

Traffic Data Analysis

Hugel Ave.

Westbound and Eastbound



Town of Midland
Engineering Department

June 17th, 2019

1.0 Introduction

A traffic count was conducted from June 10th, 2019 to June 17th, 2019 on Hugel Ave for both westbound and eastbound 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 around the school zone and raise safety awareness and help calm traffic by displaying speeds of vehicles approaching.

1.1 Location

The traffic trailer was placed on Hugel Ave within the Georgian Bay District Secondary School zone to record the speed and volume of vehicles entering the school zone for both directions. Table 1 below shows the location of the traffic trailer and data collection period.

Table 1. Locations of Traffic Trailer

Direction	Location	Period
Westbound	834 Hugel Ave, Midland, ON	08:00am on June 10 th , 2019 – 08:00am on June 13 th , 2019
Eastbound	936 Hugel Ave, Midland, ON	08:00am on June 13 th , 2019 – 08:00am on June 17 th , 2019

1.2 Traffic Trailer

The traffic trailer used was model ATS-3 as shown in the Figure 1. The traffic trailer is set to show the speed of the approaching vehicle and display short messages depending on the speed. The traffic trailer uses radar to detect vehicles and group collected data into 1-hour intervals. The trailer was placed far away from the traffic signal to make sure the speed data collected was not affected.



Figure 1. Traffic Trailer

2.0 Speed Summary

The posted speed limit on Hugel Ave 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 below shows an overall speed summary of the data collected for westbound and eastbound directions.

Table 2. Speed Summary

Direction	Average Speed (km/h)	Minimum Speed (km/h)	Maximum Speed (km/h)
Westbound	45.2	10	79
Eastbound	46.2	10	80

2.1 Westbound Speed Analysis

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

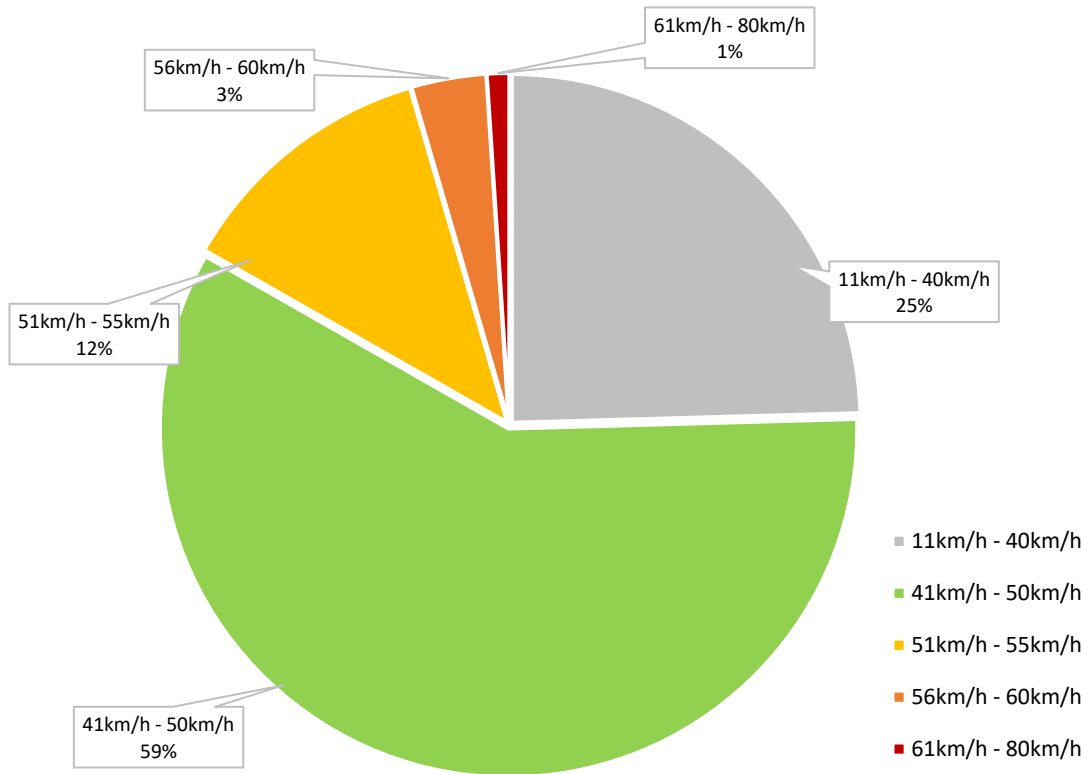


Figure 2. Hugel Ave. Westbound

From this summary we can see that 84% of vehicles were travelling below the posted speed limit, 15% of vehicles were travelling between 51-60 km/h, and 1% of vehicles were travelling above 60km/h. When we consider the accepted speed limit is 10km/h over the posted speed limit, we find that a total of 99% of vehicles were travelling within the accepted speed limit in the westbound direction.

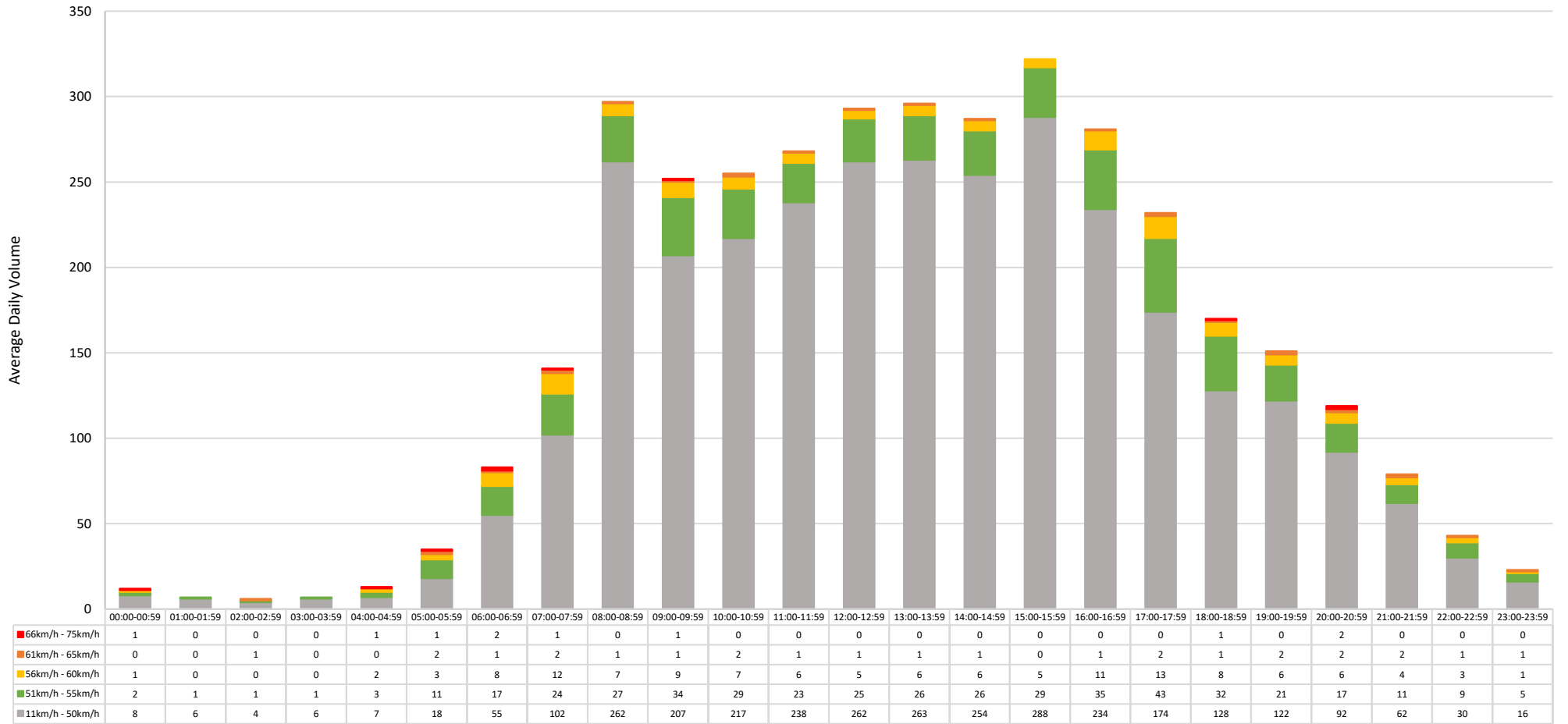


Figure 3. Speed by Hour Analysis for Westbound

2.2 Eastbound Speed Analysis

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

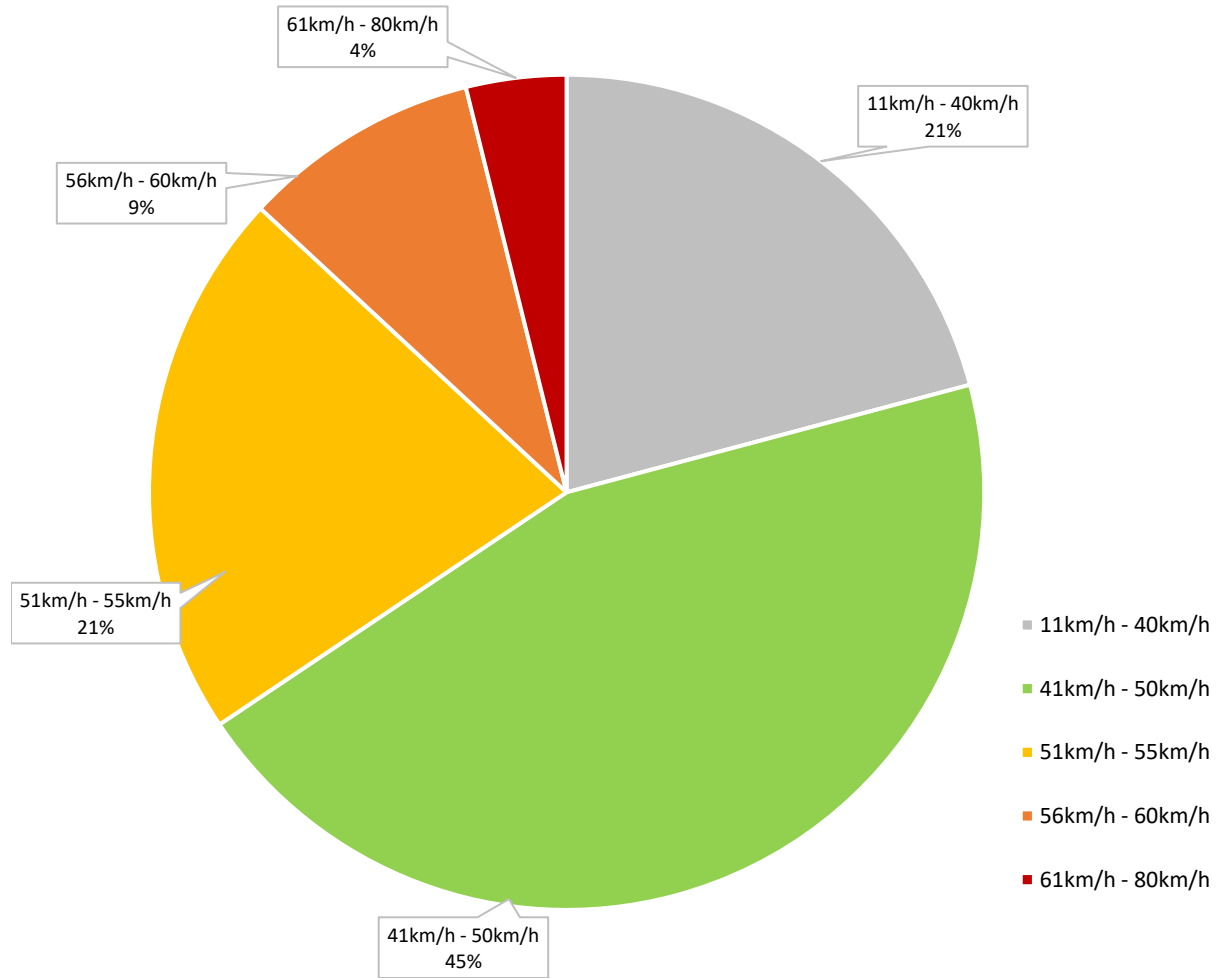


Figure 4. Hugel Ave. Eastbound

From this summary we can see that 66% of the vehicles were travelling below the posted speed limit, 30% of vehicles were travelling between 51-60 km/h, and 4% of vehicles were travelling above 60km/h. When we consider the accepted speed limit is 10km/h over the posted speed limit, we find that a total of 96% of vehicles were driving within the accepted speed limit.

In addition, the traffic trailer detected that 50% of vehicles slowed down when approaching the trailer in westbound direction and 52% of vehicles slowed down in eastbound direction. These percentages could include the vehicles slowed down to enter driveways or stopped to park; however, it also shows that the trailer is influencing traffic calming.

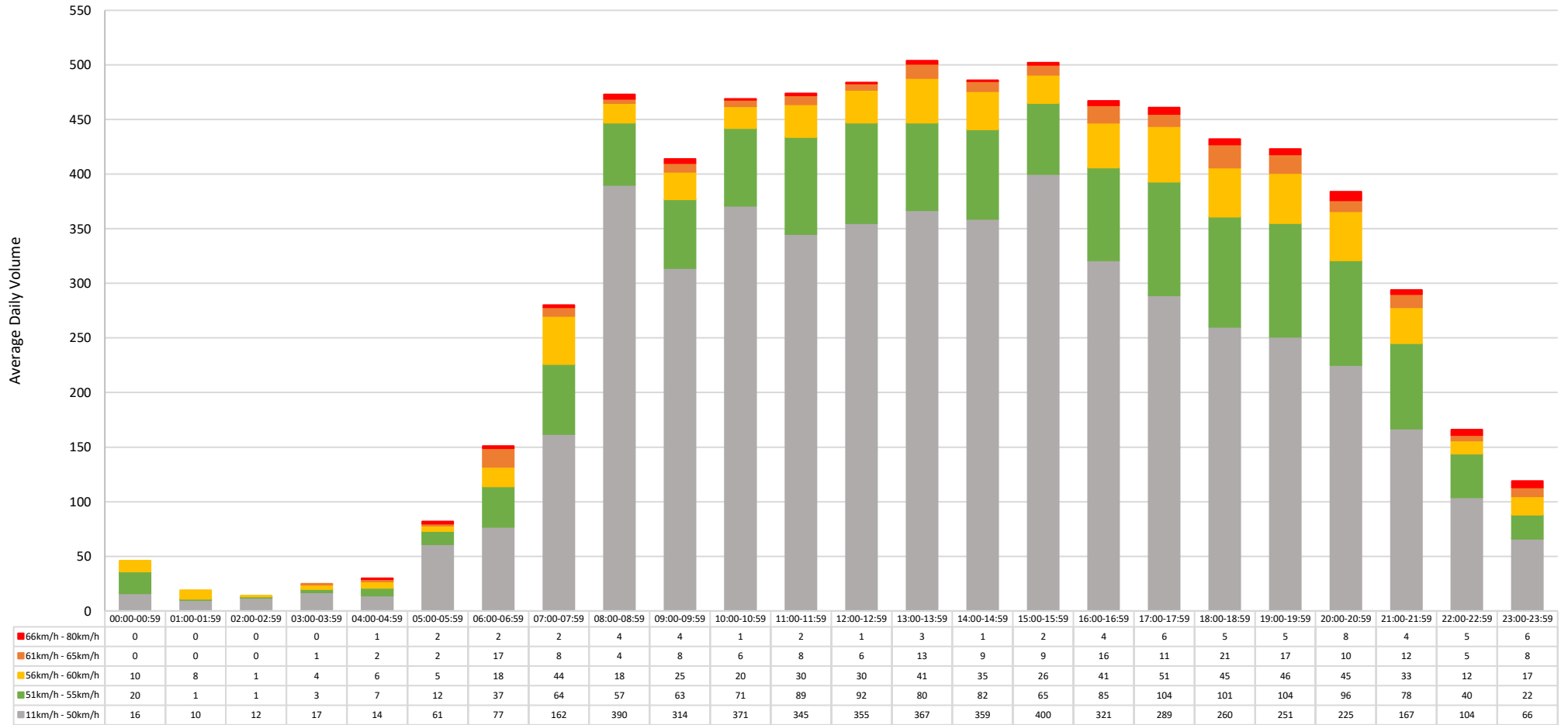


Figure 5. Speed by Hour Analysis for Eastbound (June 13th - June 14th, 2019)

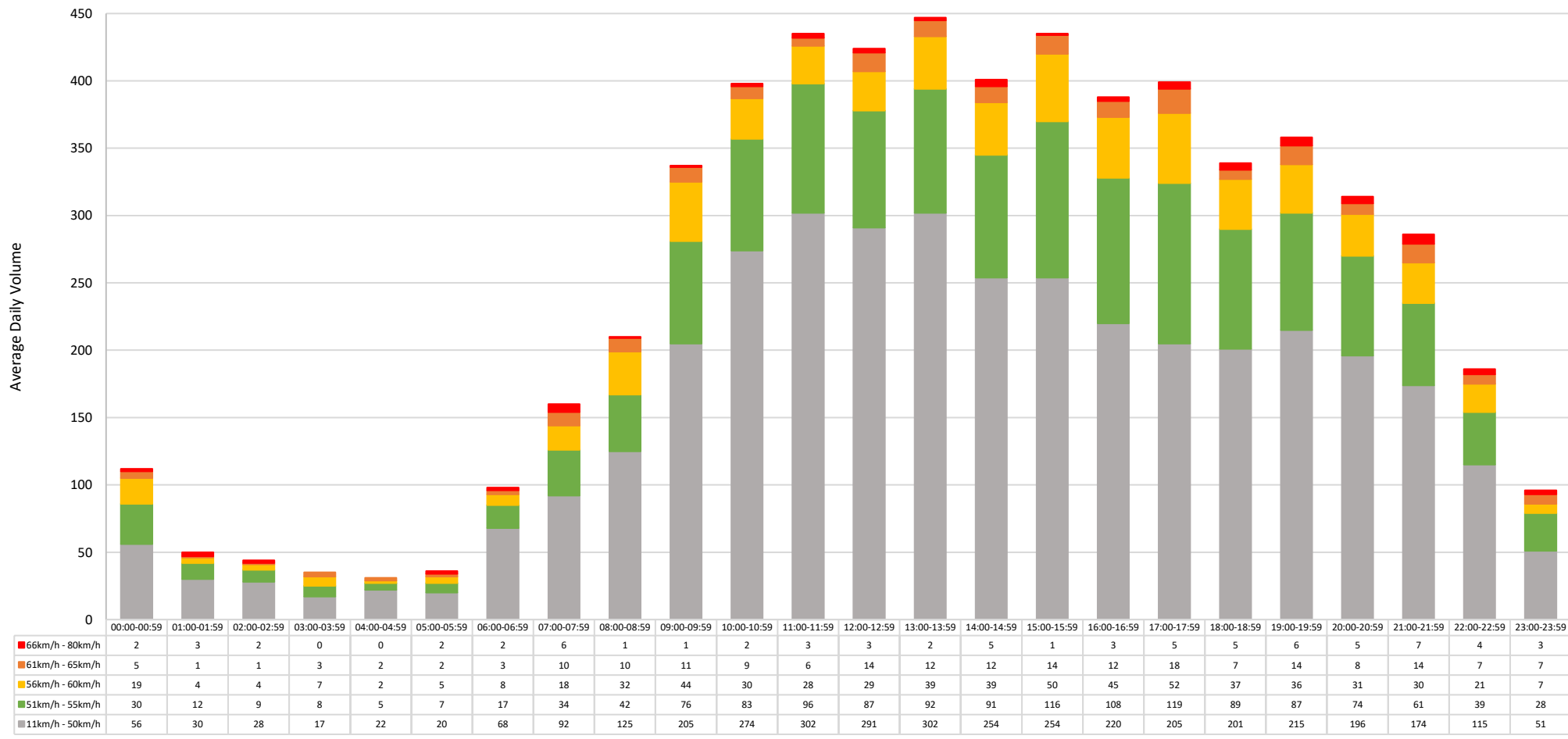


Figure 6. Speed by Hour Analysis for Eastbound (June 15th - June 16th, 2019)

3.0 Traffic Volume

Table 3 shows the average daily volume on Hugel Ave for westbound and eastbound directions. Only the days when the traffic trailer was placed there for the full 24 hours are used in traffic volume analysis. According to the data, westbound direction has much less daily traffic than the eastbound direction.

Table 3. Volume Summary

Direction	Period	Average Daily Traffic Volume
Westbound	June 11 th to June 12 th (Tuesday to Wednesday)	3,742
Eastbound	June 14 th (Friday)	7,330
Eastbound	June 15 th to June 16 th (Saturday to Sunday)	5,943

3.1 Westbound Volume by Hour

The data collected for two full days (June 11th and June 12th) is used to analyze the average traffic volume at different time of a day (Figure 7). From the graph, Hugel Ave has peak traffic during 08:00 to 09:00 and 15:00 to 16:00. The classes at Georgian Bay District Secondary School start at 09:00 and end at 15:10. Therefore, the peak traffic hours in westbound direction matched with the school start and end times as expected.

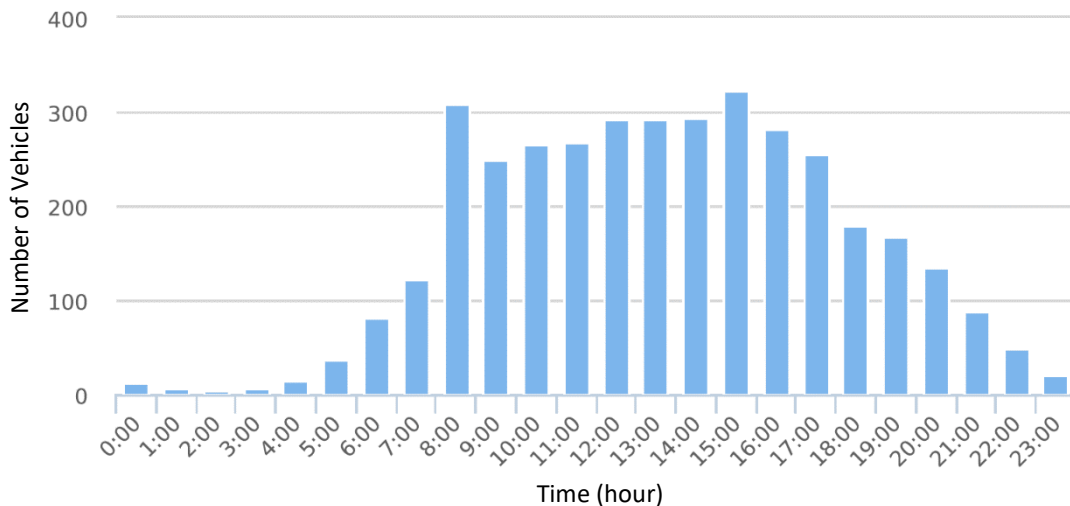


Figure 7. Average Volume by Hour on June 11th and June 12th (Westbound)

3.2 Eastbound Volume by Hour

The data collected on June 14th (weekday) and June 15th to June 16th (weekends) are used to analyze the average traffic volume at different time of the day as shown in Figure 8 and Figure 9 respectively.

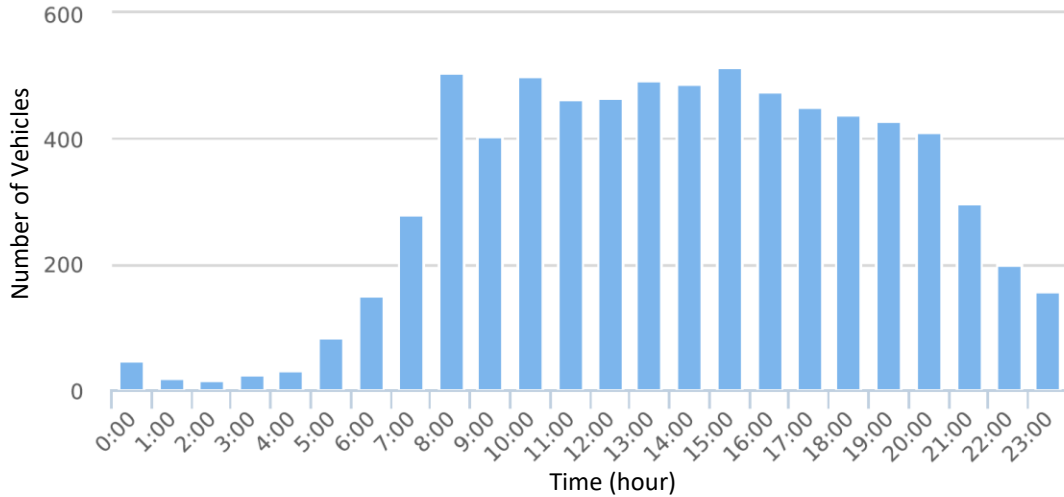


Figure 8. Average Volume by Hour on June 14th (Eastbound)

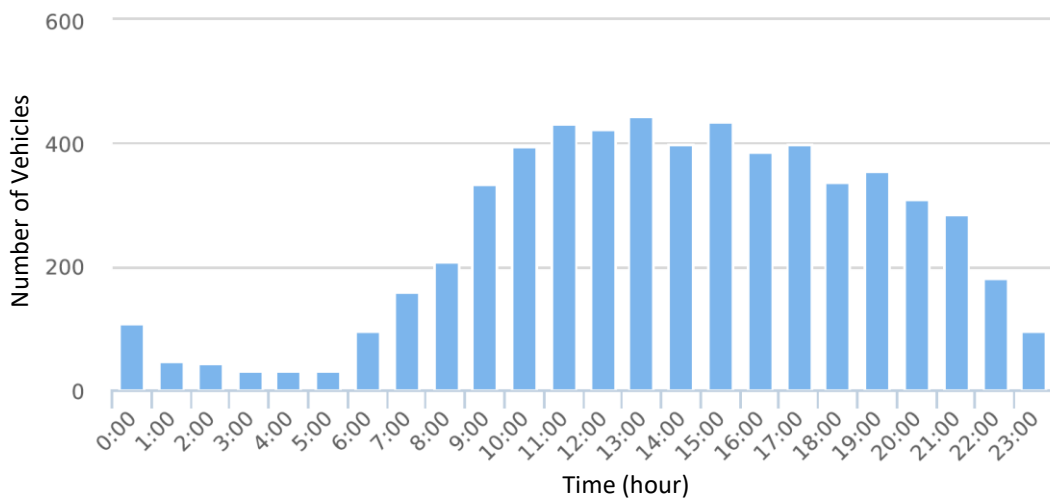


Figure 9. Average Volume by Hour on June 15th to June 16th (Eastbound)

As shown in Figure 8, the peak traffic occurs at school times which is similar to the westbound. In addition, there was more traffic at typical evening rush hour which is not observed in westbound direction.

On weekends (Figure 9), there was more traffic during midnight, and peak traffic occurred around noon, but overall less traffic than on a weekday.

4.0 Conclusion

The traffic study conducted on Hugel Ave was successfully carried out from June 10th to June 17th, 2019 for westbound and eastbound directions. From the speed analysis, it was determined that 99% of vehicles travelling in the westbound direction were travelling within the accepted speed limit. It was also determined that 96% of vehicles travelling in the eastbound direction were travelling within the accepted speed limit.

In addition, from the volume analysis, it was determined that the peak traffic hours were at school times for westbound direction. It was also determined that peak traffic hours were at school times and typical evening rush hour for eastbound direction. The eastbound traffic was monitored over the weekend and it was noted that there was more traffic during the midnight hours on the weekend, but overall there was less traffic on the weekend.