

Traffic Data Analysis

Hugel Ave



Town of Midland

Engineering Department

June 14th, 2023

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1.0 Introduction

A traffic count was conducted from May 31st to June 14th on Hugel Avenue for the Eastbound and Westbound 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 Hugel Ave for Eastbound and Westbound direction. Table 1 below shows the location of the traffic trailer and data collection period.

Table 1- Locations of Traffic Trailer

Direction	Location	Period
Eastbound	651 Hugel Avenue, Midland, ON	12:00 on May 31 st , 2023 – 10:00 on June 7 th , 2023
Westbound	650 Hugel Avenue, Midland, ON	10:00 on June 7 th , 2023 – 08:00 on June 14 th , 2023

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 Hugel Ave 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 Eastbound and Westbound directions.

Table 2- Speed Summary

Direction	Average Speed (km/h)	85 th Percentile Speed (km/h)	Minimum Speed (km/h)	Maximum Speed (km/h)
Eastbound	51.5	61.0	5	99
Westbound	46.0	55.2	5	94

2.1 Eastbound Speed Analysis

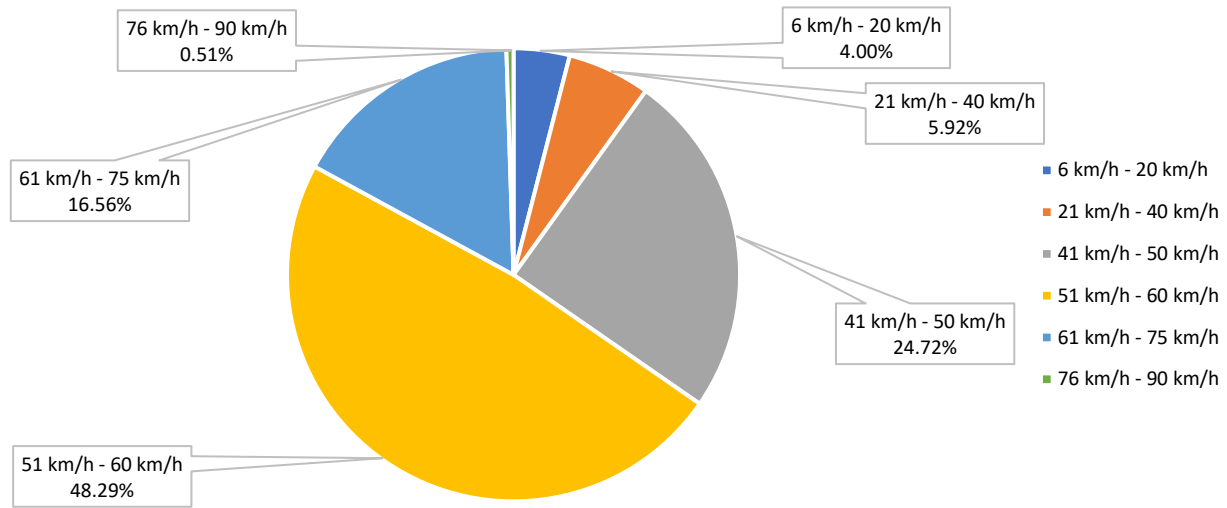


Figure 2- Total Volume Breakdown Based on Speed per Hour Intervals (Eastbound)

Figure 2 above shows that 34.64% of vehicles were travelling below the posted speed limit, 48.29% of vehicles were travelling between 51-60 km/h, and 17.07% 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 82.93% of vehicles were travelling within the accepted speed limit in the Eastbound direction.

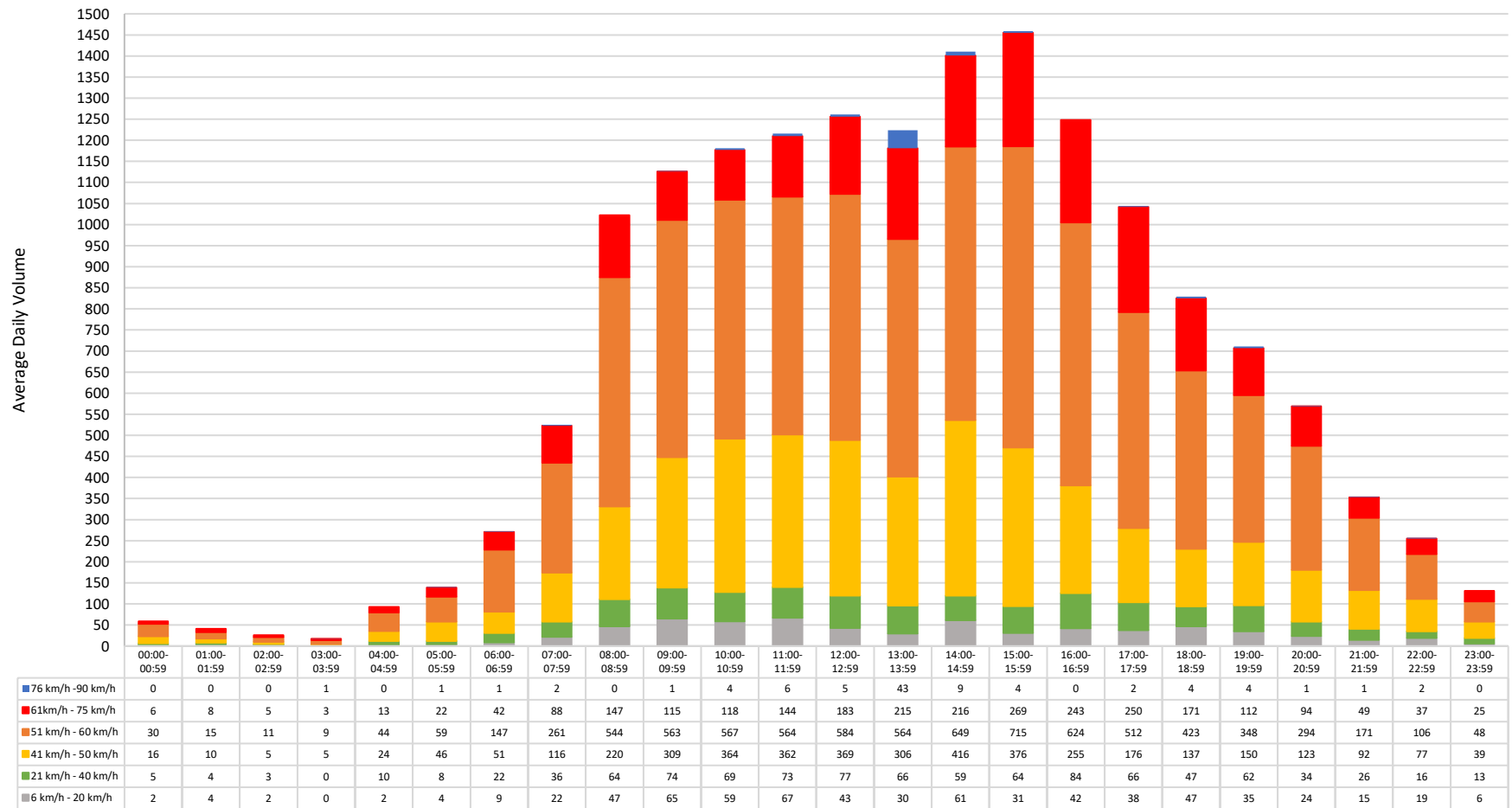


Figure 3 - Traffic Volume Speeds for Each Hour on Weekdays (Eastbound)

Figure 3 above is the graph used to determine the time when most speeding occurs on weekdays. The data has a definite curve shape, and traffic volumes increased throughout the day with a spike from 08:00 – 08:59 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 from 15:00 - 15:59.

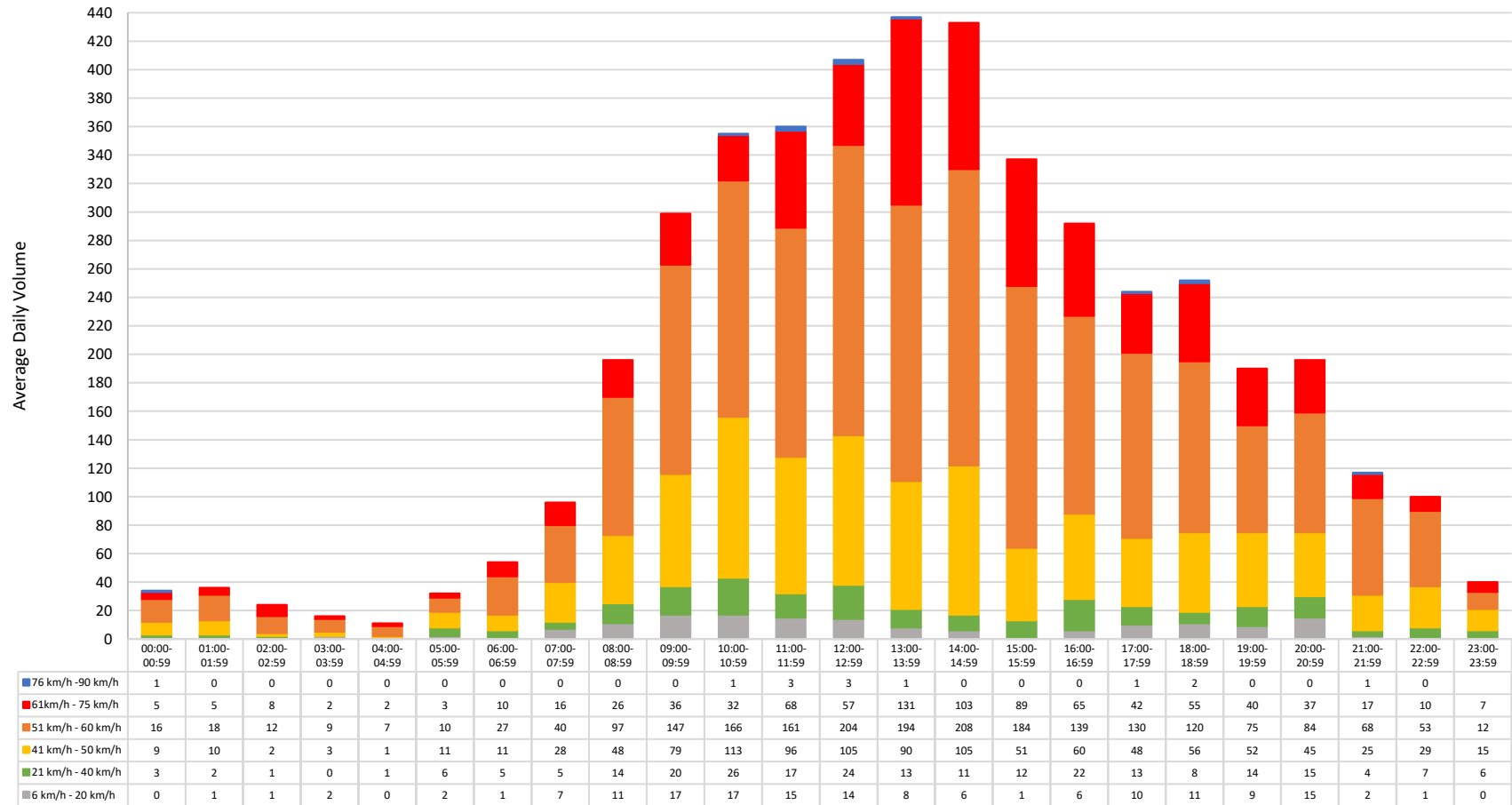


Figure 4 - Traffic Volume Speeds for Each Hour on Weekends (Eastbound)

Figure 4 above is the graph used to determine the time when most speeding occurs on weekends. Generally, traffic volumes increase throughout the day, starting at 8:00-8:59 and peaking at 13:00 – 13:59.

2.2 Westbound Speed Analysis

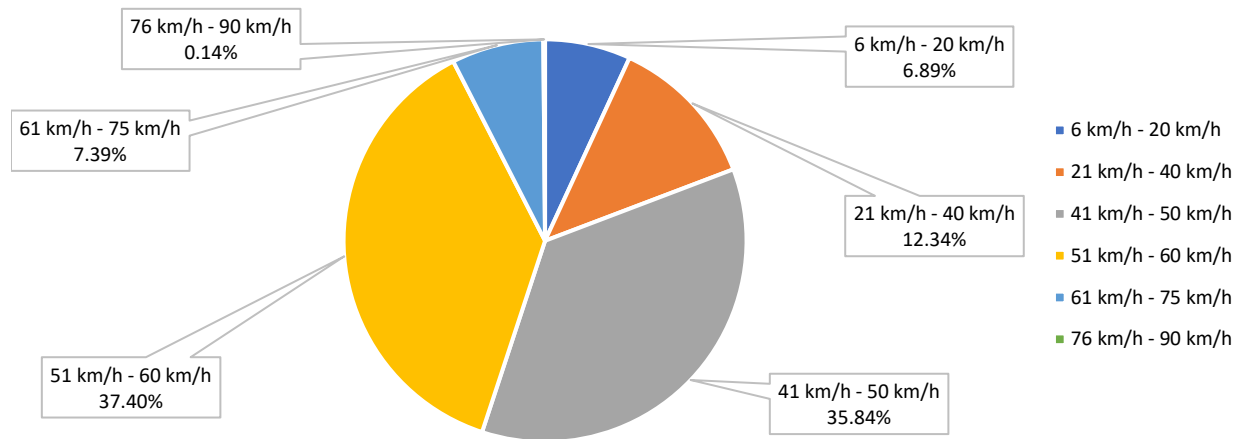


Figure 5 - Total Volume Breakdown Based on Speed per Hour Intervals (Westbound)

Figure 5 shows that 55.07% of the vehicles were travelling below the posted speed limit, 37.40% of vehicles were travelling between 51-60 km/h, and 7.53% 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 92.47% of vehicles were driving within the accepted speed limit.

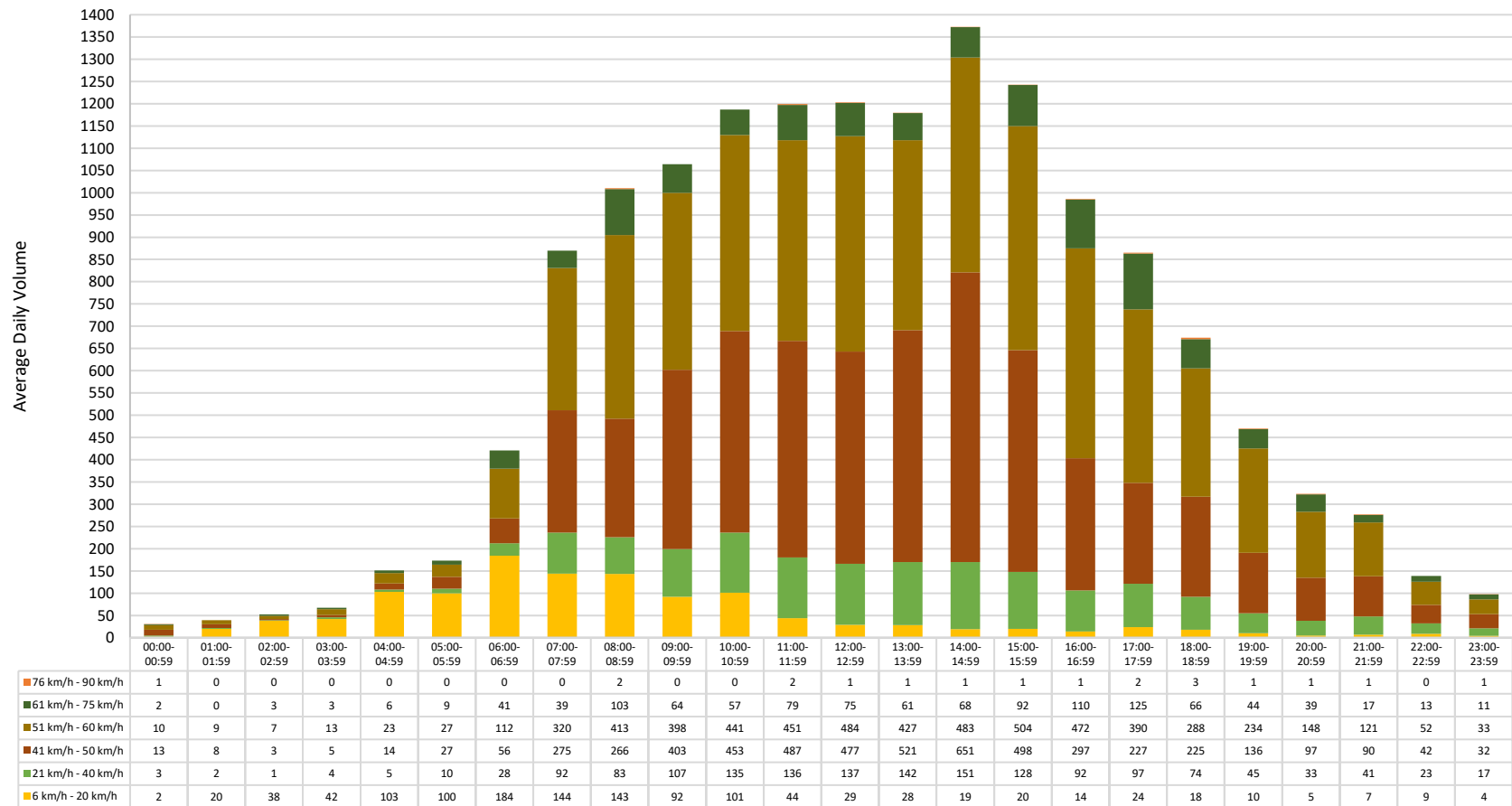


Figure 6 - Traffic Volume Speeds for Each Hour on Weekdays (Westbound)

Figure 6 above is the graph used to determine the time when most speeding occurs on weekdays. The information graphs a definite curve shape, from evening to early morning. Traffic volumes increased throughout the day with a spike from 07:00 – 07:59, reached its peak at 14:00 – 14:59, and starts to decline afterward. The largest volumes of traffic traveling at speeds beyond the acceptable limit were recorded from 17:00 - 17:59.

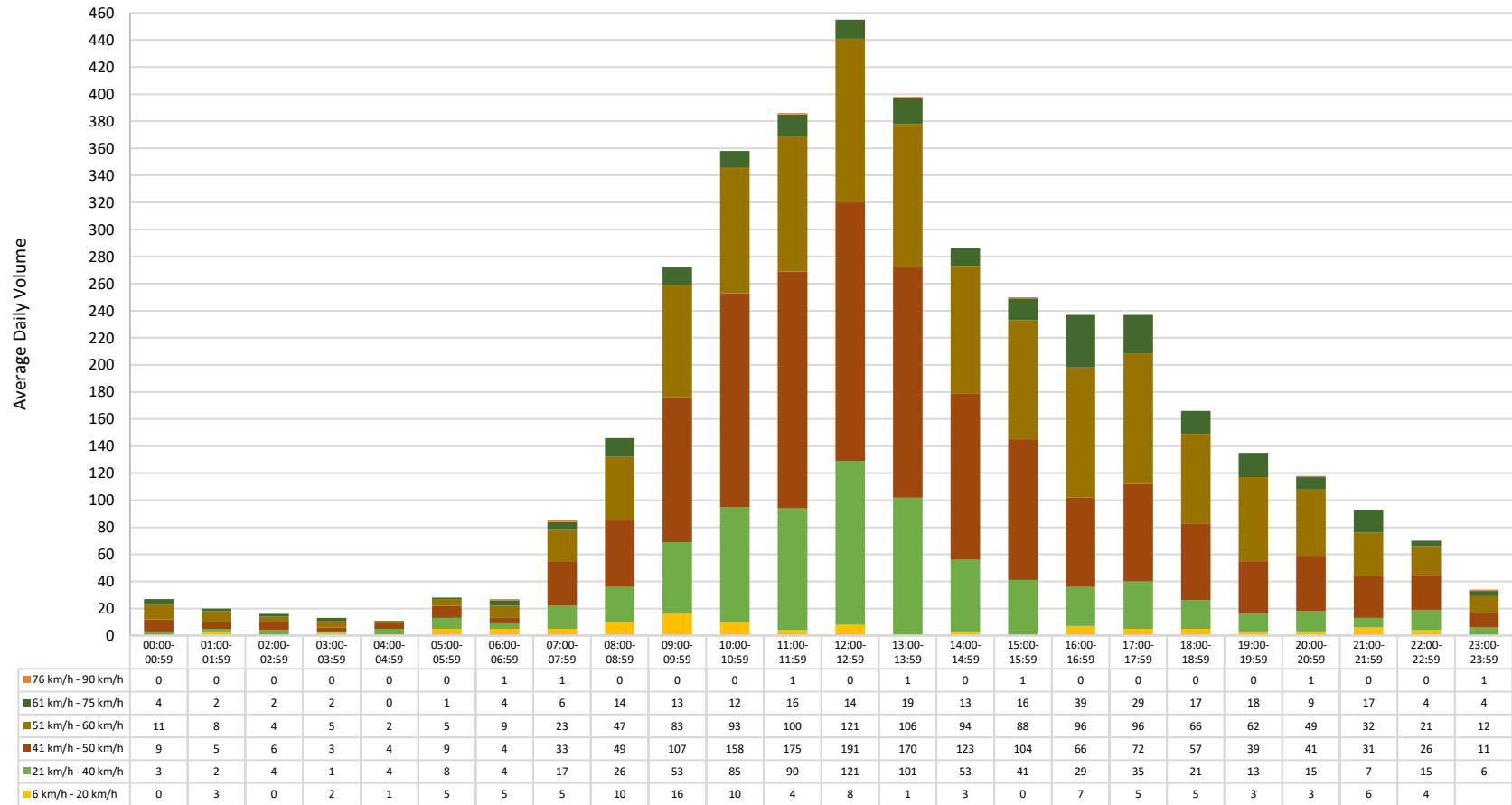


Figure 7 - Traffic Volume Speeds for Each Hour on Weekends (Westbound)

Figure 7 above is the graph used to determine the time when most speeding occurs on weekends. The data given forms a definite curve shape. Traffic volumes spike at 09:00-09:59, reaches its peak at 12:00-12:59, then starts to decline afterward.

3.0 Traffic Volume

Table 3 shows the average daily volume on Hugel Ave for both Eastbound and Westbound directions.

Table 3 - Volume Summary

Direction	Period	Average Daily Traffic Volume
Eastbound	Weekday	2725.2
Eastbound	Weekend	2292.5
Westbound	Weekday	2576.5
Westbound	Weekend	1951.0

3.1 Eastbound Volume by Date

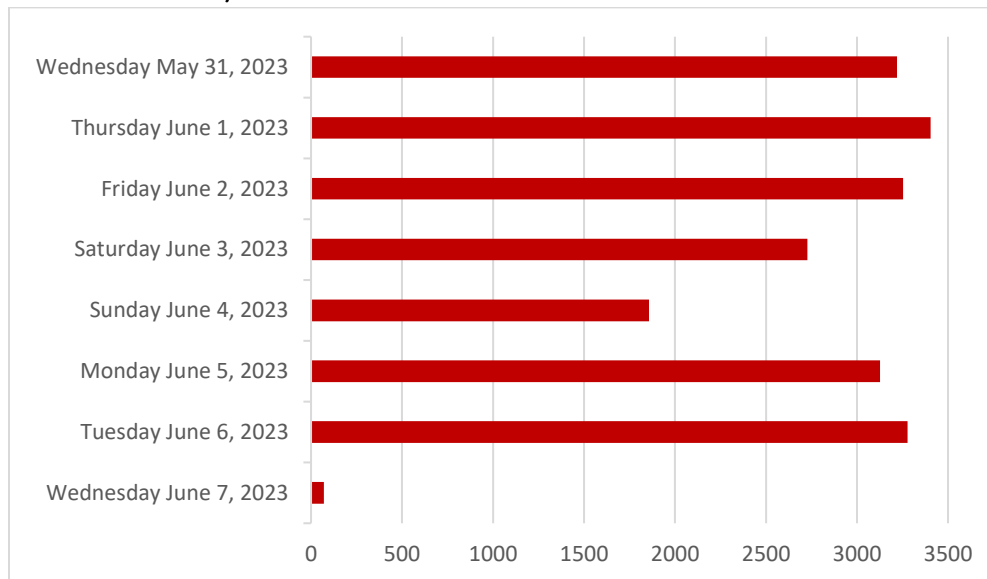


Figure 8 - Total Volume per Day (Eastbound)

Figure 8 above shows the total volumes of each day data that was collected in the Eastbound direction. Thursday June 1st had about the largest traffic volume, while Sunday June 4th had the least (not including Wednesday June 7th when the Traffic Trailer was moved). Generally, more traffic was recorded on weekdays than weekends.

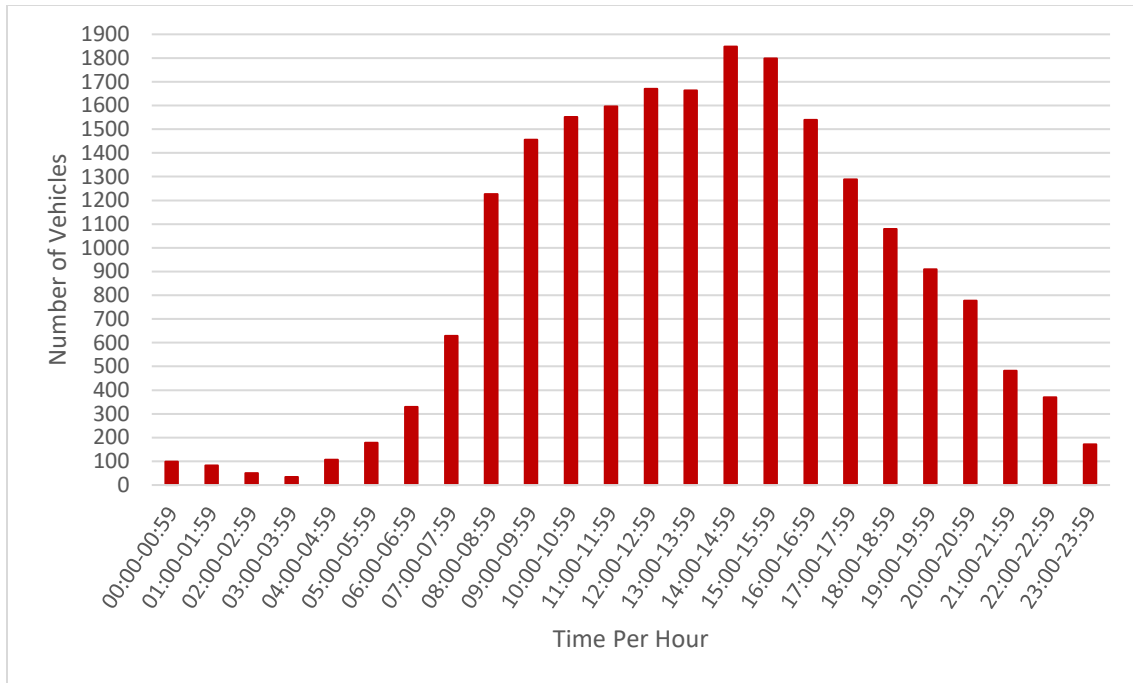


Figure 9 - Total Volume per Hour (Eastbound)

As shown in Figure 9 above, the traffic volume carries a definite curve shape, in which traffic flow is low at night and begins to increase at 07:00 – 07:59. Peak traffic volume occurs at 14:00 – 14:59 and it begins to decline into the night.

3.2 Westbound Volume by Date

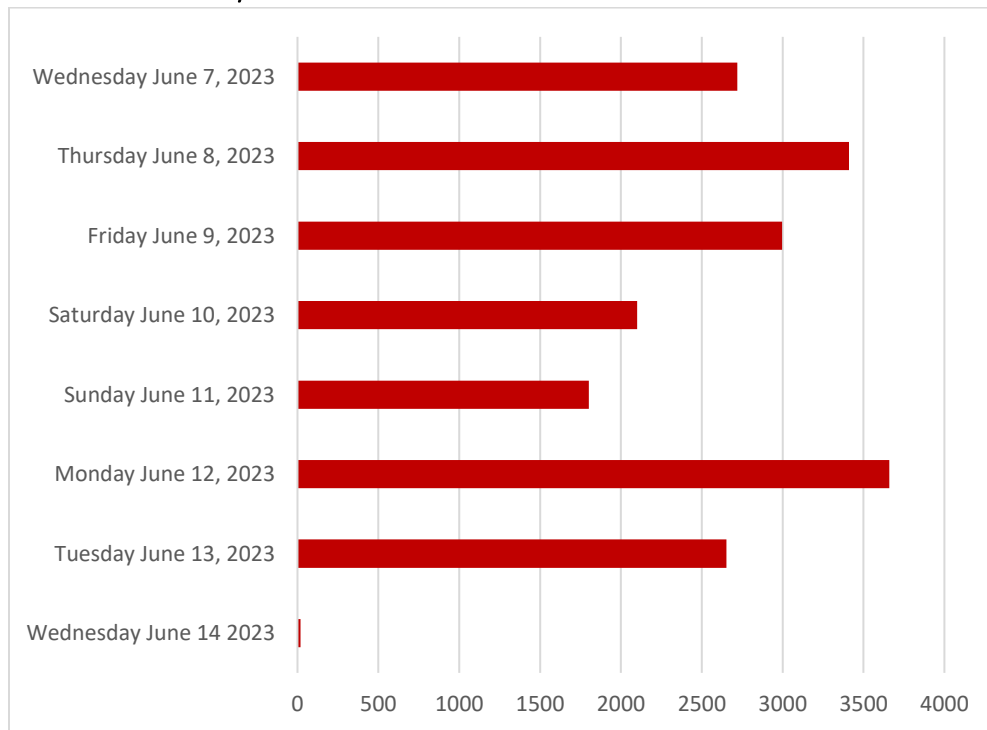


Figure 10 - Total Volume per Day (Westbound)

Figure 10 above shows the daily total traffic volumes in the Westbound direction. Wednesday, May 24th had the largest traffic volume, while Sunday, June 11th had the least (not including Wednesday June 14th when the Traffic Trailer was moved). Generally, more traffic was recorded on weekdays than weekends.

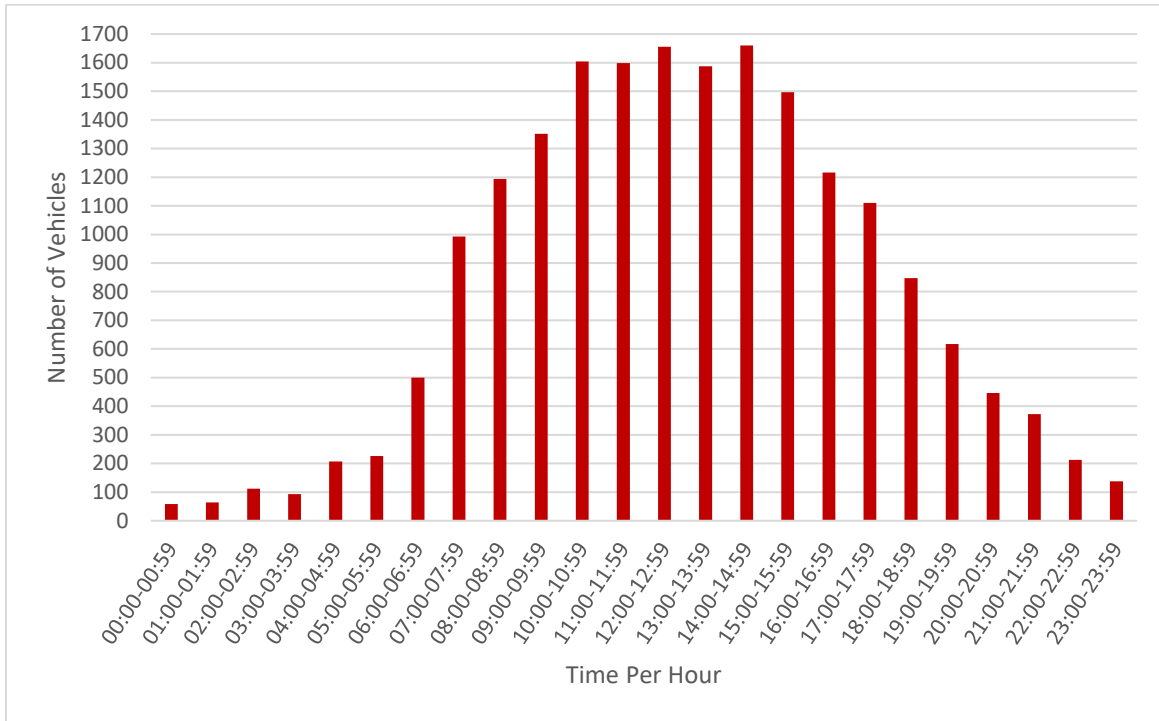


Figure 11 - Total Volume per Hour (Westbound)

The total volumes of traffic at different hours of the day in the Westbound direction are shown in Figure 11 above. Traffic volumes increased throughout the day from 07:00 – 07:59, reached its peak at 14:00 – 14:59, then begins its decline afterward.

4.0 Conclusion

The traffic study conducted on Hugel Ave for the Eastbound and Westbound directions was carried out from May 31st to June 14th 2023. From the speed analysis, it was determined that 82.93% of vehicles were travelling within the accepted speed limit for the Eastbound direction and 92.47% in the Westbound direction, respectively. Traffic generally was higher on weekdays than on weekends and the most volume occurred during 14:00-14:59 in both weekends.