

Traffic Data Analysis

Harbourview Drive
Eastbound and Westbound



Town of Midland
Engineering Department

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1.0 Introduction

A traffic count was conducted from September 9th, 2021, to September 15th, 2021, on Harbourview Drive for both eastbound and westbound directions with the speed display turned on. 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 Harbourview Drive 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	1064 Harbourview Drive, Midland, ON	8:00am on September 8 th – 12:00pm on September 15 th , 2021
Westbound	1064 Harbourview Drive, Midland, ON	12:00pm September 15 th , 2021 – 7:00am on September 23 rd , 2021

1.2 Traffic Trailer

The traffic trailer used was model ATS-3 as shown in Figure 1. The traffic trailer is set to not show the speed as the display was turned off for the duration of this location. The data is collected and grouped into one-hour intervals.



Figure 1- Traffic Trailer

2.0 Speed Summary

The posted speed limit on Harbourview Drive 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 th Percentile Speed (km/h)	Minimum Speed (km/h)	Maximum Speed(km/h)
Eastbound	51.48	58.59	10	99.0
Westbound	51.24	58.51	10	105.0

2.1 Eastbound Speed Analysis

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

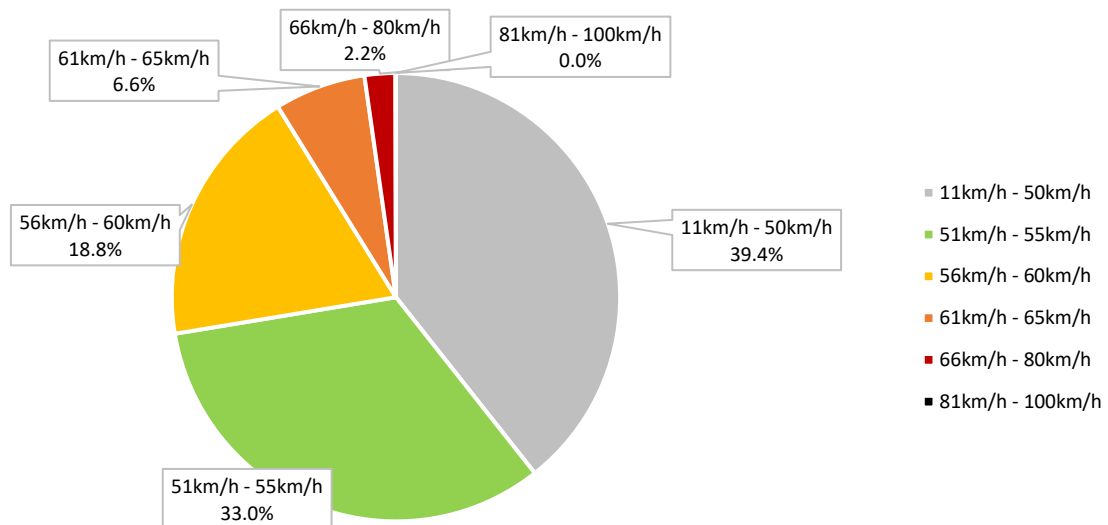


Figure 2- Harbourview Drive Eastbound

Figure 2 above shows that 39.4% of vehicles were travelling below the posted speed limit, 51.8% of vehicles were travelling between 51-60 km/h, and 8.8% of vehicles were travelling above 60km/h. Considering the accepted speed limit is 10km/h over the posted speed limit, a total of 91.2% of vehicles were travelling within the accepted speed limit in the eastbound direction.

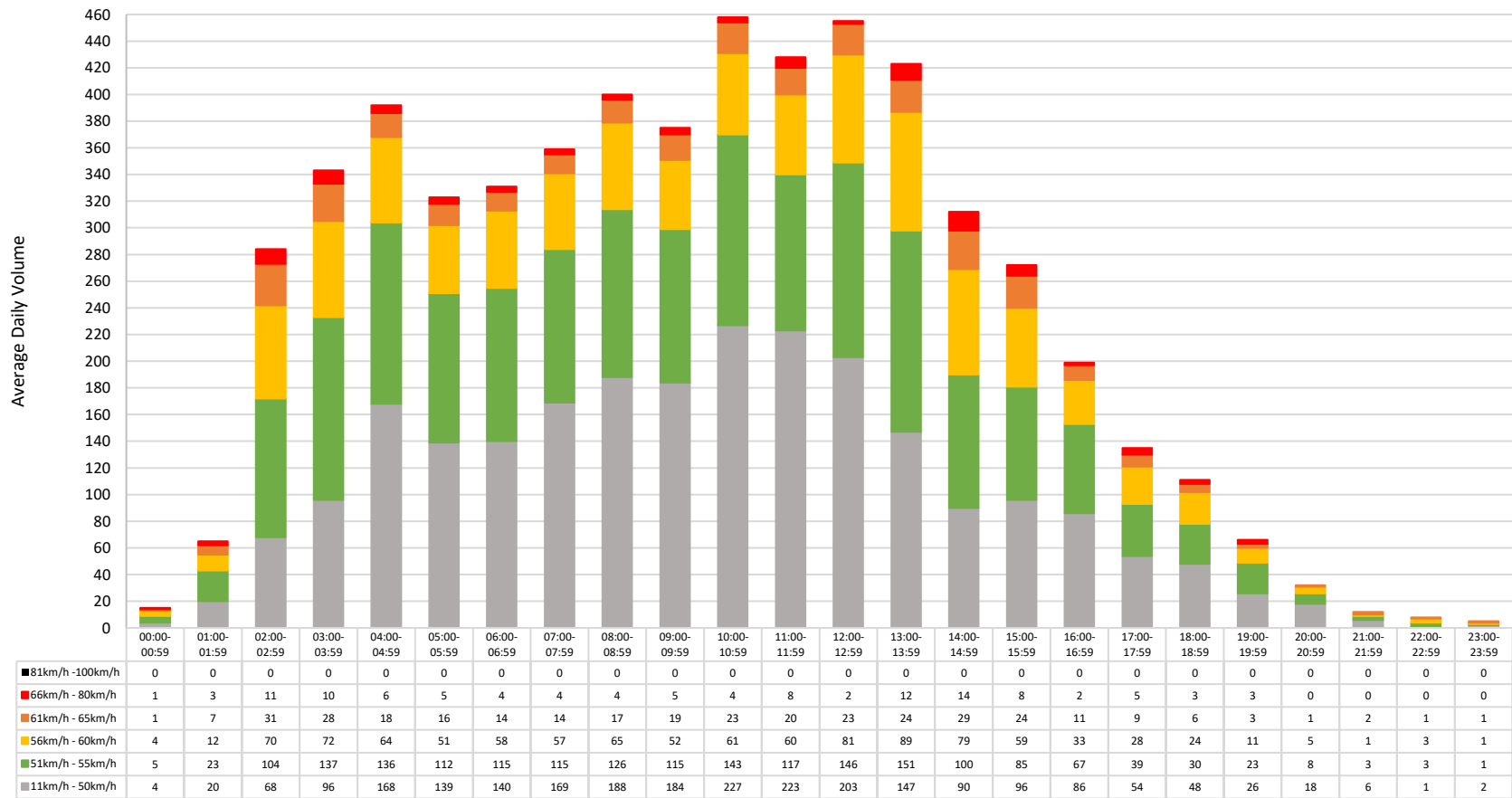


Figure 3- Speed by Hour Analysis for Eastbound Weekdays

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 in the morning and declined throughout the afternoon. It reached its peak from 10:00am to 1:00pm and begins to decline again. There was also an additional spike at 4:00am.

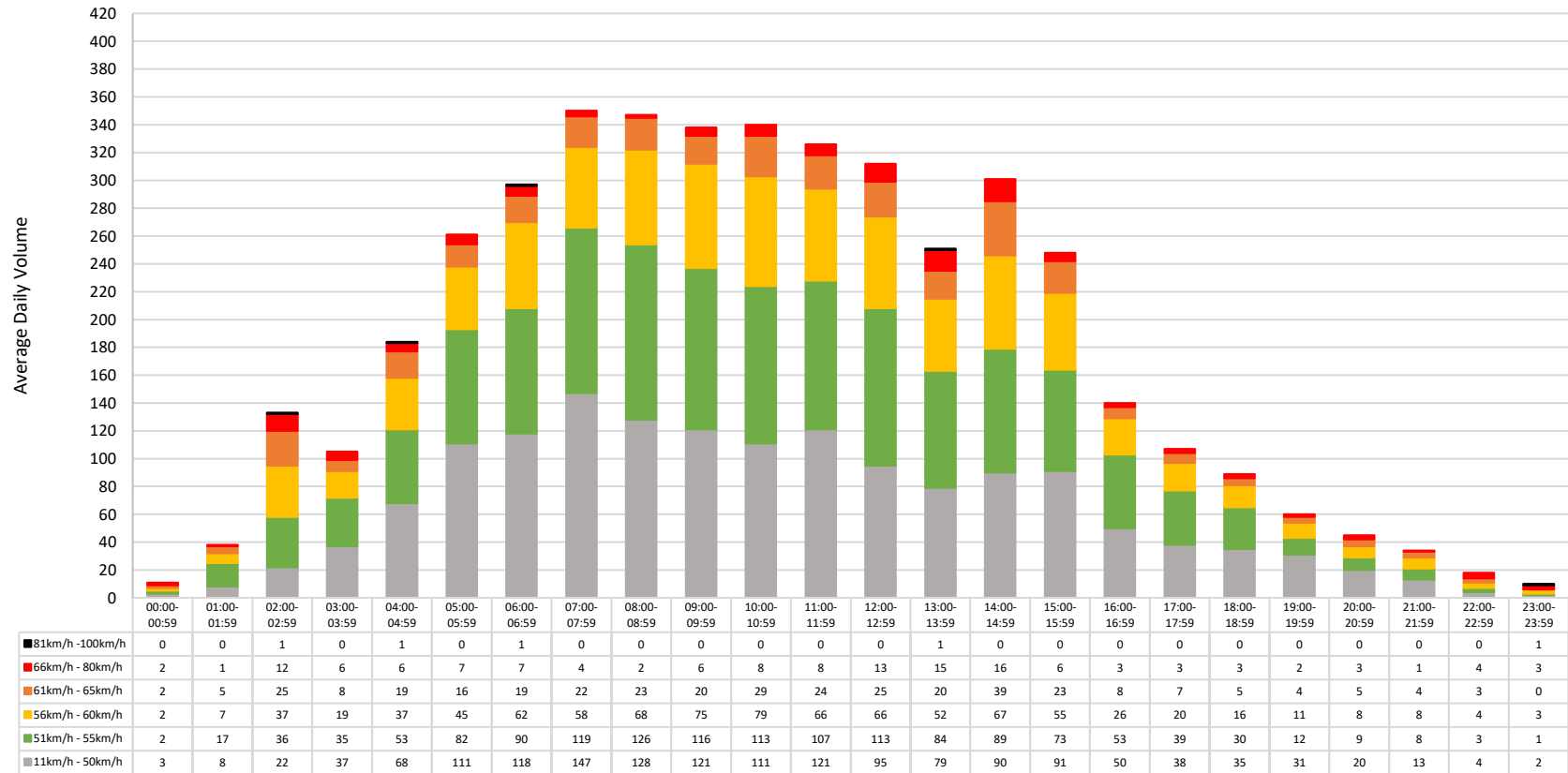


Figure 4 Speed by Hour Analysis for Eastbound Weekends

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 5:00 am before beginning to decline again at 3:00pm. The speeding reached a peak from 7:00am until 10:00am.

2.2 Westbound Speed Analysis

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

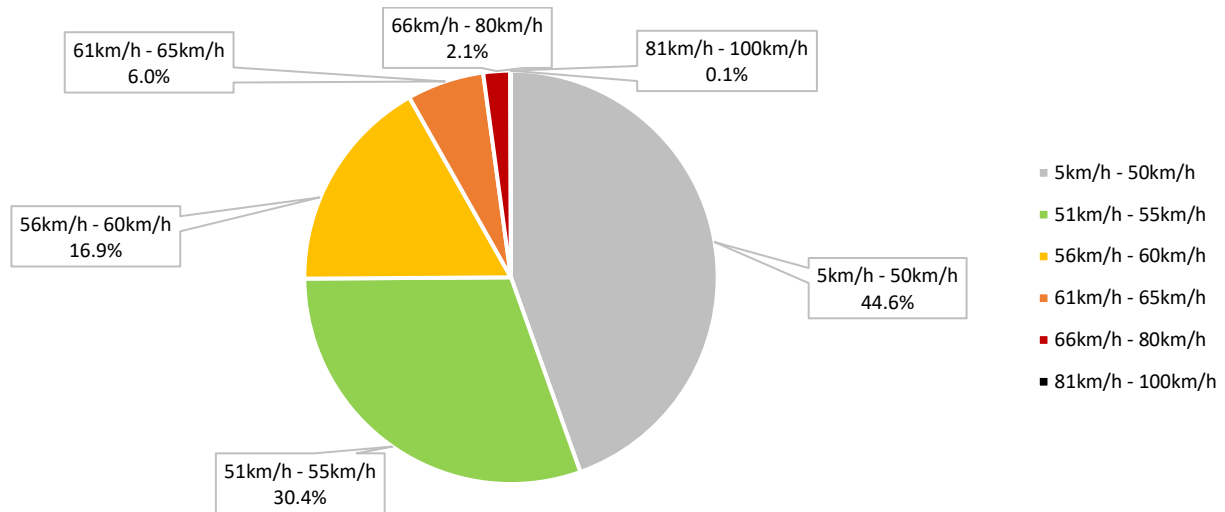


Figure 5- Harbourview Drive Westbound

Figure 5 above shows that 44.6% of vehicles were travelling below the posted speed limit, 47.3% of vehicles were travelling between 51-60 km/h, and 8.2% of vehicles were travelling above 60km/h. Considering the accepted speed limit is 10km/h over the posted speed limit, a total of 91.9% of vehicles were travelling within the accepted speed limit in the westbound direction.

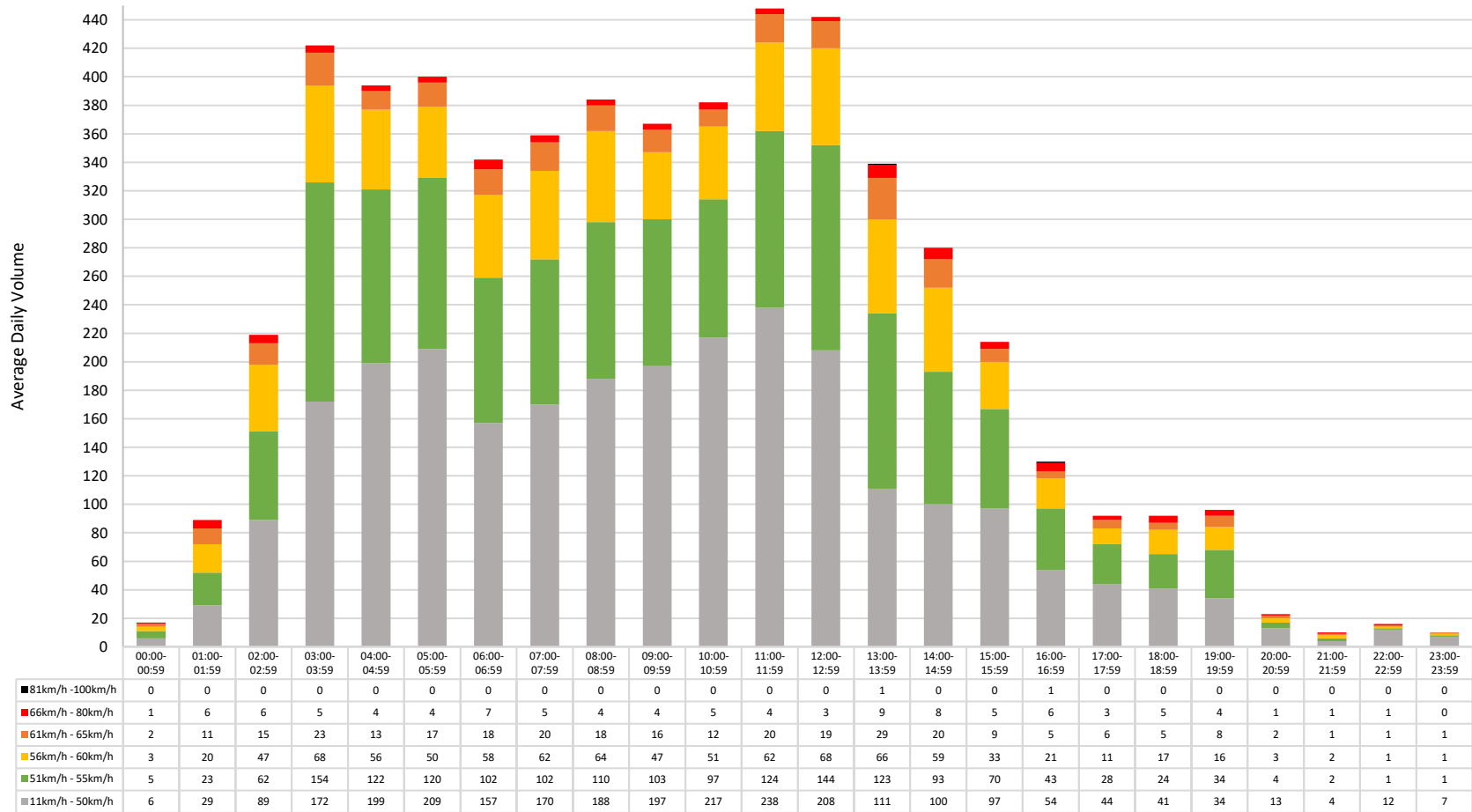


Figure 6- Speed by Hour Analysis for Westbound Weekdays

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 increased throughout the day until it reached its peak from 11:00am to 12:00pm and begins to decline again. There is an additional spike in speeding from 3:00am until 6:00am.

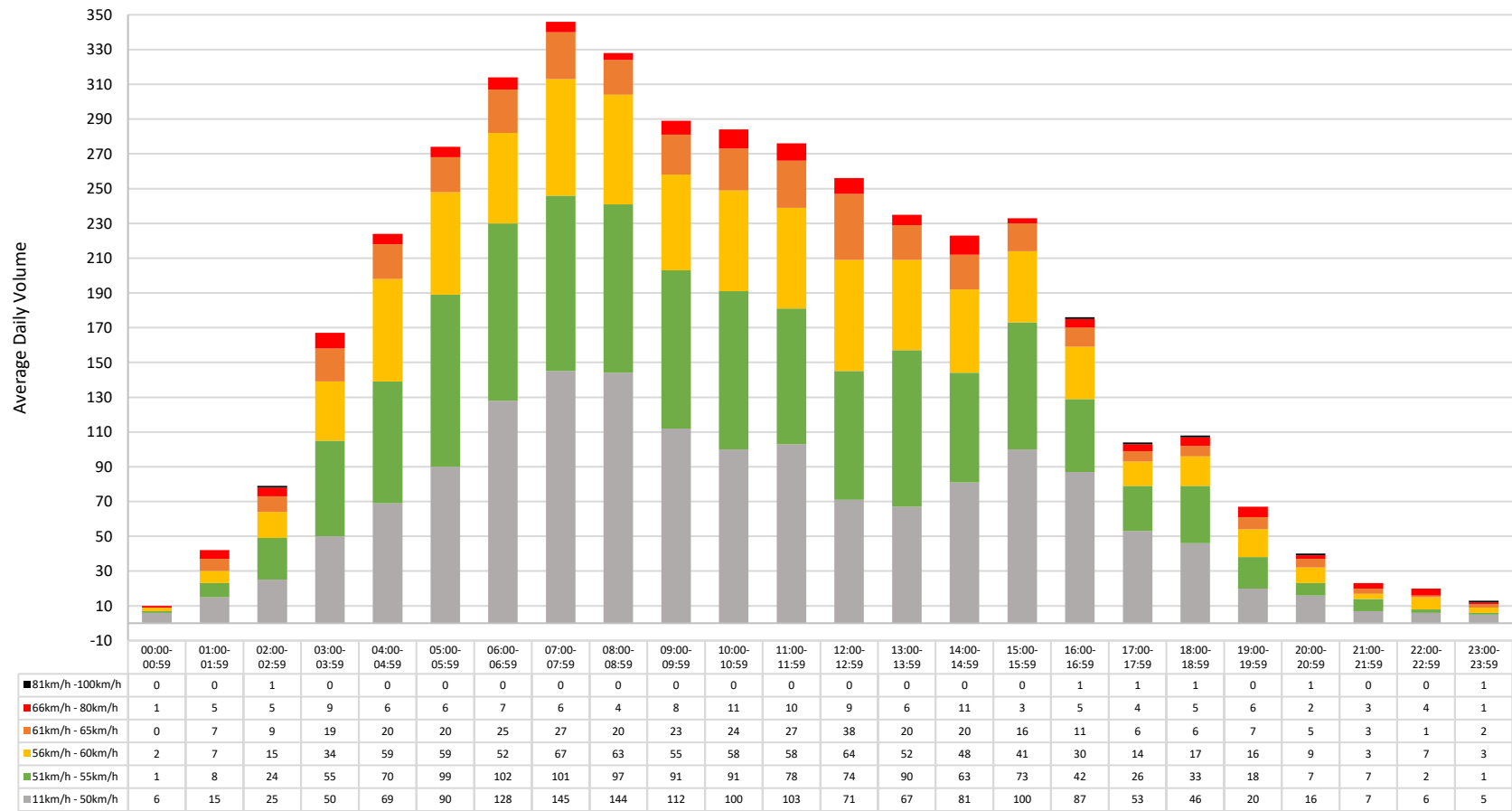


Figure 7- Speed by Hour Analysis for Westbound Weekends

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 8:00am. The speeding reached a peak from 7:00am until 8:00am.

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 and eastbound direction on weekdays and weekends having spikes from 6:00am to 10:00am.

In addition, the traffic trailer detected that 54.8% of vehicles slowed down when approaching the trailer in the eastbound direction and 67.8% slowed down in westbound direction. These numbers show that the traffic trailer influenced traffic calming.

3.0 Traffic Volume

Table 3 shows the average daily volume on Harbourview Drive for eastbound and westbound directions.

Table 3- Volume Summary

Direction	Period	Average Daily Traffic Volume
Eastbound	September 9 th to September 10 th and September 13 th to September 14 th (Monday, Tuesday, Thursday, Friday)	5775.25
Eastbound	September 11 th to September 12 th (Saturday, Sunday)	4249.0
Westbound	September 15 th , 16 th , 17 th , 20 th and 22 nd (Wednesday, Thursday, Friday, Monday, Tuesday)	5108.6
Westbound	September 18 th and 19 th (Saturday, Sunday)	4111.5

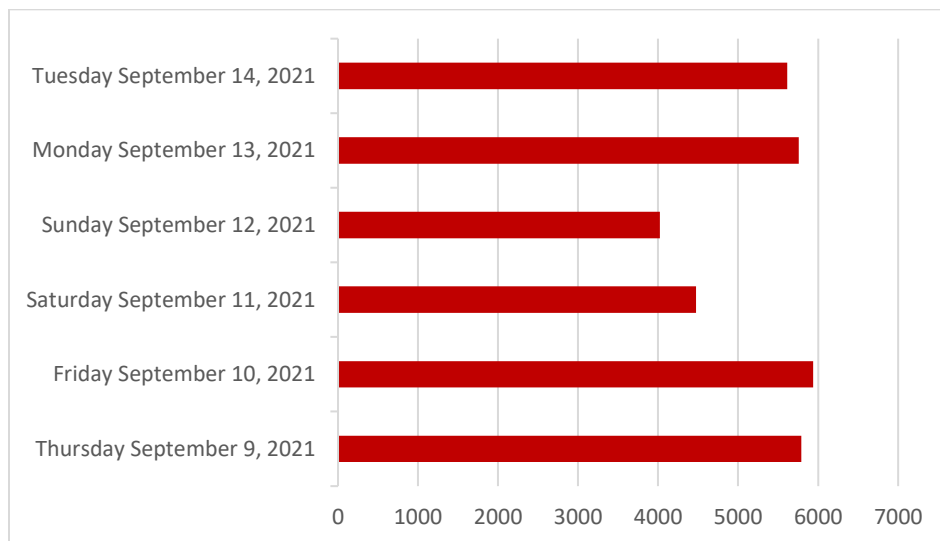


Figure 8- Total Volume per Day (Eastbound)

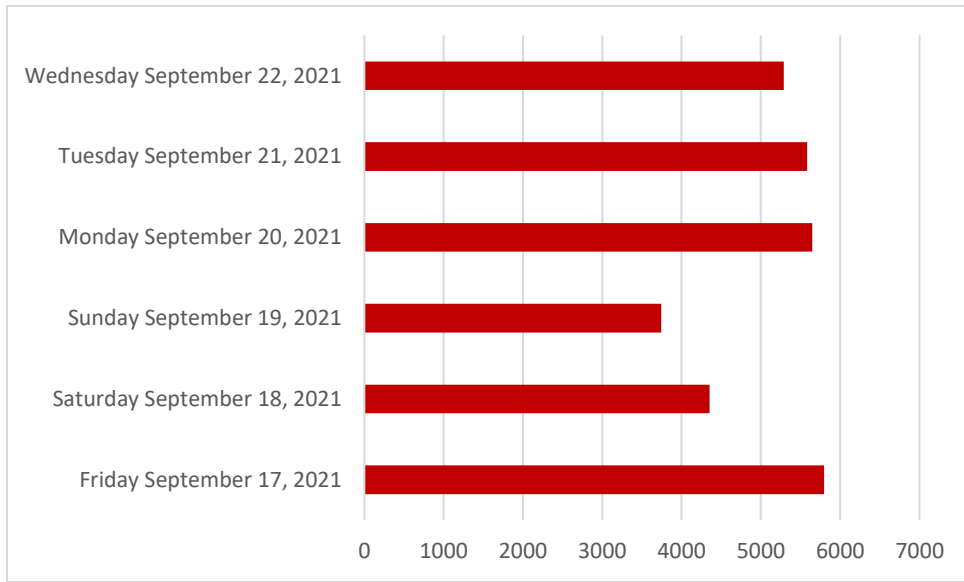


Figure 9- Total Volume per Day (Westbound)

3.1 Eastbound Volume by Hour

The data collected from September 9th to September 10th and September 13th to September 14th (weekdays) and September 11th to September 12th (weekend) are used to analyze the average traffic volume at different times of the day as shown in Figure 10 and Figure 11, respectively.

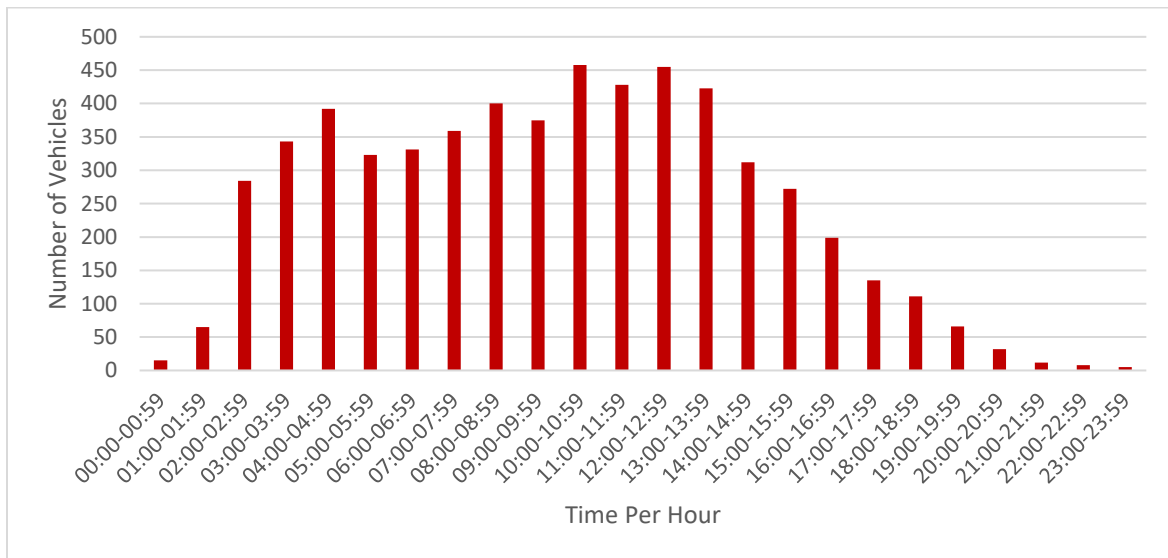


Figure 10 Average Volume per Hour from September 9th to September 10th and September 13th to September 14th (Eastbound)

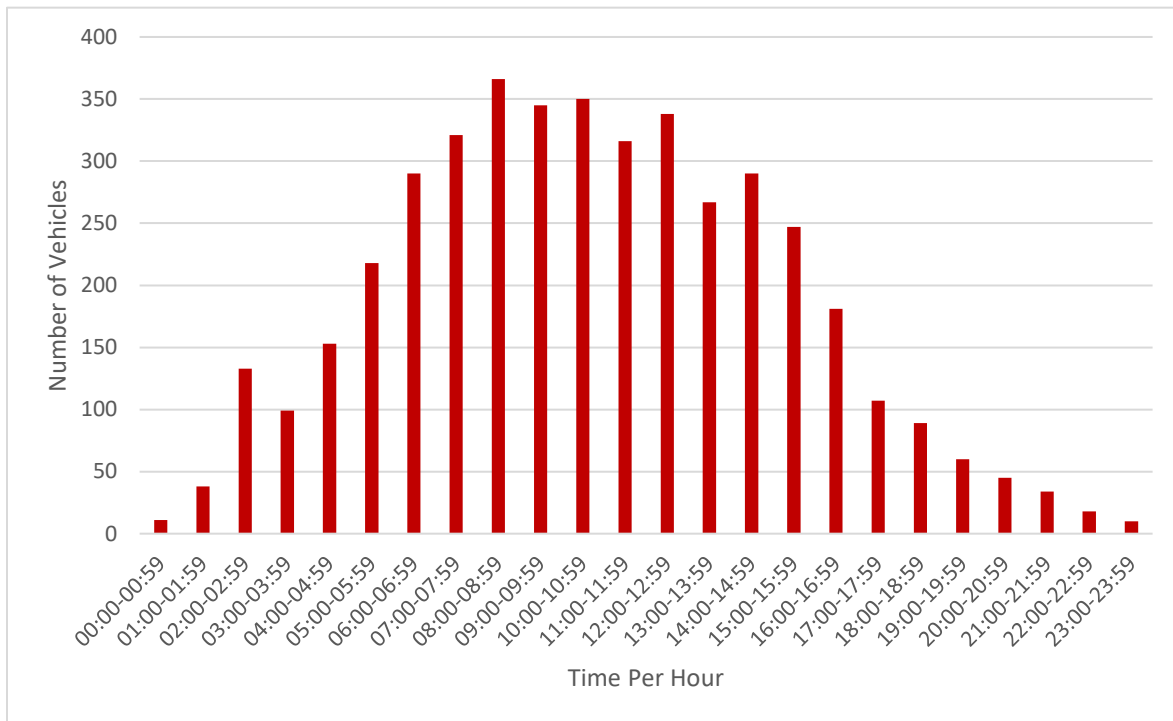


Figure 11- Average Volume by Hour from September 11th to September 12th (Eastbound)

As shown in Figure 10, on weekdays, peak traffic occurs from 10:00am to 1:00pm in the eastbound direction. Figure 11 shows that on weekends, the peak occurs between 8:00am and 12:00pm in the eastbound direction.

3.2 Westbound Volume by Hour

The data collected from September 16th, 17th, 20th, 21st and 22nd (weekdays) and September 18th and 19th (weekend) are used to analyze the average traffic volume at different times of the day as shown in Figure 12 and Figure 13, respectively.

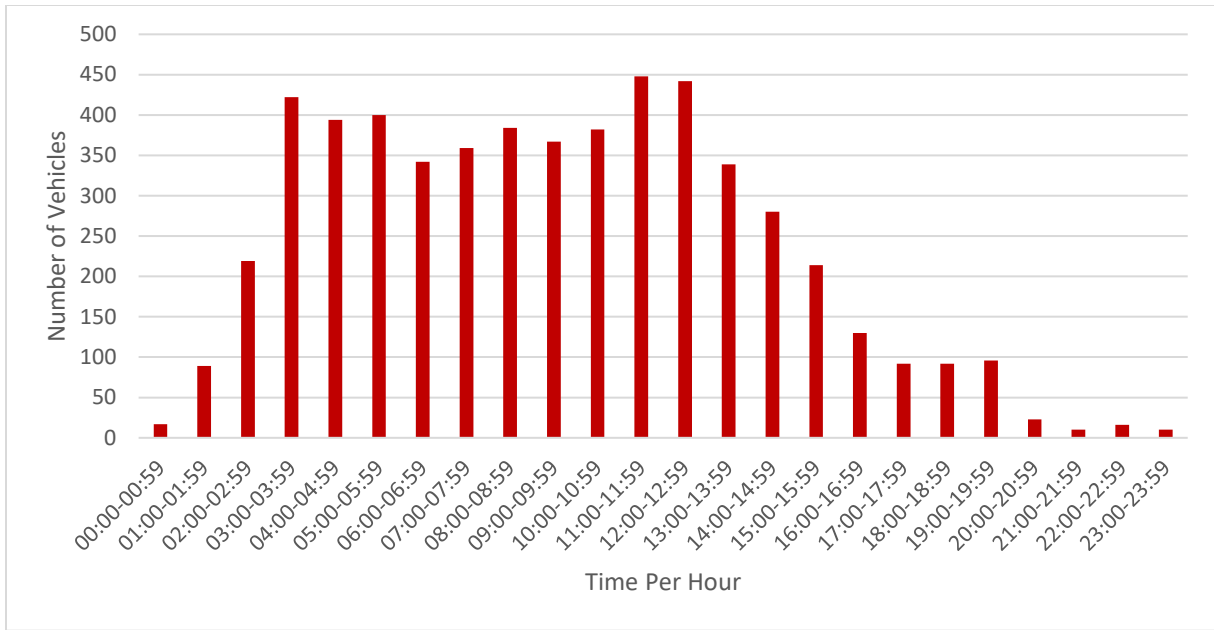


Figure 12- Average Volume by Hour from September 16th, 17th, 20th, 21st and 22nd (Westbound)

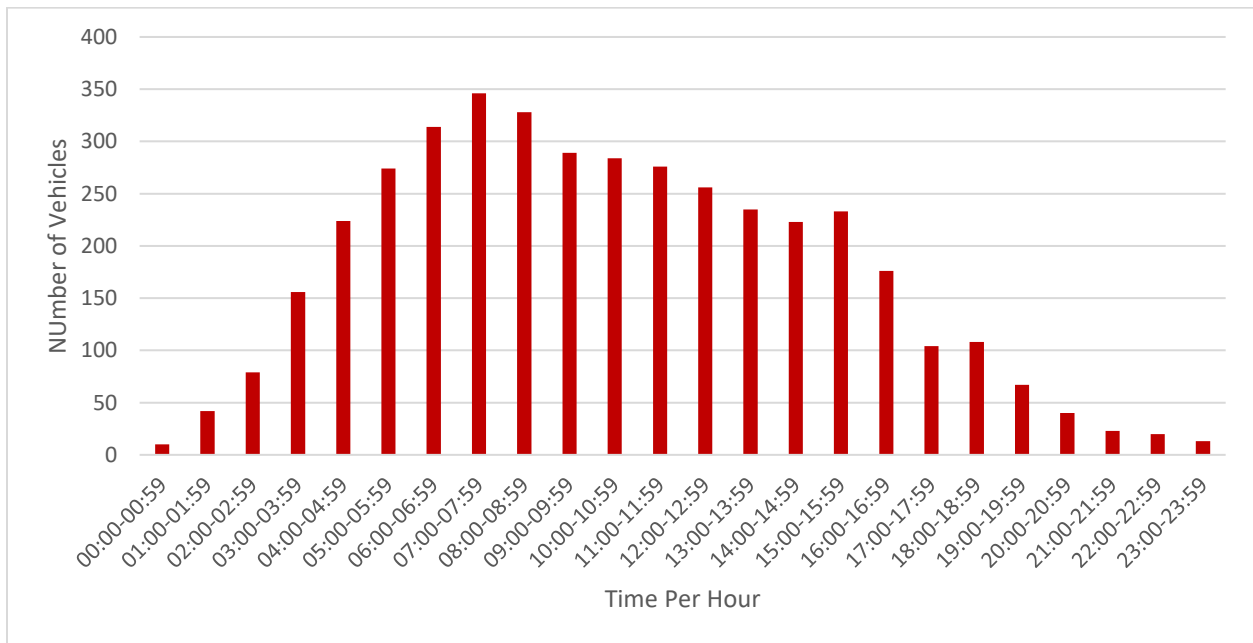


Figure 13- Average Volume by Hour from September 18th and 19th (Westbound)

As shown in Figure 12, peak traffic occurs in the morning from 5:00am to 12:00am on the weekday in the westbound direction and there was a spike at 3:00am. On the weekend shown in Figure 13 a similar pattern was shown, there was a spike from 7:00am.

4.0 Conclusion

The traffic study conducted on Harbourview Drive for both eastbound and westbound directions was carried out from September 8th to September 22nd. From the speed analysis, it was determined that 91.2% and 91.9% 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 early morning in the eastbound and westbound direction.