

Traffic Data Analysis

Victoria Street
Eastbound and Westbound



Town of Midland
Engineering Department

July 21st, 2021

1.0	Introduction	3
1.1	Location.....	3
1.2	Traffic Trailer	3
2.0	Speed Summary	4
2.1	Eastbound Speed Analysis	4
2.2	Westbound Speed Analysis.....	7
3.0	Traffic Volume.....	10
3.1	Eastbound Volume by Hour	11
3.2	Westbound Volume by Hour	12
4.0	Conclusion.....	13
	Figure 1- Traffic Trailer	3
	Figure 2- Victoria Street Eastbound.....	4
	Figure 3- Speed by Hour Analysis for Eastbound Weekdays	5
	Figure 4 Speed by Hour Analysis for Eastbound Weekends	6
	Figure 5- Victoria Street Westbound.....	7
	Figure 6- Speed by Hour Analysis for Westbound (July 15 th to July 16 th and July 19 th to July 20 th , 2021)	8
	Figure 7- Speed by Hour Analysis for Westbound (July 17 th to July 18 th , 2021).....	9
	Figure 8- Total Volume per Day (Eastbound)	10
	Figure 9- Total Volume per Day (Westbound).....	11
	Figure 10 Average Volume per Hour from June 17 th to June 18 th and June 21 st to June 22 nd (Eastbound) .	11
	Figure 11- Average Volume by Hour from June 19 th to June 20 th (Eastbound)	12
	Figure 12- Average Volume by Hour from July 15 th to July 16 th and July 19 th to July 20 th , 2021 (Westbound)	12
	Figure 13- Average Volume by Hour from July 18 th to July 19 th (Westbound).....	13
	Table 1- Locations of Traffic Trailer	3
	Table 2- Speed Summary.....	4
	Table 3- Volume Summary	10

1.0 Introduction

A traffic count was conducted from July 14th, 2021, to July 21st, 2021, on Victoria Street 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 Victoria Street 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	687 Victoria Street, Midland, ON	8:00am on July 21 st , 2021– 8:00am on July 21 st , 2021
Westbound	748 Victoria Street, Midland, ON	9:00am July 14 th , 2021 – 8:00am on July 21 st , 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 Victoria Street 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	56.47		10	105.0
Westbound	42.91	49.95	10	78.0

2.1 Eastbound Speed Analysis

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

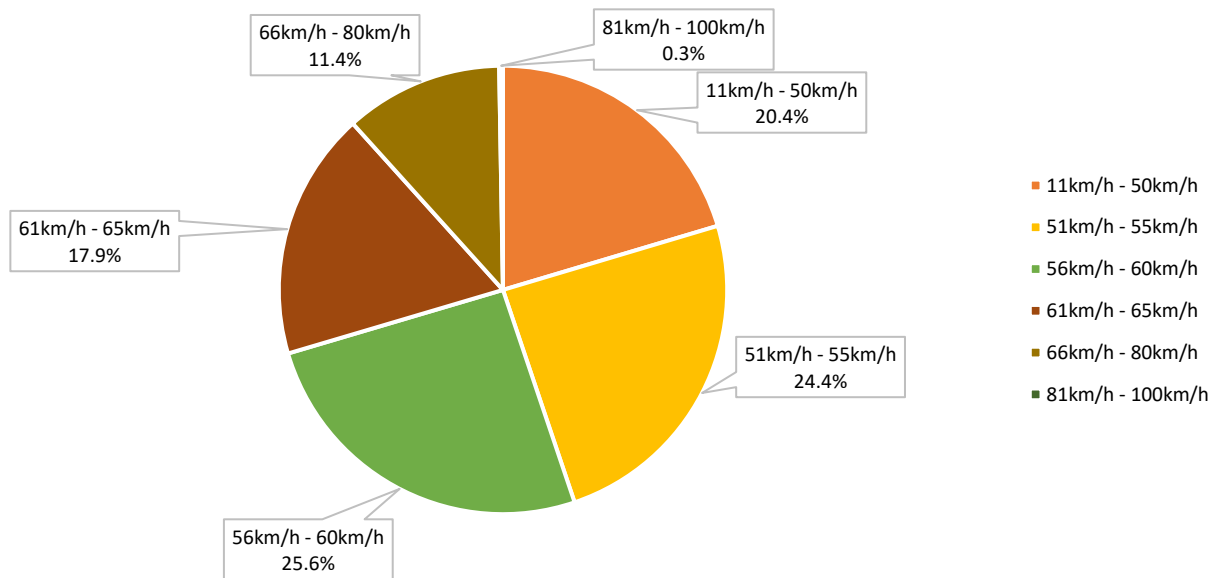


Figure 2- Victoria Street Eastbound

Figure 2 above shows that 20.4% of vehicles were travelling below the posted speed limit, 50% of vehicles were travelling between 51-60 km/h, and 29.6% of vehicles were travelling above 60km/h. Considering the accepted speed limit is 10km/h over the posted speed limit, a total of 70.4% of vehicles were travelling within the accepted speed limit in the eastbound direction.

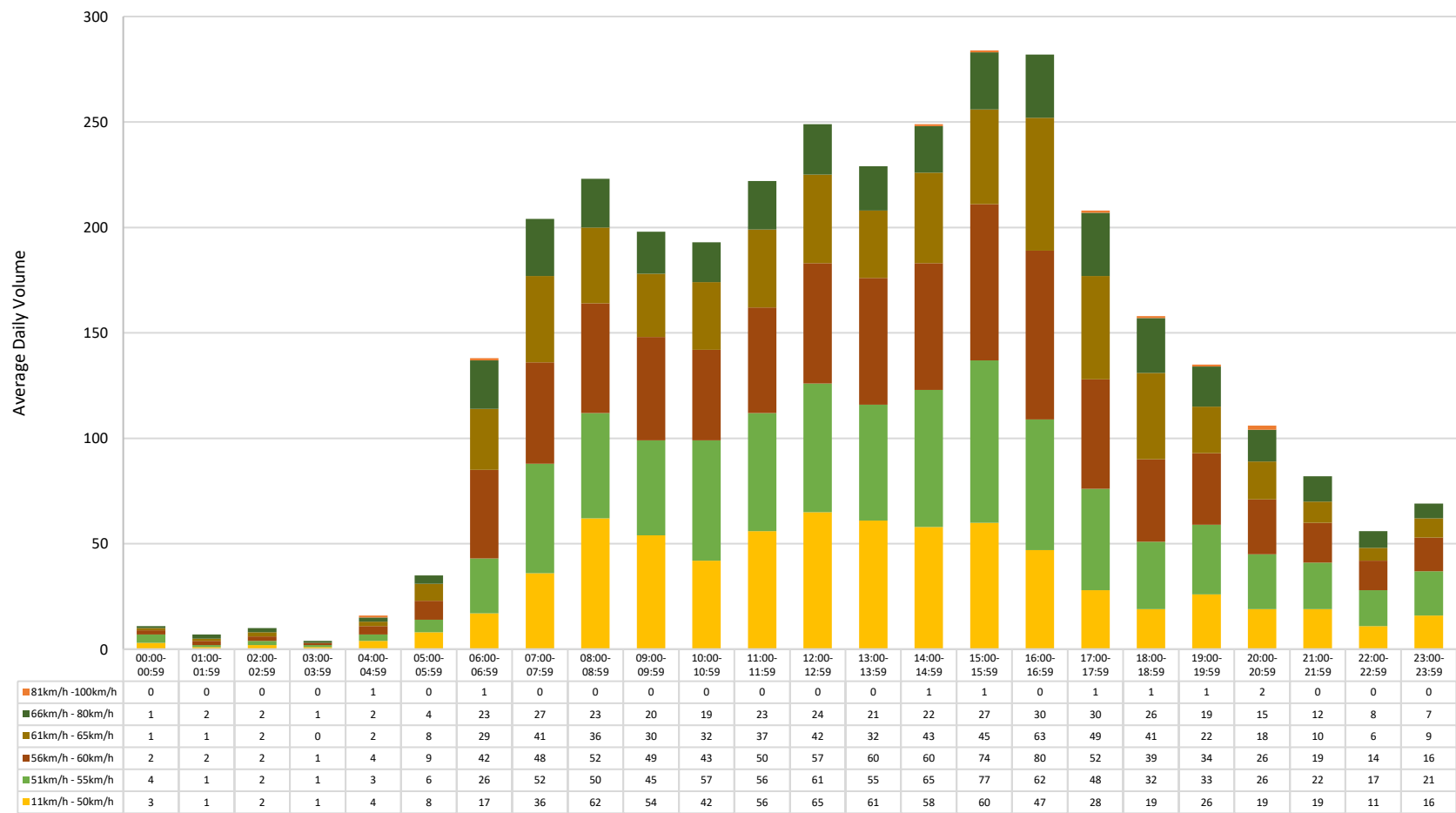


Figure 3- Speed by Hour Analysis for Eastbound Weekdays

Figure 3 above is the speed by hour graph used to determine the time where most speeding occurs on weekdays (June 17th to June 18th and June 21st to June 22nd). 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.

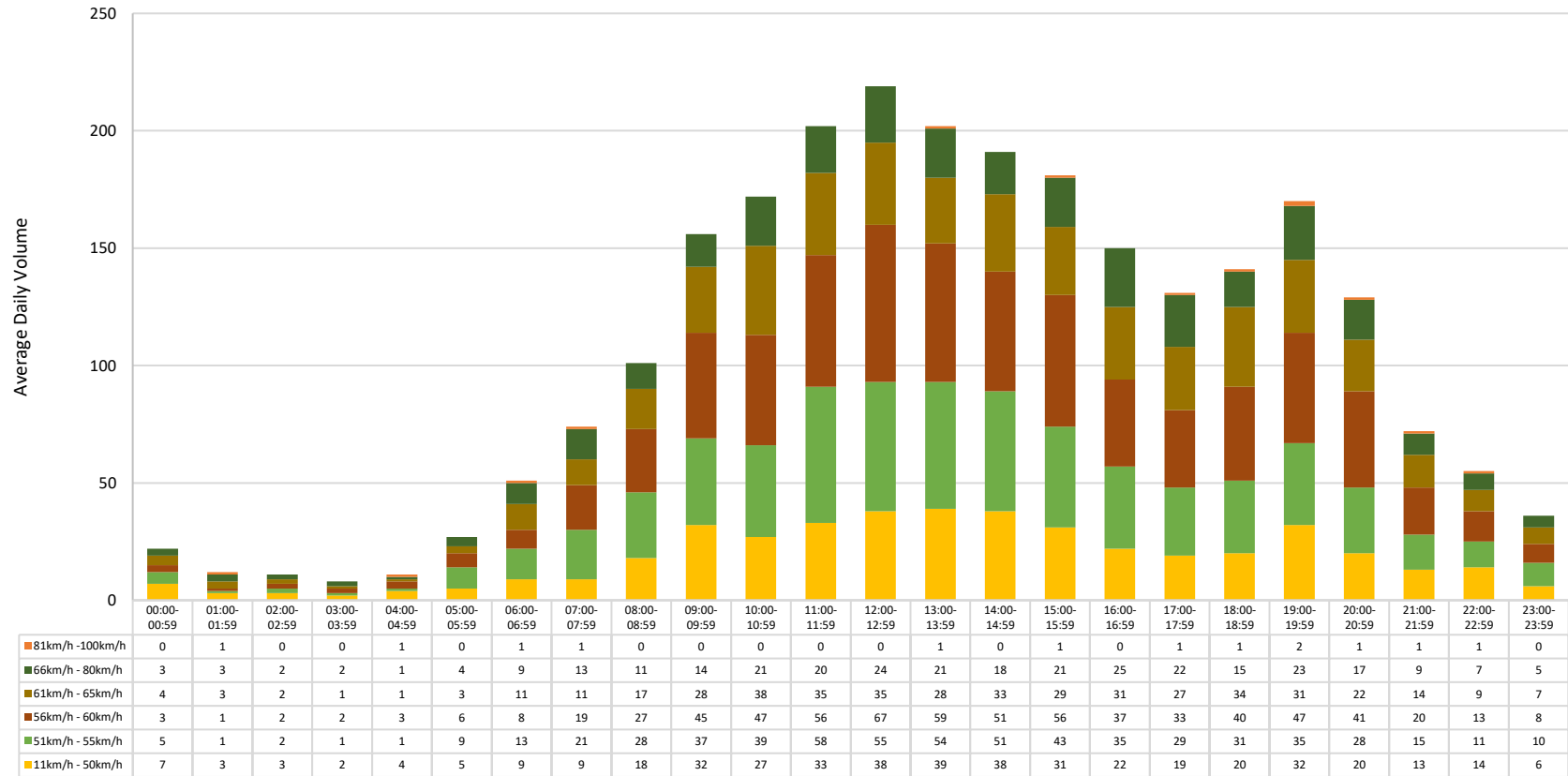


Figure 4 Speed by Hour Analysis for Eastbound Weekends

Figure 4 above is the speed by hour graph used to determine the time where most speeding occurs on the weekend (June 19th to June 20th). The data shows that speeding was low at night and began to increase around 6:00 am before beginning to decline again at 10:00pm. The speeding reached a peak from 4:00pm until 7:59pm

2.2 Westbound Speed Analysis

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

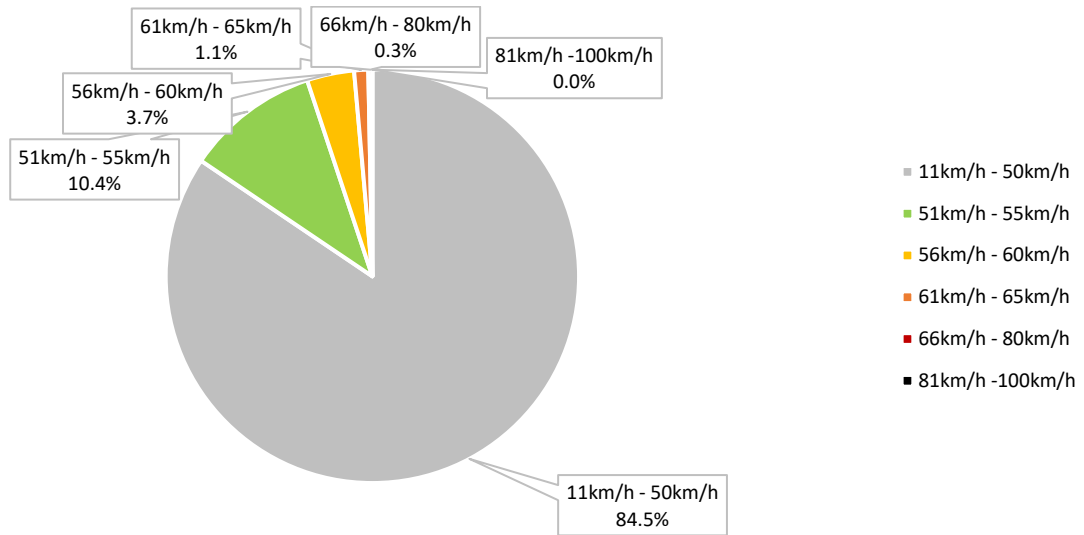


Figure 5- Victoria Street Westbound

Figure 5 shows that 84.5% of the vehicles were travelling below the posted speed limit, 14.1% of vehicles were travelling between 51-60 km/h, and 1.4% of vehicles were travelling above 60km/h. Considering the accepted speed limit is 10km/h over the posted speed limit, a total of 98.6% of vehicles were driving within the accepted speed limit.

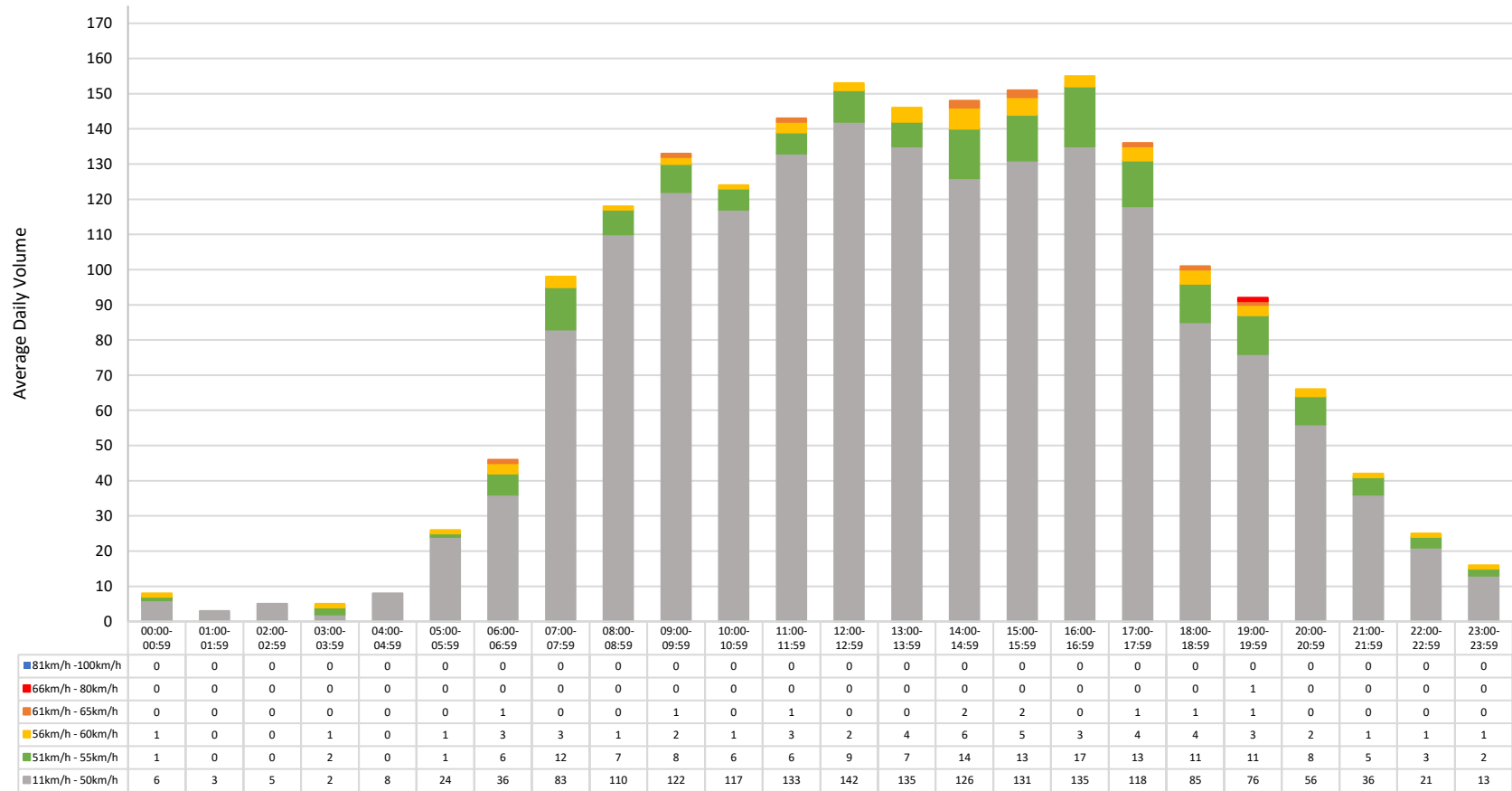


Figure 6- Speed by Hour Analysis for Westbound (July 15th to July 16th and July 19th to July 20th, 2021)

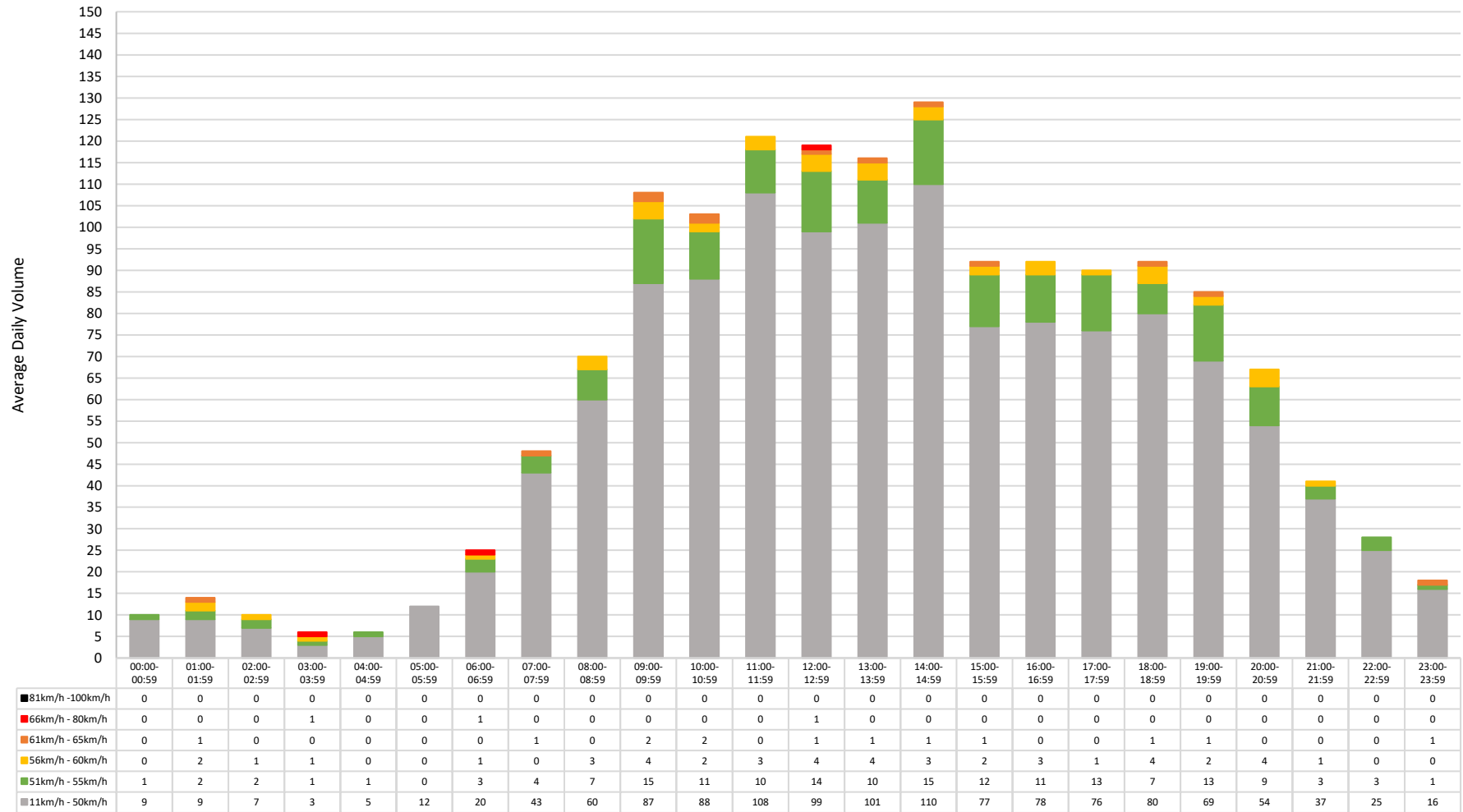


Figure 7- Speed by Hour Analysis for Westbound (July 17th to July 18th, 2021)

Figure 6 (weekday) and Figure 7 (weekend) above are the speed by hour graphs used to determine the time where most speeding occurs. It should be noted that here, instances where the speed was greater than 10km/h above the speed limit were considered with regards to speeding trends. The data shows that speeding was relatively inconsistent as there was very little speeding overall and so many periods had no significant speeding at all. On the weekdays, there were spikes in speeding from 2:00pm to 3:59pm and from 5:00pm to 7:59pm. On the weekend, there were peaks in speeding from 9:00am until 10:59pm.

In addition, the traffic trailer detected that 69.74% of vehicles slowed down when approaching the trailer in the eastbound direction and 42.75% slowed down in westbound direction. These percentages show that the trailer is influencing traffic calming to a certain extent. A reason why this value was relatively low in the westbound direction is that it was located on top of a hill so it would take drivers more time to see the traffic trailer.

3.0 Traffic Volume

Table 3 shows the average daily volume on Victoria Street for eastbound and westbound directions.

Table 3- Volume Summary

Direction	Period	Average Daily Traffic Volume
Eastbound	July 22 nd to July 23 rd and July 26 th to July 27 th (Monday, Tuesday, Thursday, Friday)	3259.5
Eastbound	July 24 th to July 25 th (Saturday, Sunday)	2457.5
Westbound	July 15 th to July 16 th and July 19 th to July 20 th (Monday, Tuesday, Thursday, Friday)	1935.5
Westbound	July 17 th to July 18 th (Saturday, Sunday)	1444.5

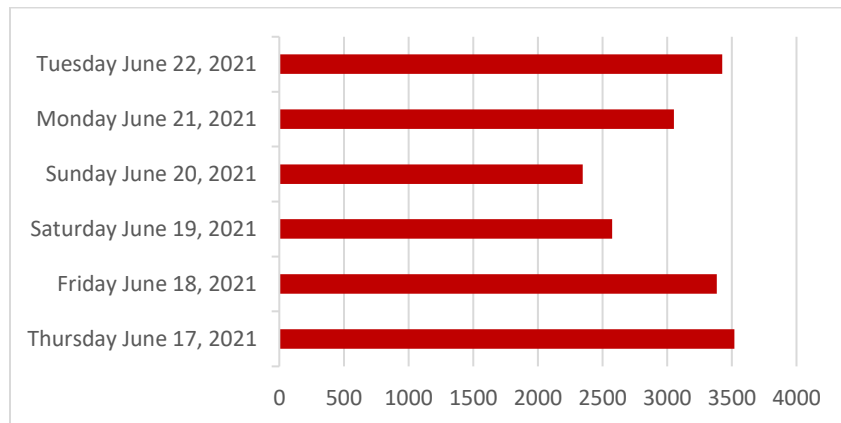


Figure 8- Total Volume per Day (Eastbound)

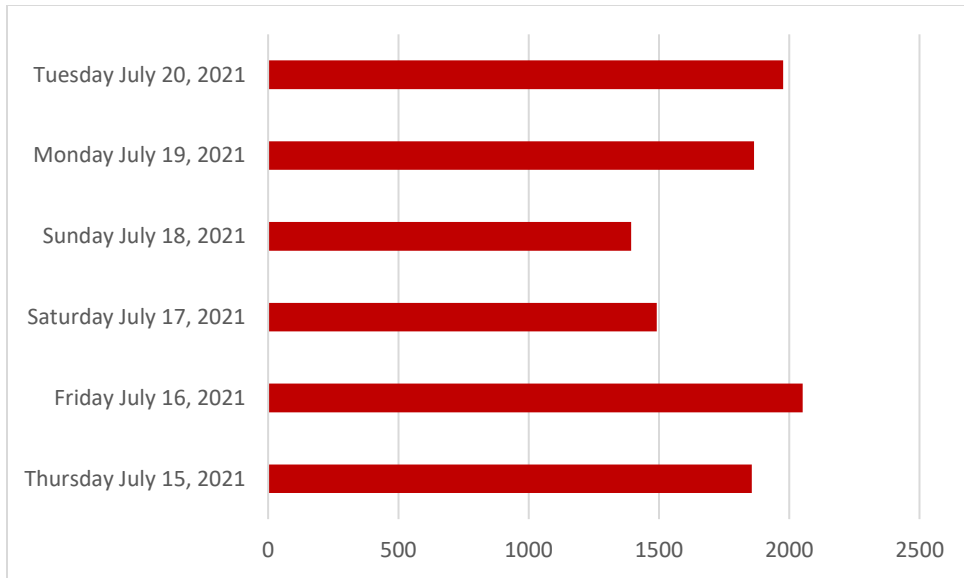


Figure 9- Total Volume per Day (Westbound)

3.1 Eastbound Volume by Hour

The data collected from July 22nd to July 23rd and July 26th to July 27th (weekdays) and July 24th to July 25th (weekend) are used to analyze the average traffic volume at different times of the day as shown in Figure 10 and Figure 11, respectively.

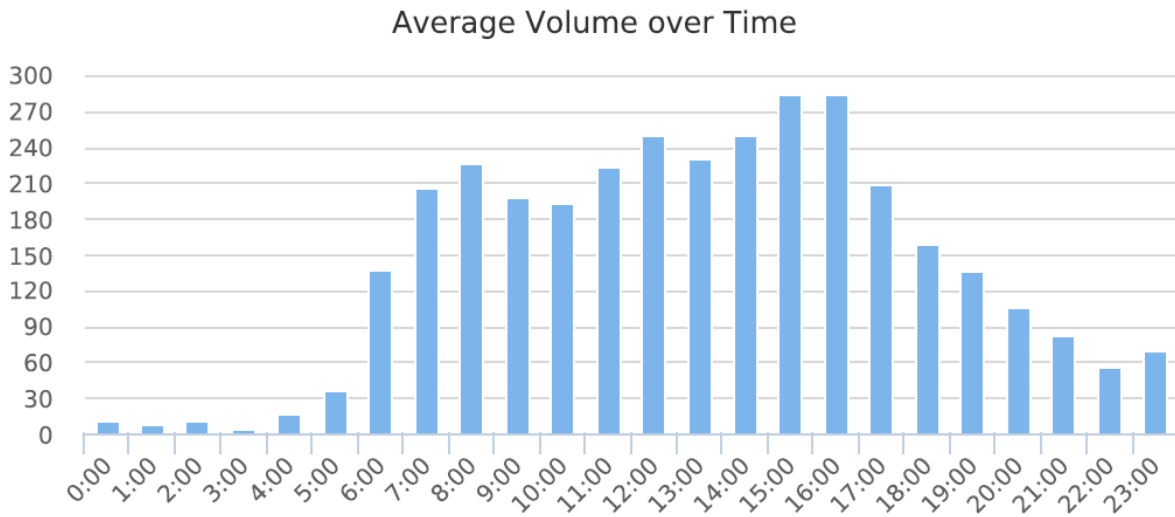


Figure 10 Average Volume per Hour from June 17th to June 18th and June 21st to June 22nd (Eastbound)

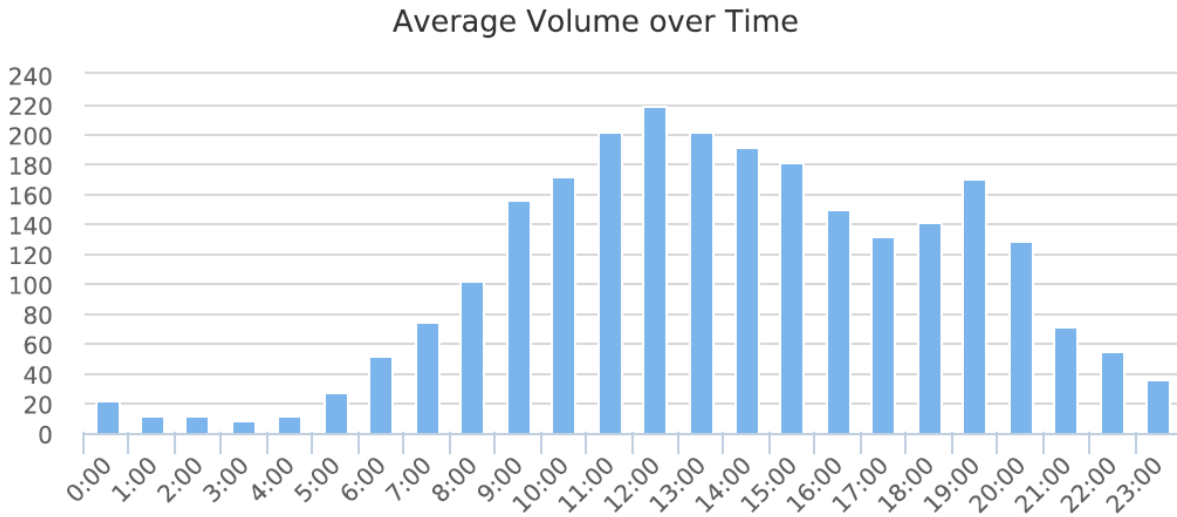


Figure 11- Average Volume by Hour from June 19th to June 20th (Eastbound)

As shown in Figure 10, on weekdays, peak traffic occurs from 3:00pm to 4:59pm in the eastbound direction. Figure 11 shows that on weekends, the peak occurs between 12:00pm and 12:59pm in the eastbound direction.

3.2 Westbound Volume by Hour

The data collected from July 15th to July 16th and July 19th to July 20th (weekdays) and from July 17th to July 18th (weekend) are used to analyze the average traffic volume at different times of the day as shown in Figure 12 and Figure 13, respectively.

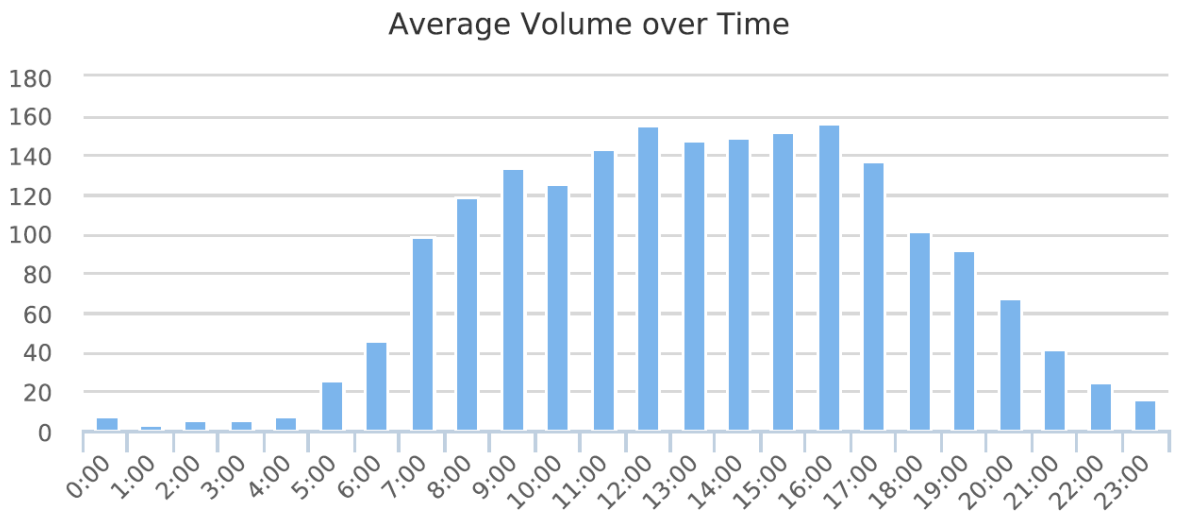


Figure 12- Average Volume by Hour from July 15th to July 16th and July 19th to July 20th, 2021 (Westbound)

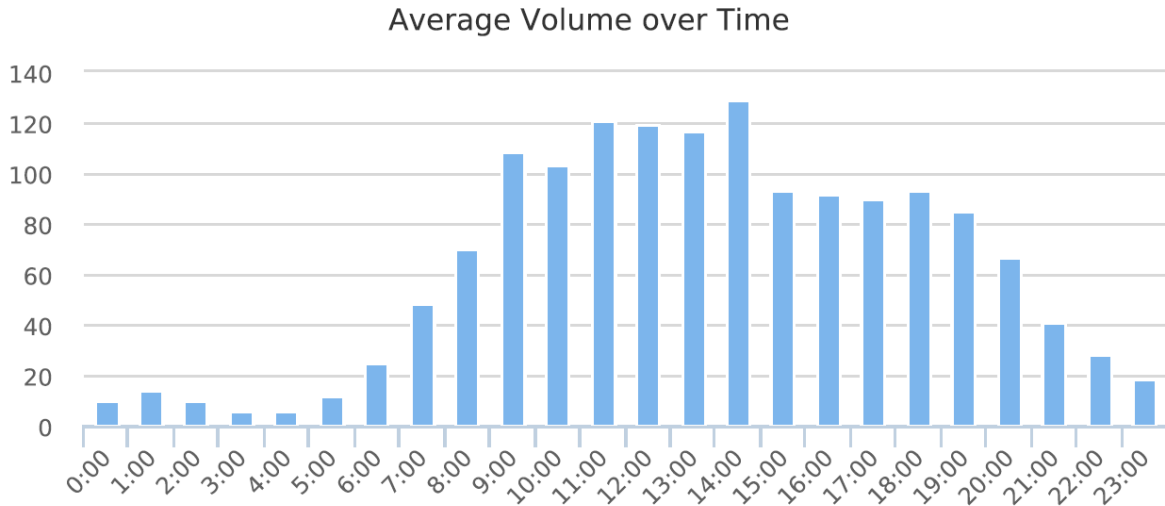


Figure 13- Average Volume by Hour from July 18th to July 19th (Westbound)

As shown in Figure 12, the volume of traffic over time forms a curve which reaches a peak from 12:00pm to 12:59pm on weekdays in the westbound direction. There are additional spikes in traffic volume from 7:00am to 9:59am and from 3:00pm until 5:59pm which correspond to typical rush hours. Figure 13 shows weekend traffic which forms an approximate curve in which peak traffic occurs from 4:00pm until 4:59pm. However, starting at 5:00pm there is an abrupt drop in traffic volume followed by a plateau until 7:00pm when the downward curve begins again.

4.0 Conclusion

The traffic study conducted on Victoria Street for both eastbound and westbound directions was carried out from July 14th to July 28th, 2021. From the speed analysis, it was determined that 70.4% and 98.6% 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 midday and mid-afternoon in the eastbound direction. It was also determined that the peak traffic occurred around the early afternoon in the westbound direction on weekdays and around midday on weekends.