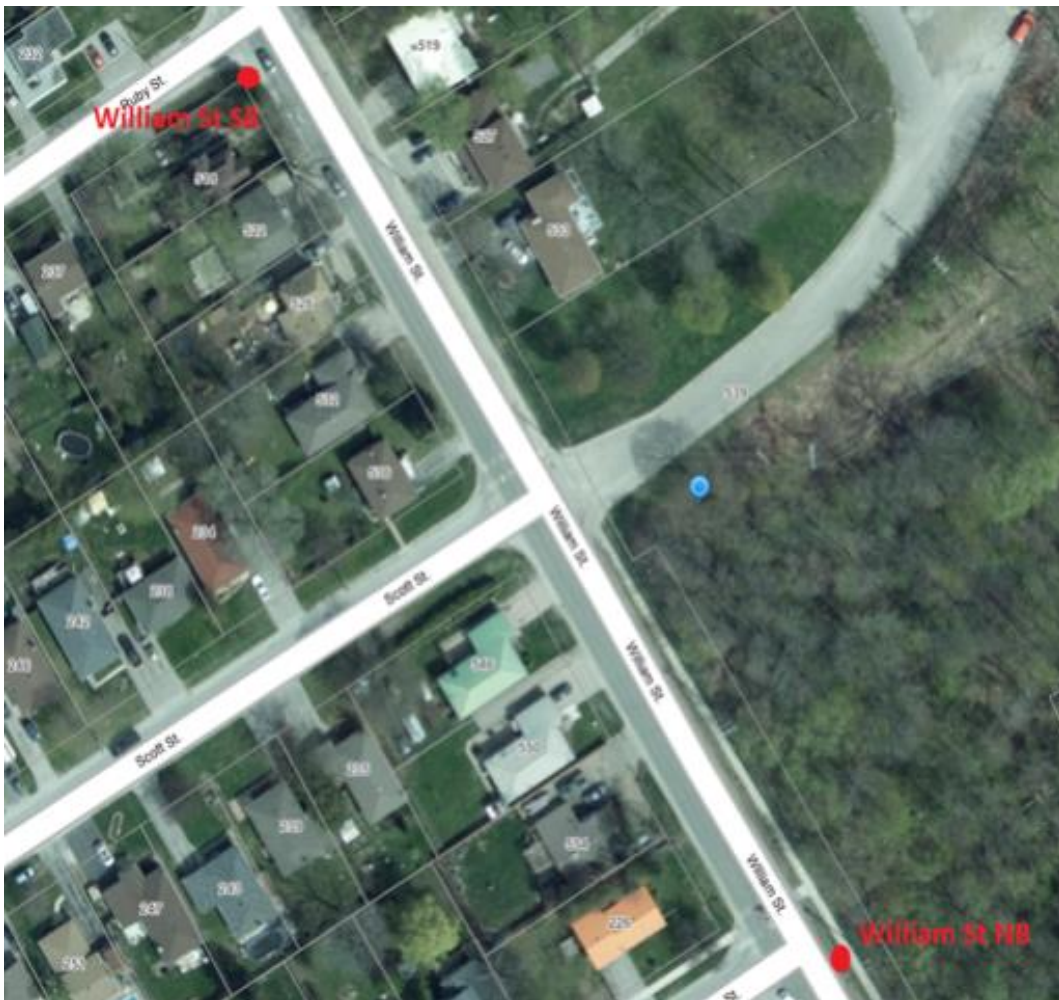


Traffic Data Analysis

William Street

Northbound and Southbound



Town of Midland

Engineering Department

June 1st, 2022

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1.0 Introduction

A traffic count was conducted from May 19th, 2022, to May 31st, 2022, on William 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 William 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	572 William Street, Midland, ON	May 19 th , 2022 – May 25 th , 2022
Southbound	518 William Street, Midland, ON	May 25 th , 2022 – May 31 st , 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 William Street 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	51.46	60.35	10.00	105.00
Southbound	52.46	59.70	10.00	94.00

2.1 Northbound Speed Analysis

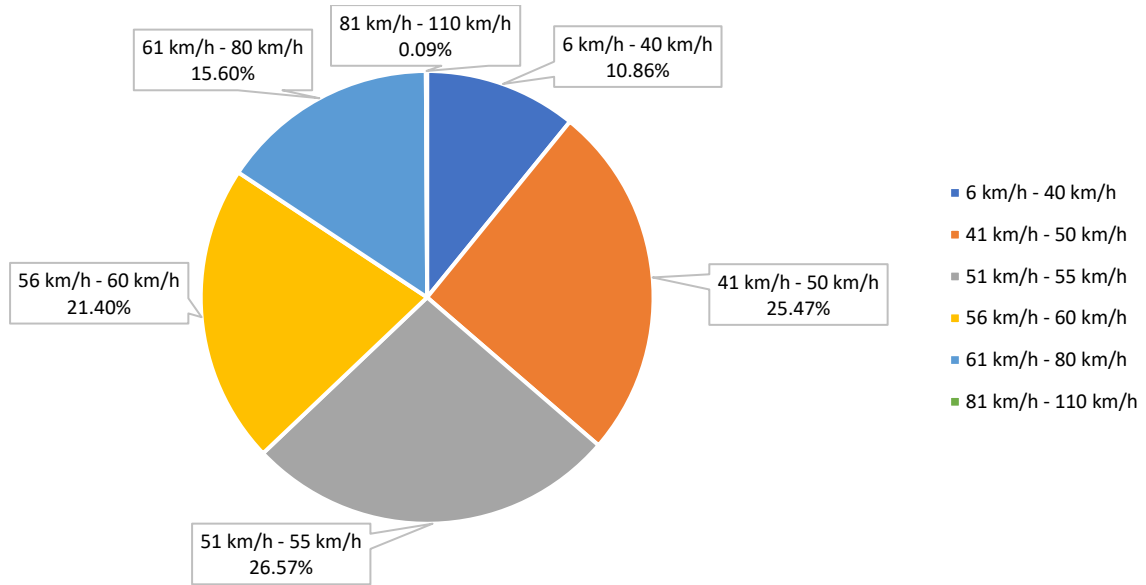


Figure 2- Total Volume Breakdown Based on Speed per Hour Intervals (Northbound)

Figure 2 above shows that 36.33% of vehicles were travelling below the posted speed limit, 47.97% of vehicles were travelling between 51-60 km/h, and 15.69% 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 84.30% of vehicles were travelling within the accepted speed limit in the northbound direction.

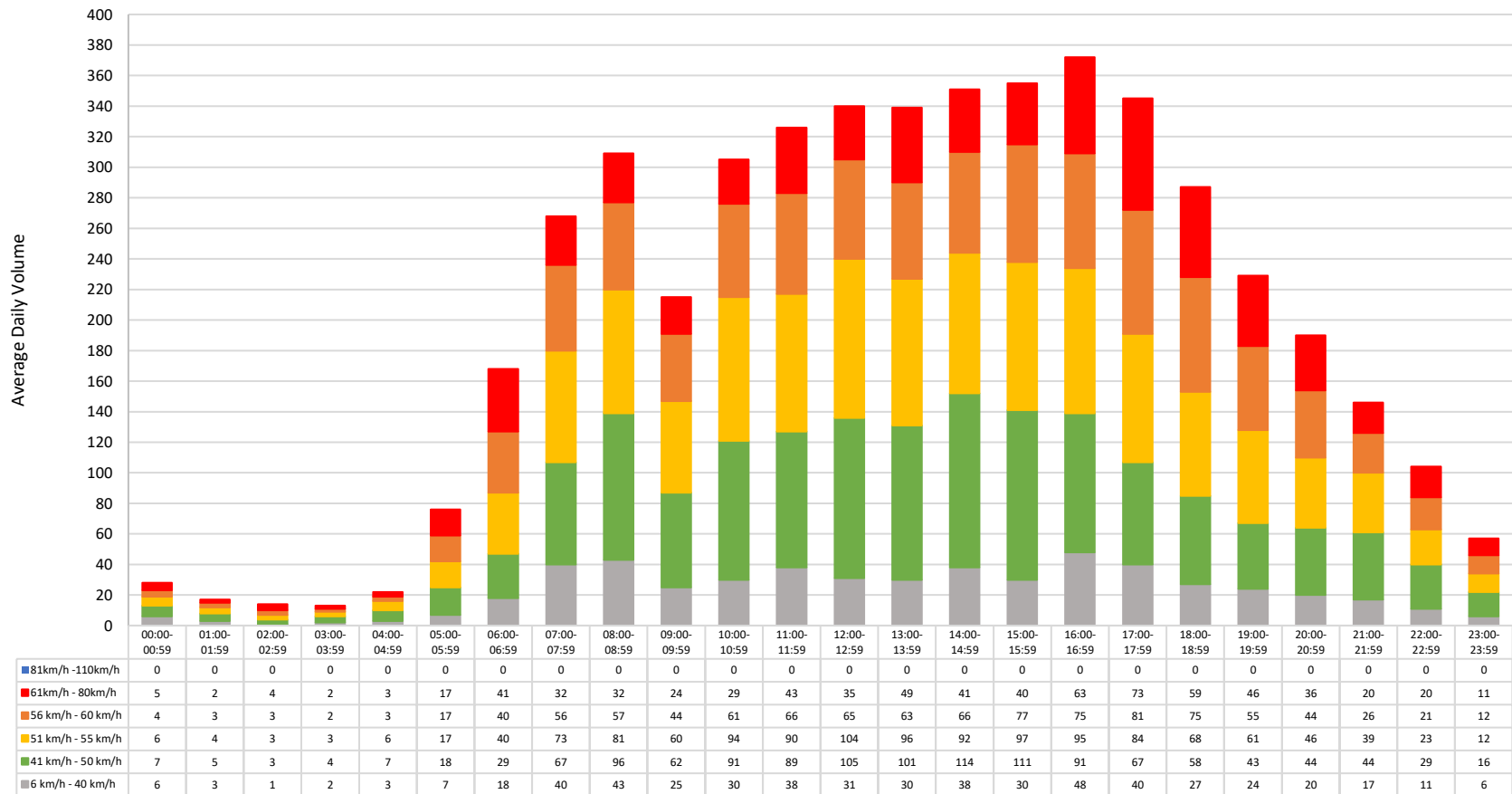


Figure 3 - Traffic Volume Speeds for Each Hour on Weekdays (Northbound)

Figure 3 above is the graph used to determine the time when most speeding occurs on weekdays (May 19th, May 20th, May 23rd, May 24th, May 25th). Generally, the data shows that speeds formed a curve as traffic volumes increased throughout the day with a spike from 06:00 – 06:59 until it reached its peak at 16:00 – 16:59 and begins to decline. Additionally, there is a slight volume decline at 09:00 – 09:59. Speeds greater than the speed limit were recorded in every hour. The largest volume of traffic traveling at speeds beyond the acceptable limit were recorded from 16:00 to 17:59.

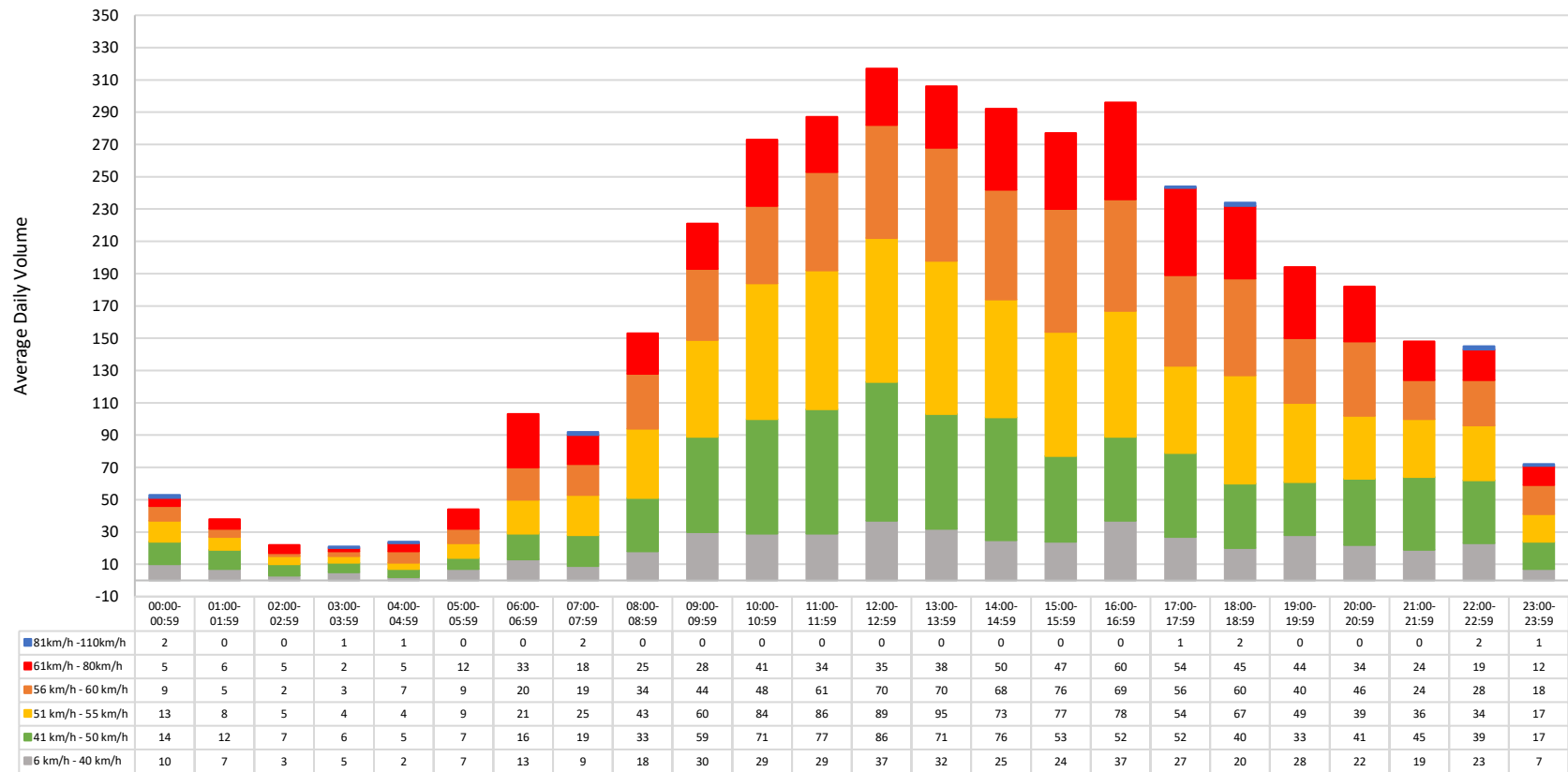


Figure 4 - Traffic Volume Speeds for Each Hour on Weekends (Northbound)

Figure 4 above is the graph used to determine the time when most speeding occurs on weekends (May 21st and May 22nd). Generally, the data shows that speeds formed a curve as traffic volumes increased throughout the day with a spike from 06:00 – 06:59. It peaks at 12:00 – 12:59, begins to decline and peaks again at 16:00 – 16:59. Speeds greater than the speed limit were recorded in every hour. The largest volume of traffic traveling at speeds beyond the acceptable limit were recorded from 16:00 to 17:59.

2.2 Southbound Speed Analysis

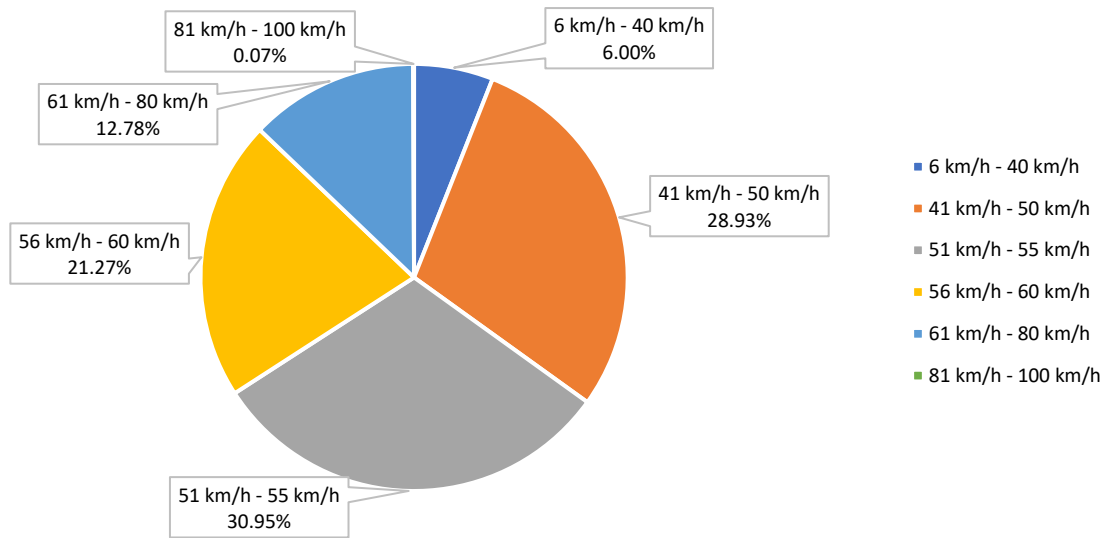


Figure 5 - Total Volume Breakdown Based on Speed per Hour Intervals (Southbound)

Figure 5 shows that 34.93% of the vehicles were travelling below the posted speed limit, 52.22% of vehicles were travelling between 51-60 km/h, and 12.85% 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 87.15% of vehicles were driving within the accepted speed limit.

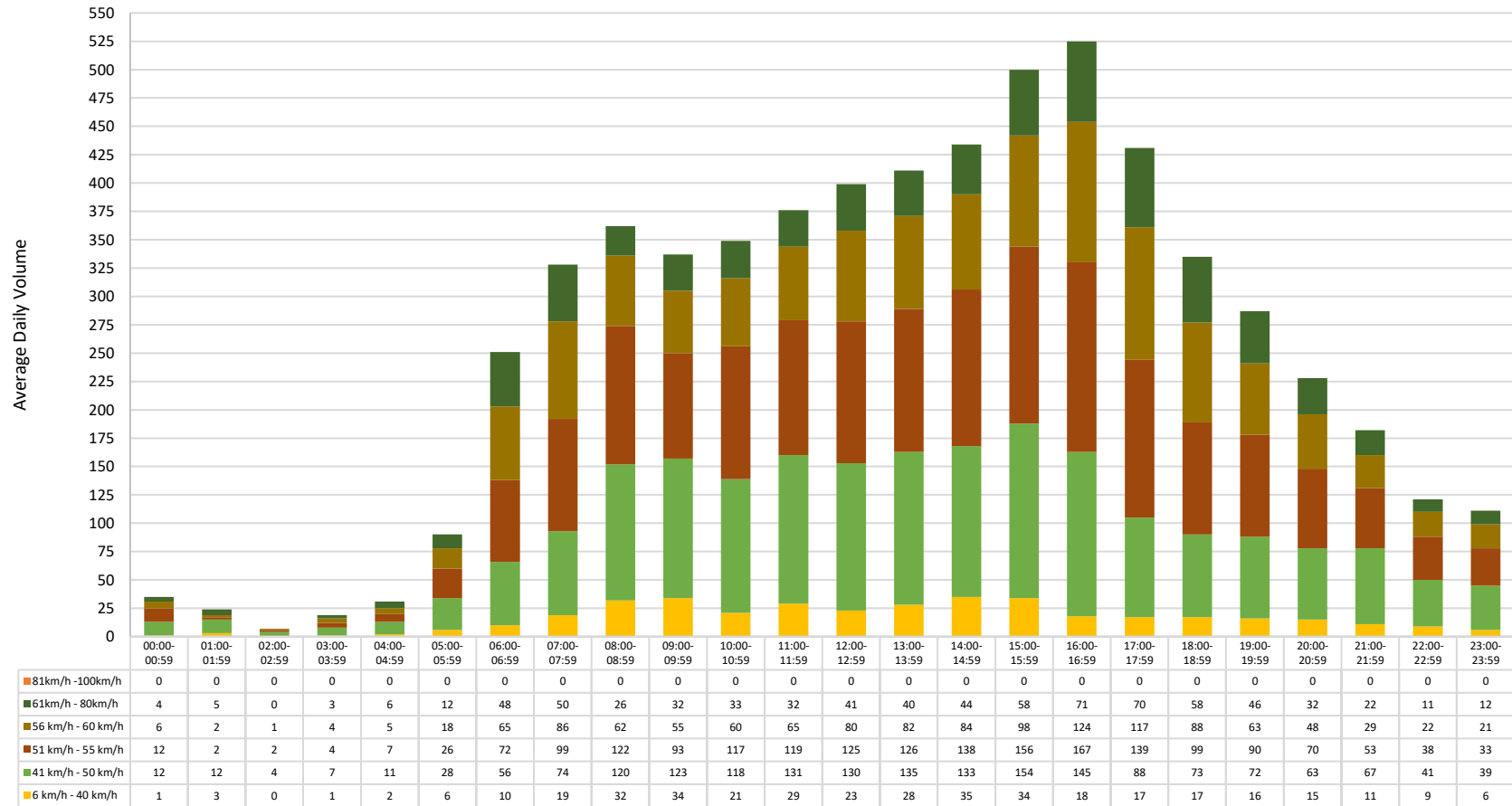


Figure 6 - Traffic Volume Speeds for Each Hour on Weekdays (Southbound)

Figure 6 above is the graph used to determine the time when most speeding occurs on weekdays (May 25th, May 26th, May 27th, May 30th, May 31st). Generally, the data shows that speeds formed a curve as traffic volumes increased throughout the day with a spike from 06:00 – 06:59 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. The largest volumes of traffic traveling at speeds beyond the acceptable limit were recorded from 16:00 to 17:59. On average, speeds greater than 80 km/h were not recorded during weekdays.

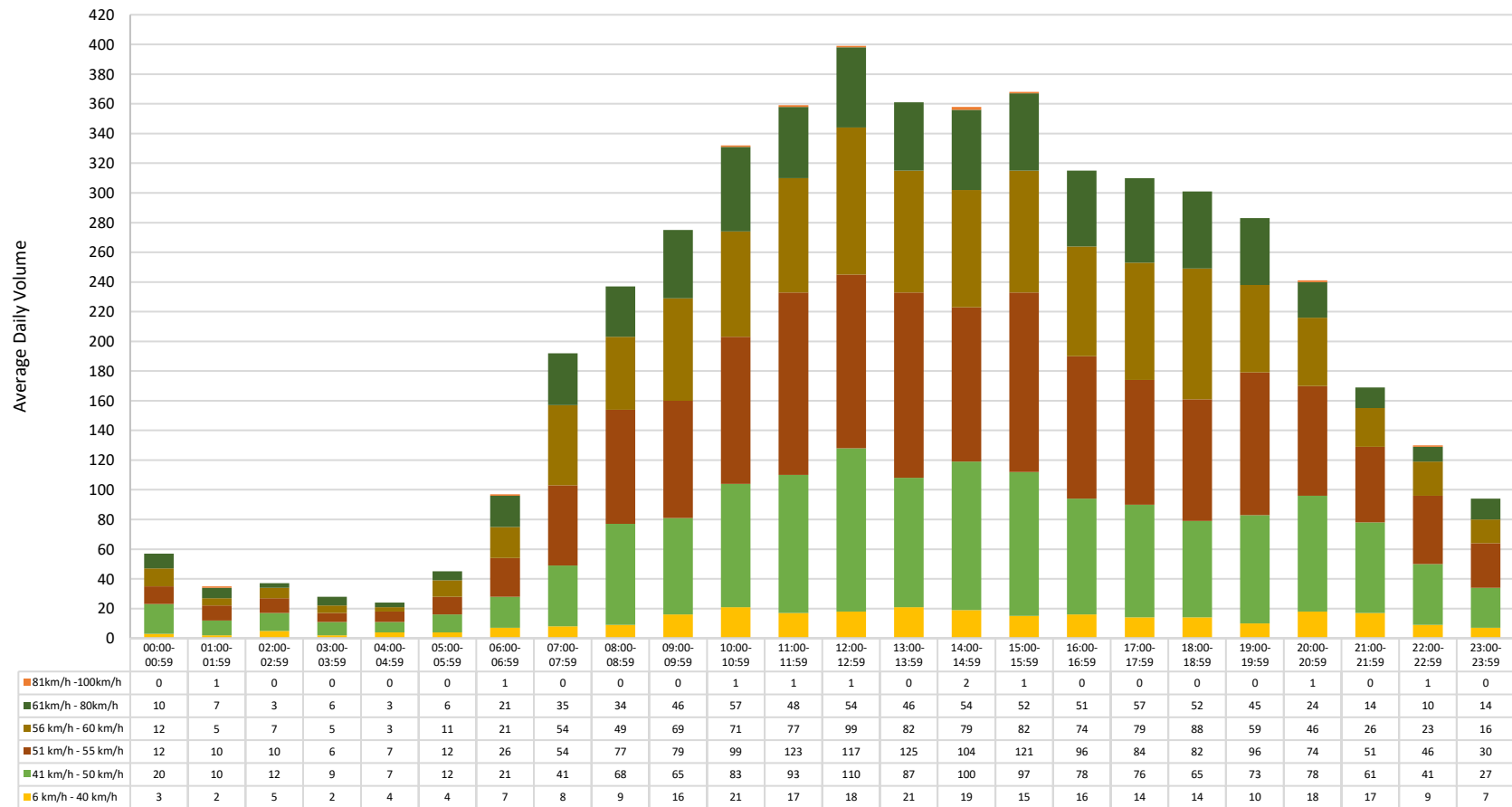


Figure 7 - Traffic Volume Speeds for Each Hour on Weekends (Southbound)

Figure 7 above is the graph used to determine the time when most speeding occurs on weekends (May 28th and May 29th). Generally, the data shows that speeds formed a curve as traffic volumes increased throughout the day with a spike from 06:00 – 06:59. It peaks at 12:00 – 12:59, begins to decline. The largest volume of traffic traveling at speeds beyond the acceptable limit were recorded between 10:00 to 11:59, 12:00 – 12:59, 14:00 – 14:59 and 17:00 – 17:59. On average, speeds greater than 80 km/h were recorded during nine time periods, mostly between 10:00 – 15:59.

3.0 Traffic Volume

Table 3 shows the average daily volume on William Street for northbound and southbound directions.

Table 3 - Volume Summary

Direction	Period	Average Daily Traffic Volume
Northbound	Weekday	3599
Northbound	Weekend	3954
Southbound	Weekday	6138
Southbound	Weekend	4964

3.1 Northbound Volume by Hour

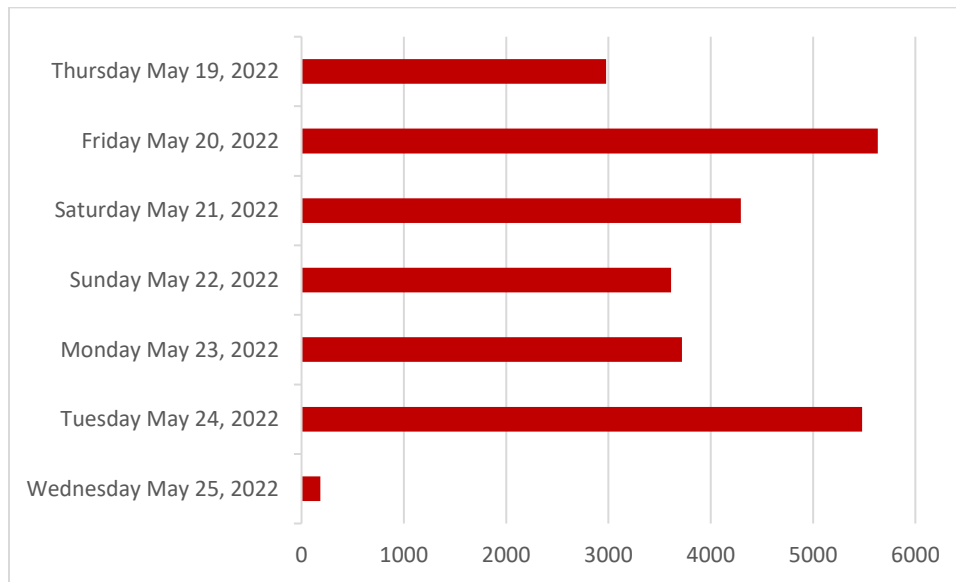


Figure 8 - Total Volume per Day (Northbound)

Figure 8 above shows the total volumes of each day data was collected in the northbound direction. Friday May 20th had the largest traffic volume, while Sunday May 22nd had the lowest discounting Wednesday May 25th, whereby data was not collected for the full day. Generally, more traffic was recorded on weekdays than weekends.

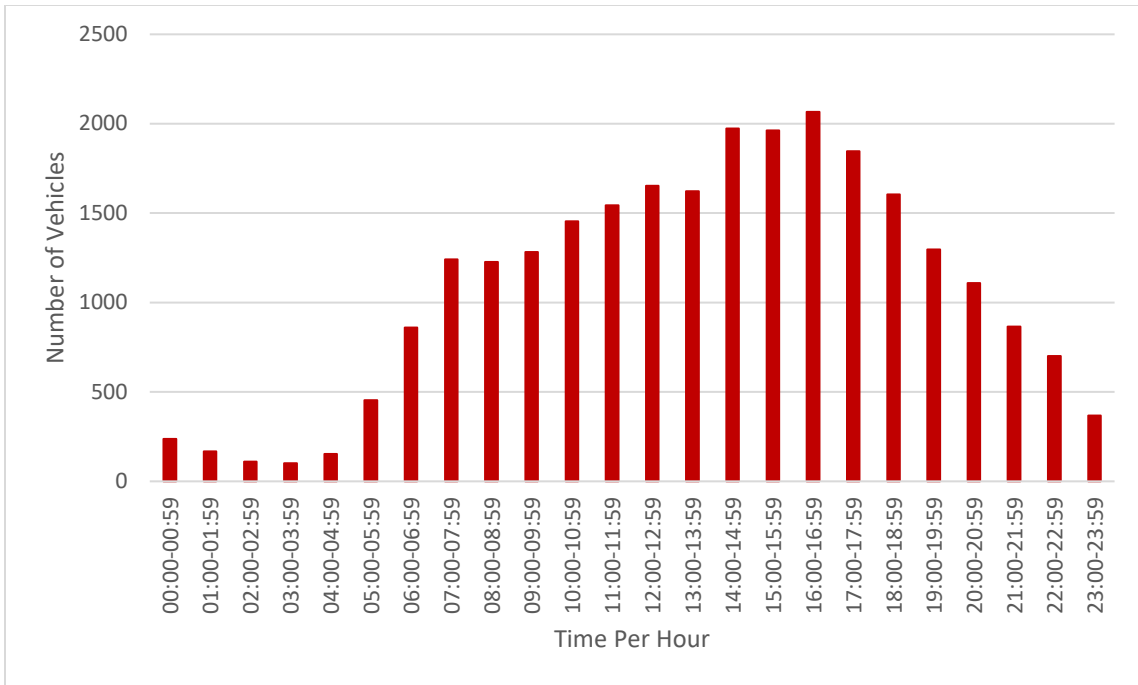


Figure 9 - Total Volume per Hour (Northbound)

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 05:00 – 05:59. Peak traffic volume occurs at 16:00 – 16:59 and it begins to decline into the night.

3.2 Southbound Volume by Hour

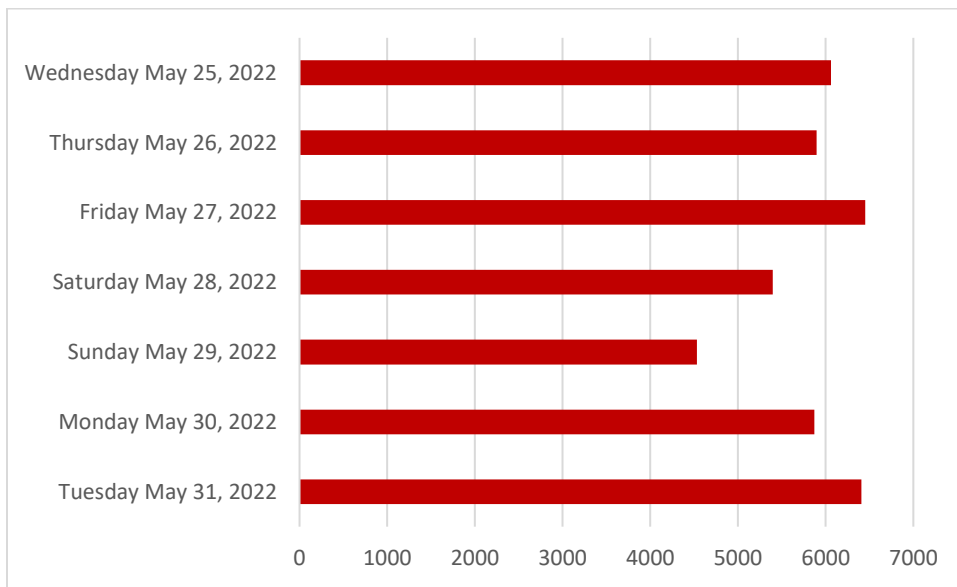


Figure 10 - Total Volume per Day (Southbound)

Figure 10 above shows the daily total traffic volumes in the southbound direction. Friday May 27th had the largest traffic volume, while Sunday May 29th had the lowest. Generally, more traffic was recorded on weekdays than weekends.

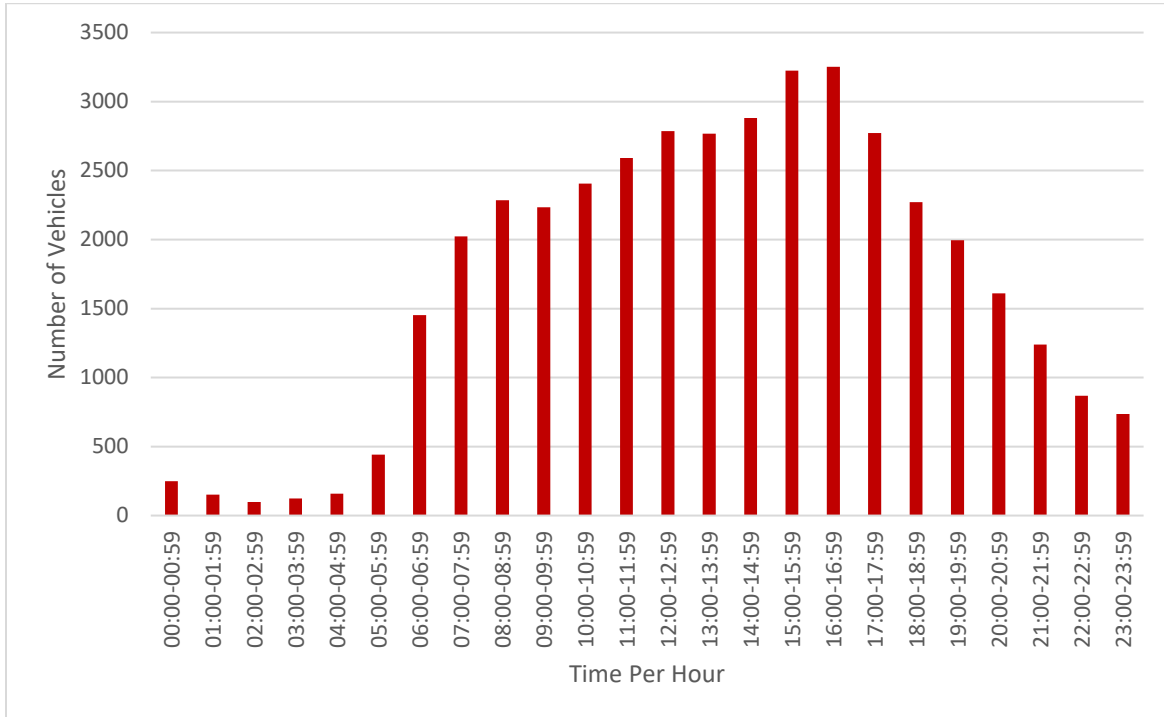


Figure 11 - Total Volume per Hour (Southbound)

The total volumes of traffic at different hours of the day in the northbound direction are shown in Figure 11 above. The volume of traffic over time forms a curve which spikes from 06:00 – 06:59 and reaches a peak from 15:00 – 16:59.

4.0 Conclusion

The traffic study conducted on William Street for both northbound and southbound directions was carried out from May 19th to May 31st, 2022. From the speed analysis, it was determined that 84.30% and 87.15% 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 06:00 – 06:59 and peak traffic was around 16:00 – 16:59 in both directions. Sundays had the least traffic, while most was recorded on Fridays. The highest speeds were recording during weekends.