

# Traffic Data Analysis

Hugel Avenue

Eastbound and Westbound



Town of Midland

Engineering Department

August 18<sup>th</sup>, 2021

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## 1.0 Introduction

A traffic count was conducted from August 11<sup>th</sup>, 2021, to August 25<sup>th</sup>, 2021, on Hugel Avenue for both eastbound and westbound directions. Vehicle speeds and traffic volume 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 Avenue for both eastbound and westbound directions. Table 1 below shows the location of the traffic trailer and data collection period.

**Table 1- Locations of Traffic Trailer**

Direction	Location	Period
Eastbound	865 Hugel Ave, Midland, ON	1:00pm on August 11 <sup>th</sup> – 10:00am on August 18 <sup>th</sup> , 2021
Westbound	858 Hugel Ave, Midland, ON	11:00am August 18 <sup>th</sup> , 2021 – 8:00am on August 25 <sup>th</sup> , 2021

### 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 Avenue 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 eastbound and westbound directions.

Table 2- Speed Summary

Direction	Average Speed (km/h)	85 <sup>th</sup> Percentile Speed (km/h)	Minimum Speed (km/h)	Maximum Speed(km/h)
Eastbound	50.88	56.67	10	106.0
Westbound	49.06	55.03	10	98.0

### 2.1 Eastbound Speed Analysis

Figure 2 to 4 below show the speed summary for the eastbound traffic.

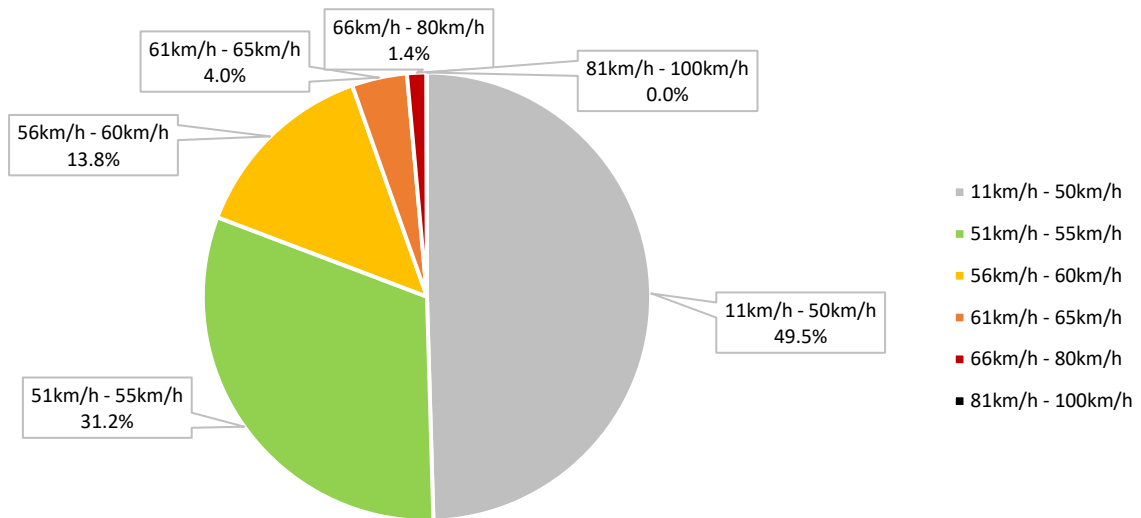


Figure 2- Hugel Avenue Eastbound

Figure 2 above shows that 49.5% of vehicles were travelling below the posted speed limit, 45.0% of vehicles were travelling between 51-60 km/h, and 5.4% of vehicles were travelling above 60km/h. Considering the accepted speed limit is 10km/h over the posted speed limit, a total of 94.5% of vehicles were travelling within the accepted speed limit in the eastbound direction.

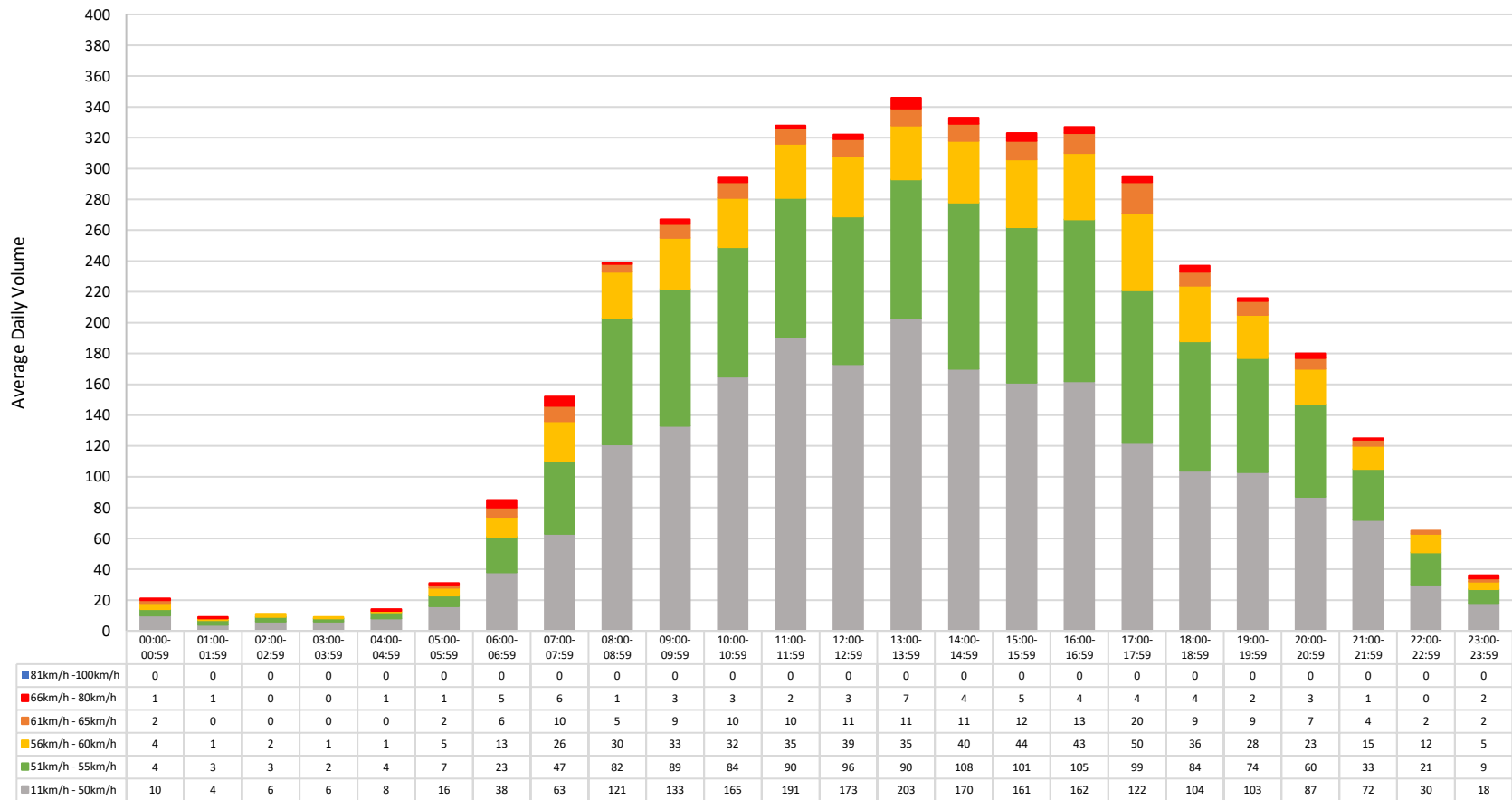
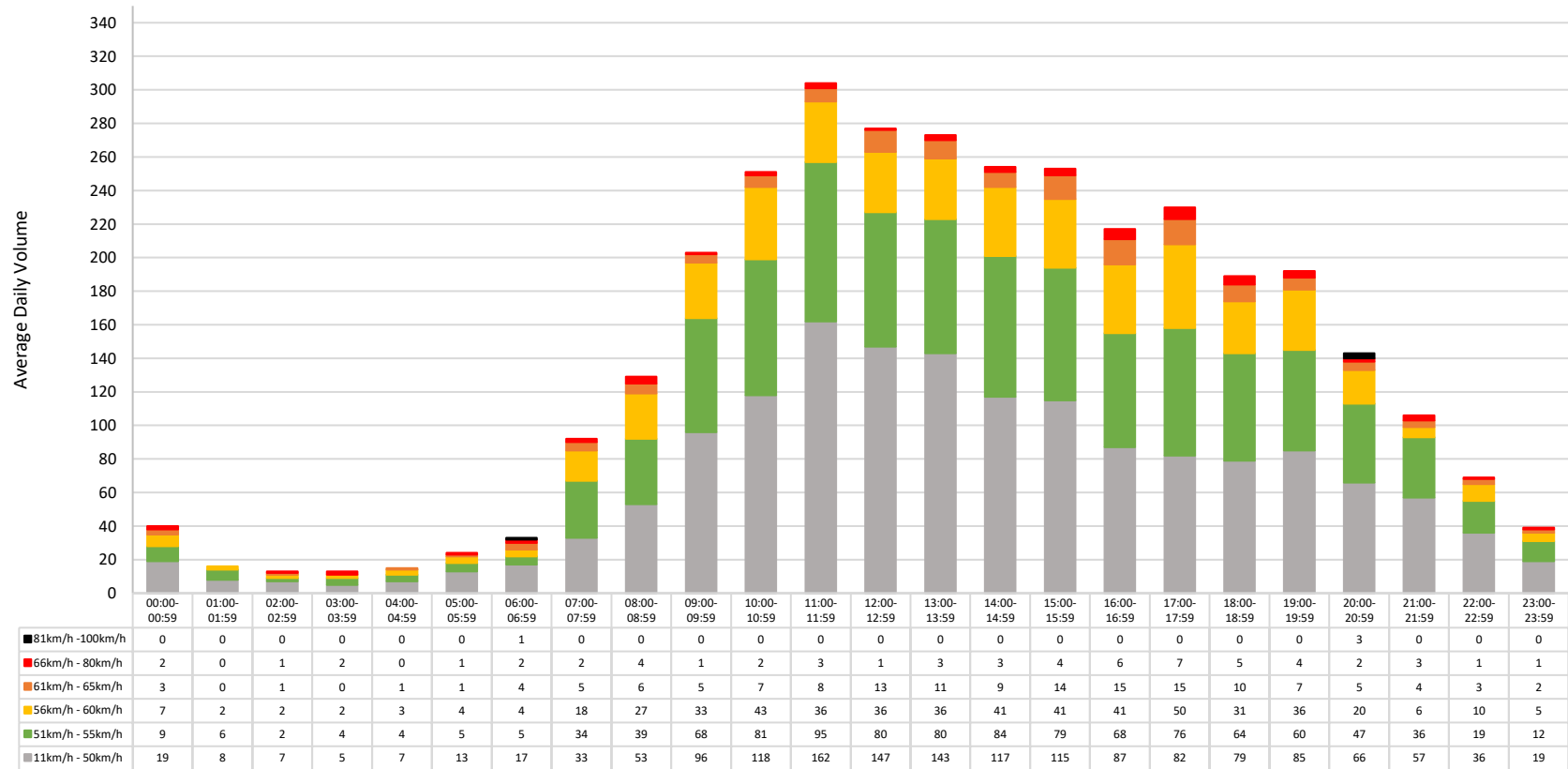


Figure 3- Speed by Hour Analysis for Eastbound Weekdays

Figure 3 above is the speed by hour graph used to determine the time where most speeding occurs on weekdays. The data shows that speeding formed a “u” shape as it increased throughout the day until it reached its peak from 3:00pm to 5:59pm and begins to decline again. There is an additional spike in speeding from 6:00am until 7:59am.



**Figure 4 Speed by Hour Analysis for Eastbound Weekends**

Figure 4 above is the speed by hour graph used to determine the time where most speeding occurs on the weekend. The data shows that speeding was low at night and began to increase around 6:00 am before beginning to decline again at 11:00pm. The speeding reached a peak from 3:00pm until 5:59pm. There was an additional spike in speeding from 8:00am until 8:59am.

## 2.2 Westbound Speed Analysis

Figure 5 to 7 below is the speed summary for the westbound traffic.

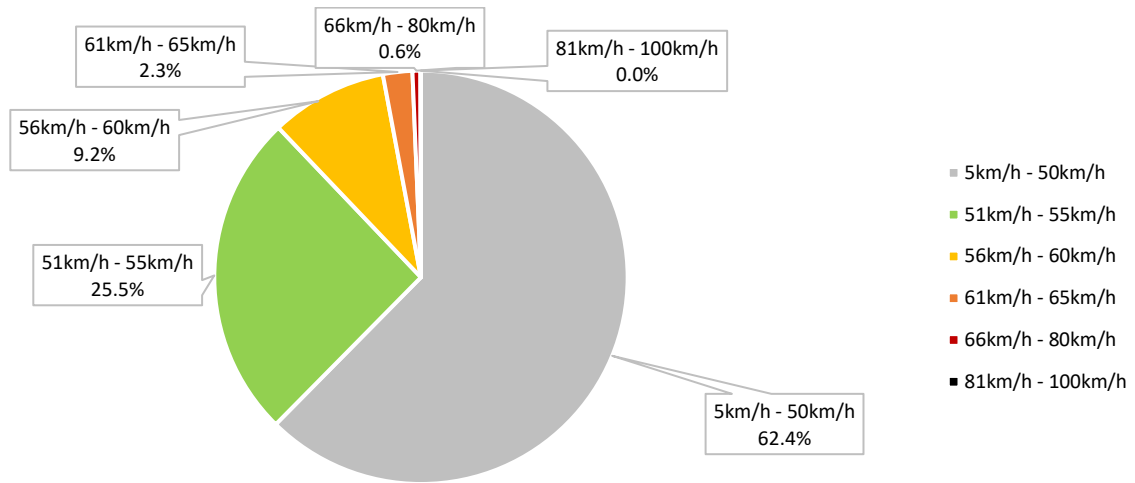


Figure 5- Hugel Avenue Westbound

Figure 5 above shows that 62.4% of vehicles were travelling below the posted speed limit, 34.7% of vehicles were travelling between 51-60 km/h, and 2.9% of vehicles were travelling above 60km/h. Considering the accepted speed limit is 10km/h over the posted speed limit, a total of 97.1% of vehicles were travelling within the accepted speed limit in the westbound direction.

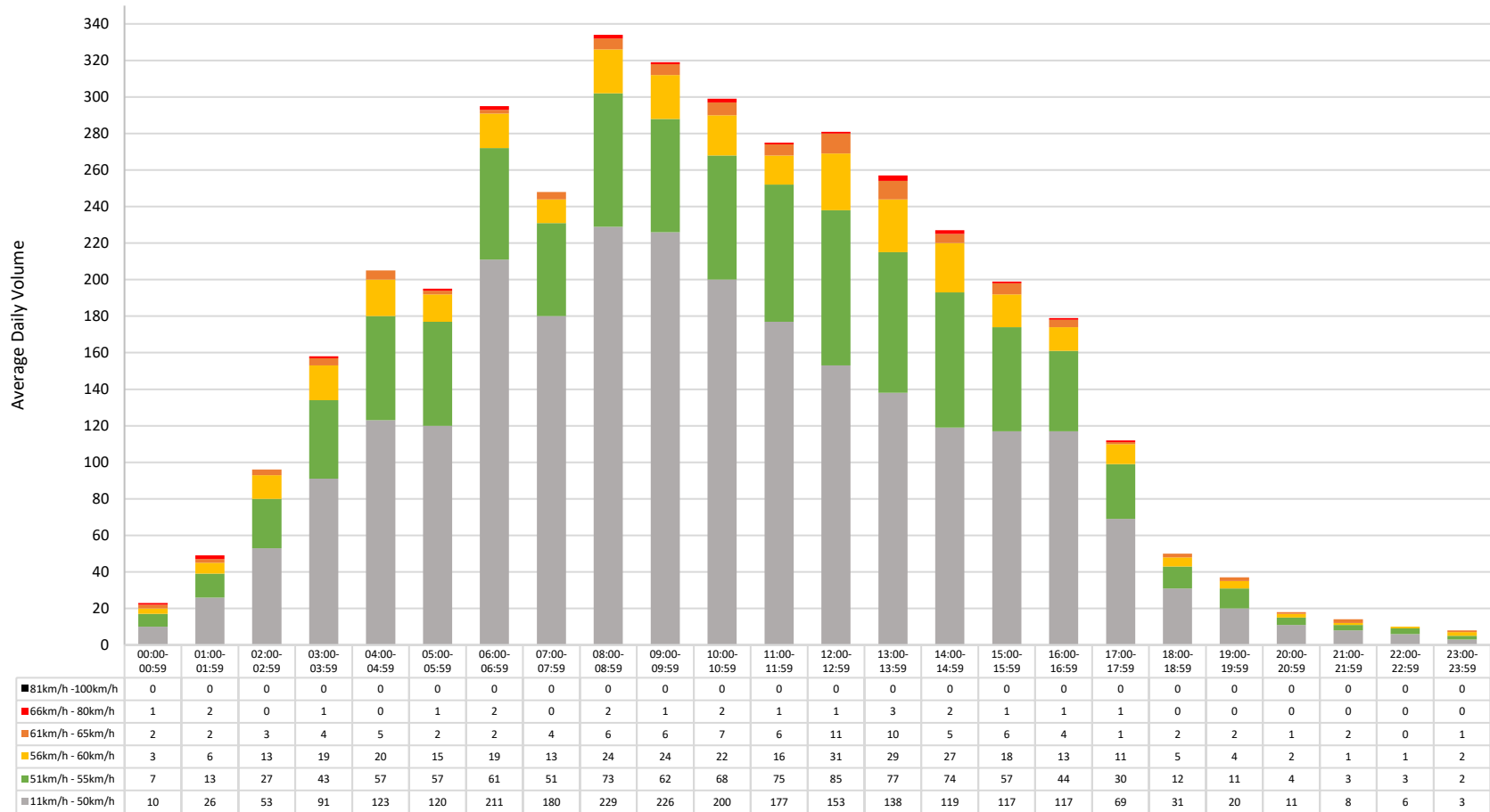


Figure 6- Speed by Hour Analysis for Westbound Weekdays

Figure 6 above is the speed by hour graph used to determine the time where most speeding occurs on weekdays. The data shows that speeding formed a “u” shape as it increased throughout the day until it reached its peak from 8:00am to 10:00pm and begins to decline again. There is an additional spike in speeding from 6:00am until 7:00am.



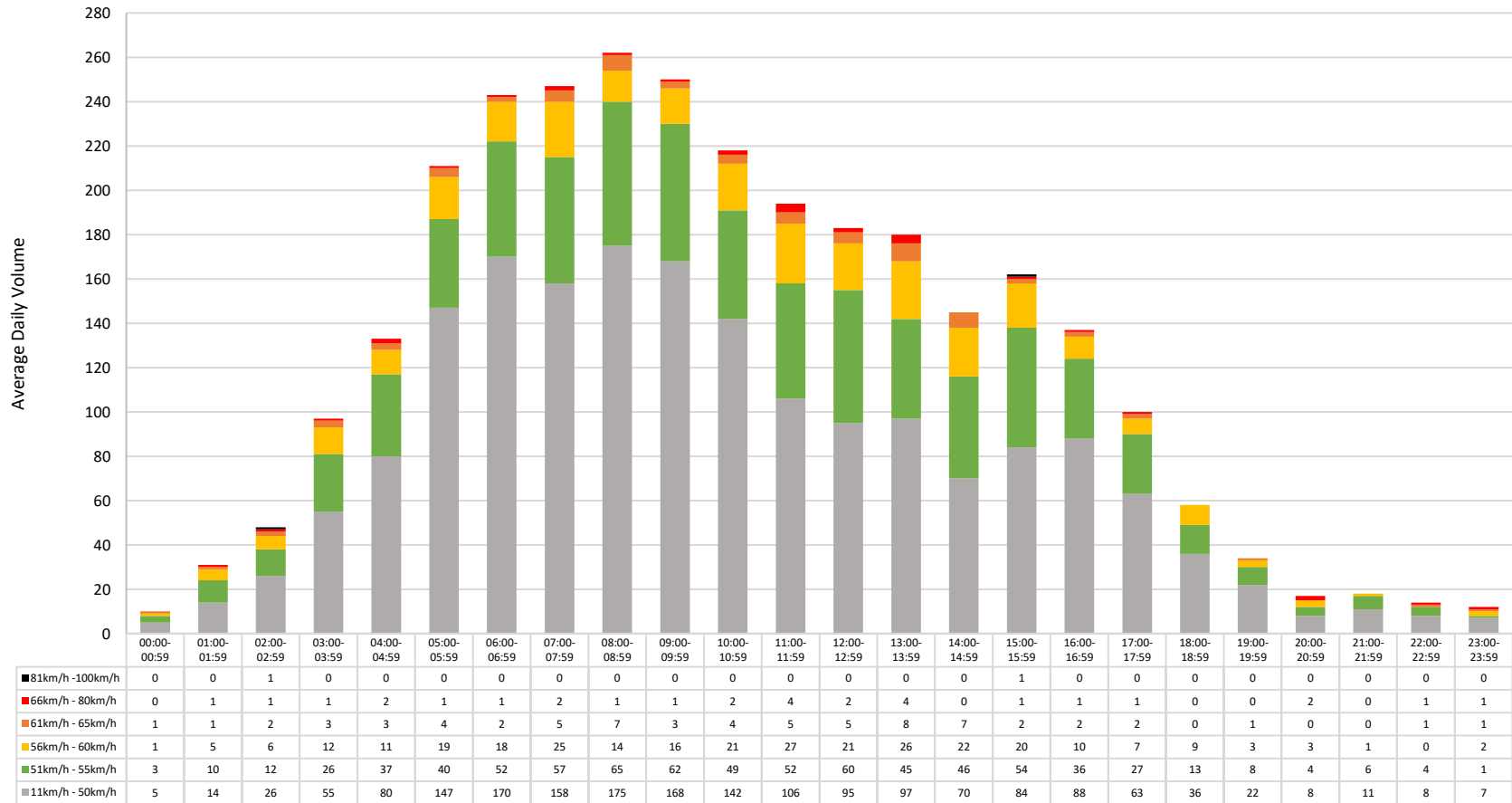


Figure 6- Speed by Hour Analysis for Westbound Weekends

Figure 7 above is the speed by hour graph used to determine the time where most speeding occurs on the weekend. The data shows that speeding was low at night and began to increase around 4:00 am before beginning to decline again at 11:00am. The speeding reached a peak from 7:00am until 10:00am. There was an additional spike in speeding at 3:00pm.

Figure 6 (weekday) and Figure 7 (weekend) above are the speed by hour graphs used to determine the time where most speeding occurs. The data shows that speeding was relatively consistent in the westbound direction on weekdays and weekends having spikes from 6:00am to 10:00am.

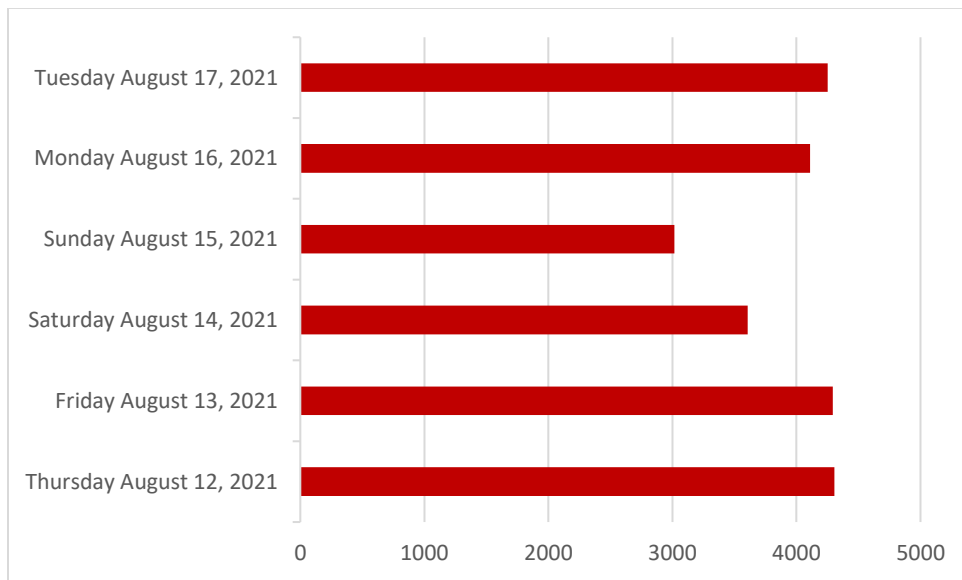
In addition, the traffic trailer detected that 71.75% of vehicles slowed down when approaching the trailer in the eastbound direction and 49.2% slowed down in westbound direction. These percentages show that the trailer is influencing traffic calming.

### 3.0 Traffic Volume

Table 3 shows the average daily volume on Hugel Ave for eastbound and westbound directions.

**Table 3- Volume Summary**

Direction	Period	Average Daily Traffic Volume
Eastbound	August 12 <sup>th</sup> to August 13 <sup>th</sup> and August 16 <sup>th</sup> to August 17 <sup>th</sup> (Monday, Tuesday, Thursday, Friday)	4207.3
Eastbound	August 14 <sup>th</sup> to August 15 <sup>th</sup> (Saturday, Sunday)	3376.5
Westbound	August 19 <sup>th</sup> -20 <sup>th</sup> and August 23 <sup>rd</sup> -25 <sup>th</sup> (Thursday, Friday, Monday, Tuesday)	3208.6
Westbound	August 21 <sup>st</sup> - 22 <sup>nd</sup> (Saturday, Sunday)	2968.5



**Figure 7- Total Volume per Day (Eastbound)**

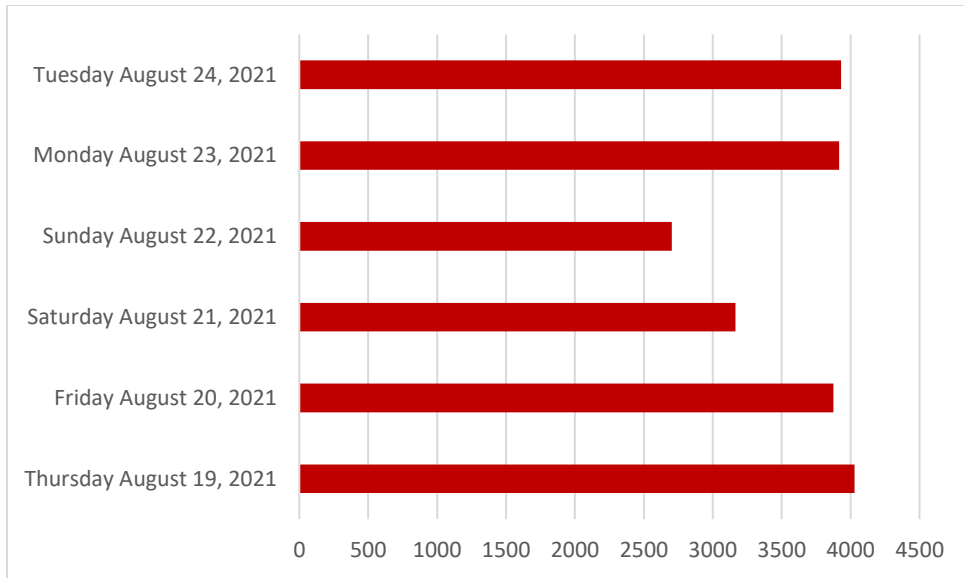


Figure 8- Total Volume per Day (Westbound)

### 3.1 Eastbound Volume by Hour

The data collected from August 12<sup>th</sup> to August 13<sup>th</sup> and August 16<sup>th</sup> to August 17<sup>th</sup> (weekdays) and August 14<sup>th</sup> to August 15<sup>th</sup> (weekend) are used to analyze the average traffic volume at different times of the day as shown in Figure 10 and Figure 11, respectively.

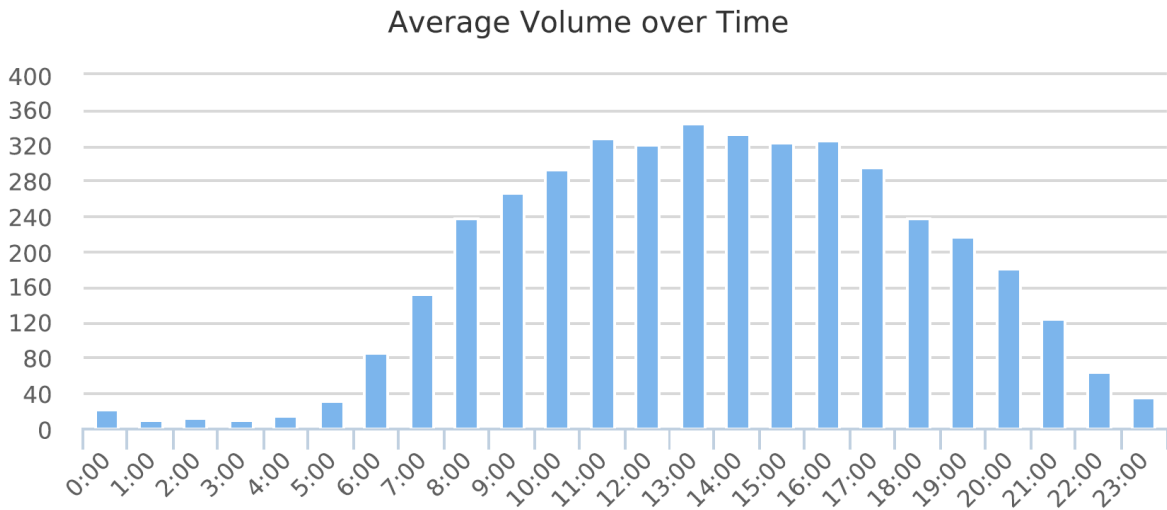
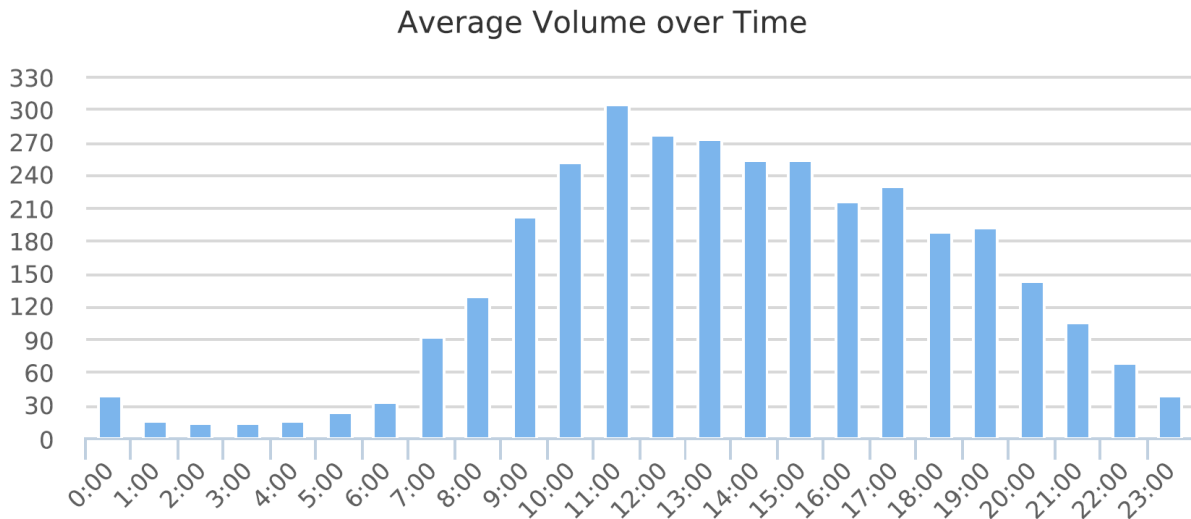


Figure 9 Average Volume per Hour from August 12<sup>th</sup> to August 13<sup>th</sup> and August 16<sup>th</sup> to August 17<sup>th</sup> (Eastbound)

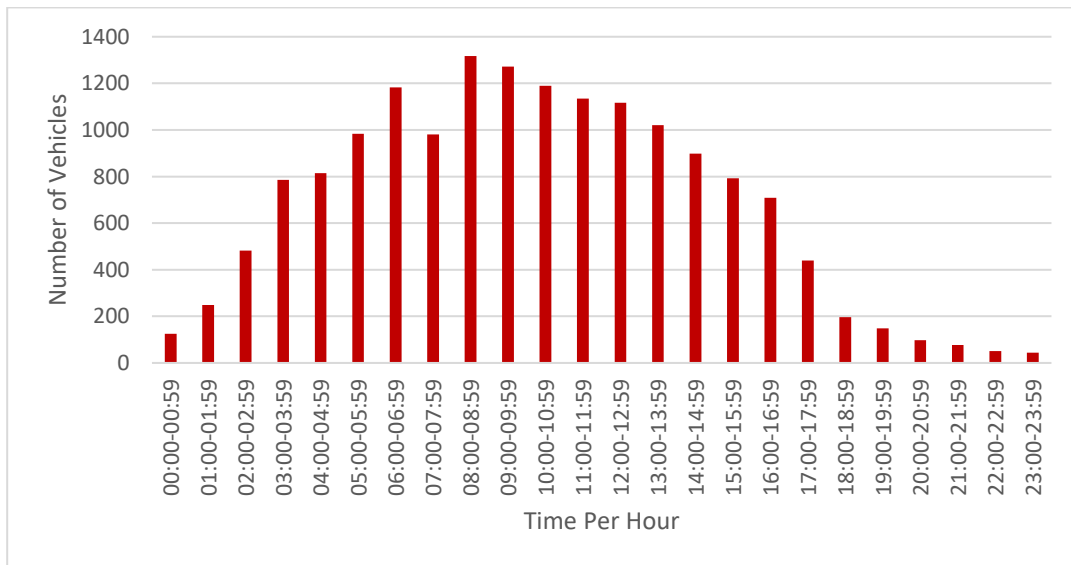


**Figure 10- Average Volume by Hour from August 14<sup>th</sup> to August 15<sup>th</sup> (Eastbound)**

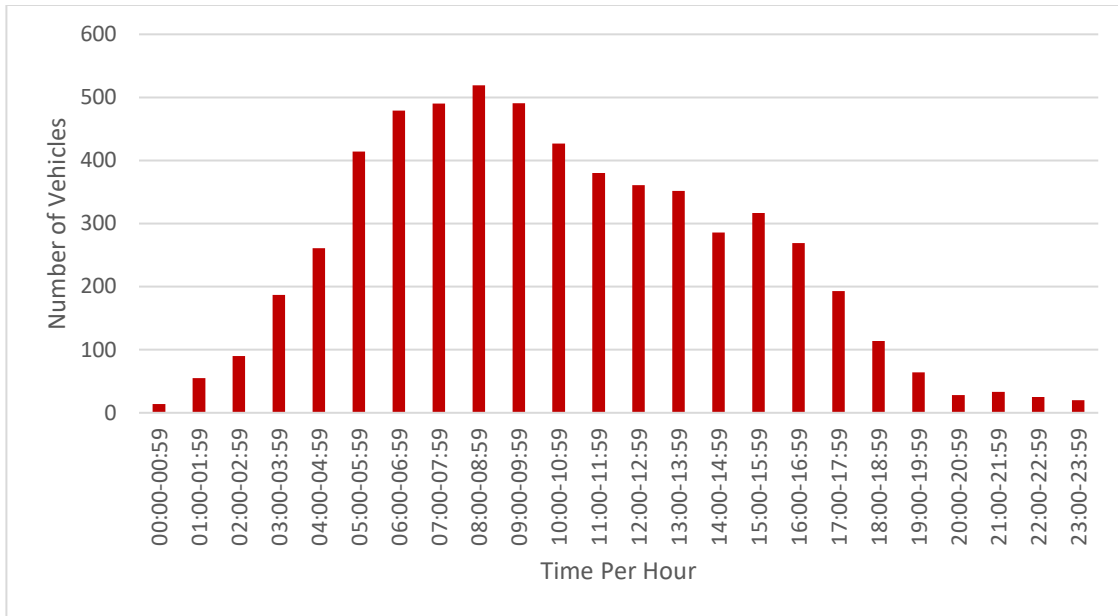
As shown in Figure 10, on weekdays, peak traffic occurs from 1:00pm to 2:59pm in the eastbound direction. Figure 11 shows that on weekends, the peak occurs between 11:00am and 11:59am in the eastbound direction.

### 3.2 Westbound Volume by Hour

The data collected from August 19<sup>th</sup> to August 20<sup>th</sup> and August 23<sup>rd</sup> to August 25<sup>th</sup> (weekdays) and August 21<sup>st</sup> and 22<sup>nd</sup> (weekend) are used to analyze the average traffic volume at different times of the day as shown in Figure 12 and Figure 13, respectively.



**Figure 11- Average Volume by Hour from August 19<sup>th</sup> to August 20<sup>th</sup> and August 22<sup>nd</sup> to August 25<sup>th</sup>, 2021 (Westbound)**



**Figure 12- Average Volume by Hour from August 21<sup>st</sup> to August 22<sup>nd</sup> (Westbound)**

As shown in Figure 12, peak traffic occurs in the morning from 8:00am to 10:00am on the weekday in the westbound direction. On the weekend shown in Figure 13 a similar pattern was shown, there was a spike from 7:00am to 10:00am.

#### **4.0 Conclusion**

The traffic study conducted on Hugel Avenue for both eastbound and westbound directions was carried out from August 11<sup>th</sup> to August 25<sup>th</sup>, 2021. From the speed analysis, it was determined that 94.5% and 97.1% of vehicles were travelling within the accepted speed limit for the eastbound and westbound directions, respectively. In addition, from the volume analysis, it was determined that the peak traffic hours were around the morning in the eastbound and direction. It was also determined that the peak traffic occurred around the morning in the westbound direction.