

Traffic Data Analysis

Fourth St.

Southbound and Northbound



Town of Midland

Engineering Department

April 21st, 2021

1.0	Introduction	3
1.1	Location.....	3
1.2	Traffic Trailer	3
2.0	Speed Summary	4
2.1	Southbound Speed Analysis.....	4
2.2	Northbound Speed Analysis.....	5
3.0	Traffic Volume.....	6
3.1	Southbound Volume by Hour	7
3.2	Northbound Volume by Hour	8
4.0	Conclusion.....	9
	Figure 1 Traffic Trailer	3
	Figure 2 Speed by Average Volume Southbound	4
	Figure 3 Speed by Hour Analysis for Southbound	5
	Figure 4 Speed by Average Volume Northbound	5
	Figure 5 Speed by Hour Analysis for Northbound	6
	Figure 6 Total Volume per day (Northbound).....	7
	Figure 7 Total Volume per day (Southbound).....	7
	Figure 8 Total Volume by Hour (Southbound)	8
	Figure 9 Total Volume by Hour (Northbound).....	8
	Table 1 Locations of Traffic Trailer.....	3
	Table 2 Speed Summary	4
	Table 3 Volume Summary	6

1.0 Introduction

A traffic count was conducted from April 7th, 2021 to April 21st, 2021 on Fourth St for both southbound and northbound 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 Fourth St for both southbound and northbound directions. The trailer was placed on the boulevard to record the speed and volume of vehicles passing by. Table 1 below shows the location of the traffic trailer and data collection period.

Table 1 Locations of Traffic Trailer

Direction	Location	Period
Southbound	124 Fourth St, Midland, ON	9:00am on April 14 th 2021 – 1:00pm on April 21 st , 2021
Northbound	105 Fourth St, Midland, ON	9:00am on April 7 th , 2021 – 9:00am on April 14 th , 2021

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 collect data and grouped data into one-hour intervals.



Figure 1 Traffic Trailer

2.0 Speed Summary

The posted speed limit on Fourth St 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 southbound and northbound directions.

Table 2 Speed Summary

Direction	Average Speed (km/h)	85 th Percentile Speed (km/h)	Minimum Speed (km/h)	Maximum Speed(km/h)
Southbound	46.6	53.33	10	89
Northbound	50.54	57.28	10	106

2.1 Southbound Speed Analysis

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

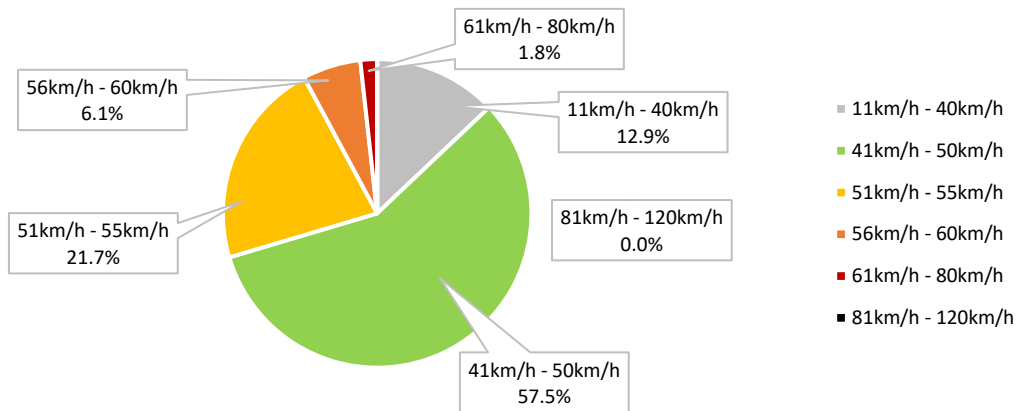


Figure 2 Speed by Average Volume Southbound

Figure 2 above shows that 70.4% of vehicles were travelling below the posted speed limit, 27.8% of vehicles were travelling between 51-60 km/h, and 1.8% of vehicles were travelling above 60km/h. Considering the accepted speed limit is 10km/h over the posted speed limit, a total of 98.2% of vehicles were travelling within the accepted speed limit in the northbound direction.

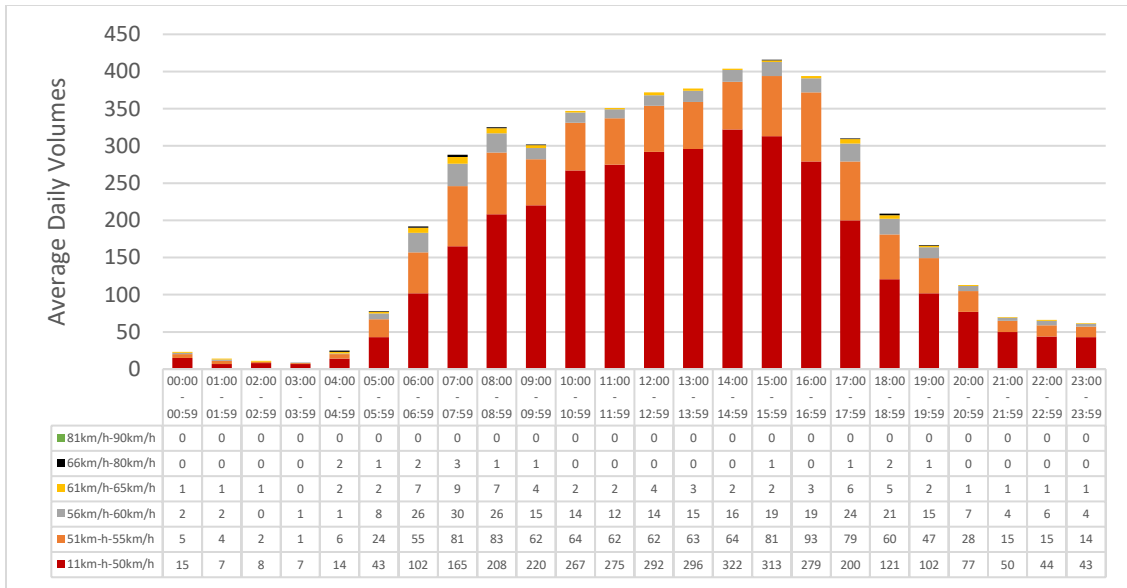


Figure 3 Speed by Hour Analysis for Southbound

Figure 3 above is the speed by hour graph used to determine the time where most speeding occurs. The data shows that speeding was consistent throughout the day and into the afternoon, being between 7:00am to 5:00pm. The data shows that most of the speeding occurs in the morning from 6:00am to 8:59am and in the afternoon from 5:00pm until 6:59pm.

2.2 Northbound Speed Analysis

Figure 4 and 5 are the speed summary for the northbound traffic.

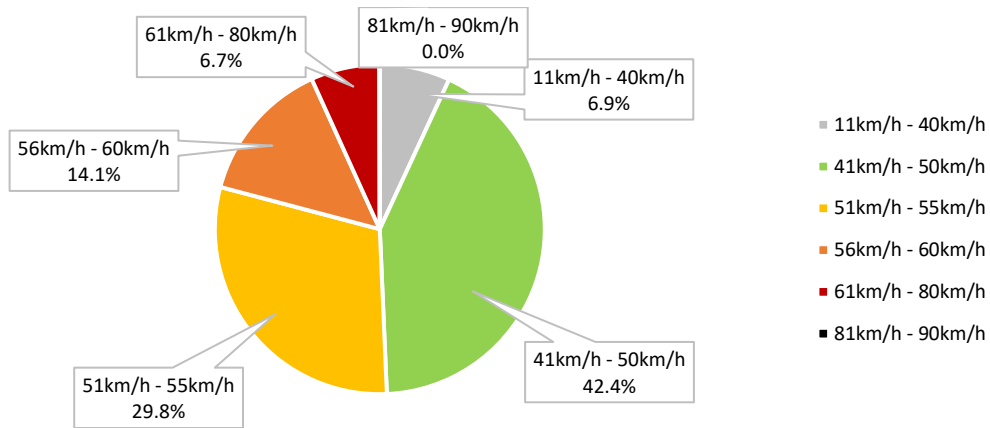


Figure 4 Speed by Average Volume Northbound

From this summary we can see that 49.3% of the vehicles were travelling below the posted speed limit, 43.9% of vehicles were travelling between 51-60 km/h, and 6.7% 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 93.2% of vehicles were driving within the accepted speed limit.

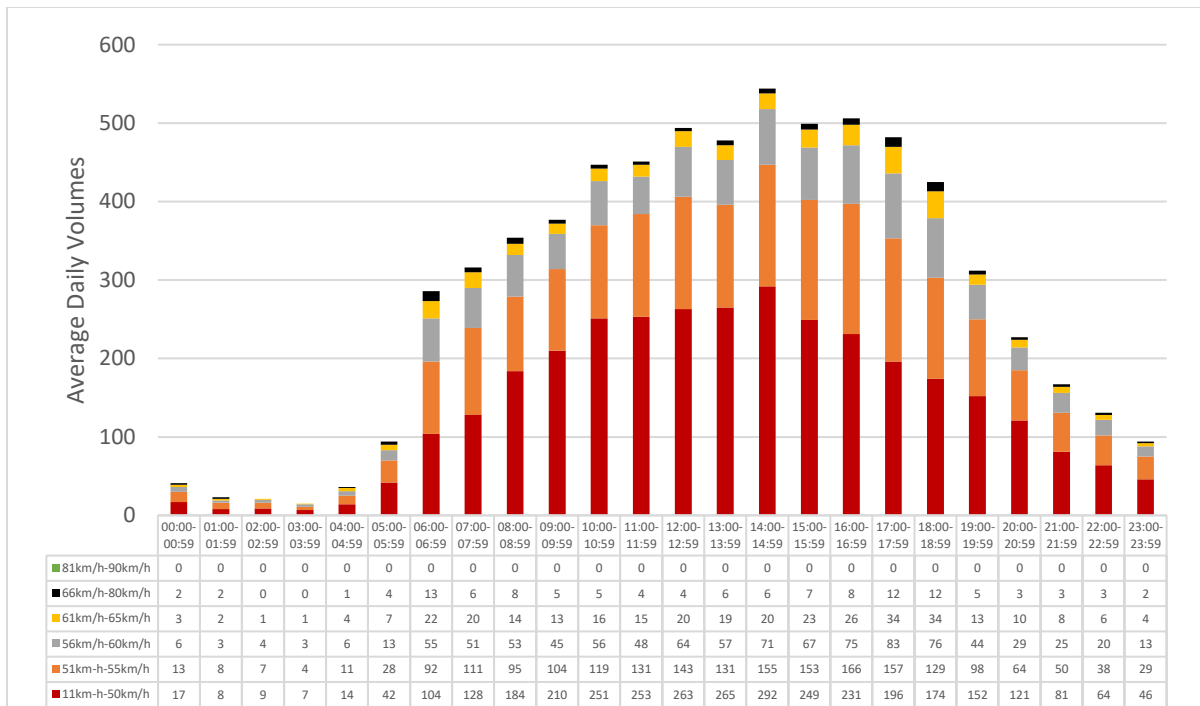


Figure 5 Speed by Hour Analysis for Northbound

Figure 5 above is the speed by hour graph used to determine the time where most speeding occurs. The data shows that speeding followed a curve throughout the day and into the afternoon, being between 6:00am to 10:00pm. The data shows that most of the speeding occurs in the morning from 6:00am until 8:59 am and in the afternoon from 4:00pm until 6:59pm.

Furthermore, the traffic trailer detected that 61.5% of vehicles slowed down in southbound direction and 62% slowed down in northbound direction when approaching the trailer. These percentages could include the vehicles slowed down to make a turn; however, it also shows that the trailer is influencing traffic calming.

3.0 Traffic Volume

Table 3 Volume Summary

Direction	Period	Average Daily Traffic Volume
Southbound	April 14 th - April 21 st , 2021	4,393
Northbound	April 7 th -14 th , 2021	6,164.9

Figure 6 and 7 show the average daily volumes on Fourth St for northbound and southbound directions. These summaries show that the most volume is during the week, Friday being the busiest and goes down on the weekend. It also shows that more traffic is travelling northbound.

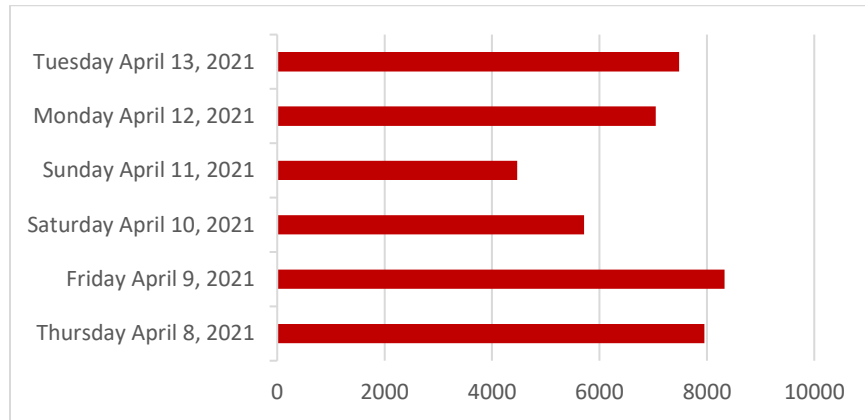


Figure 6 Total Volume per day (Northbound)

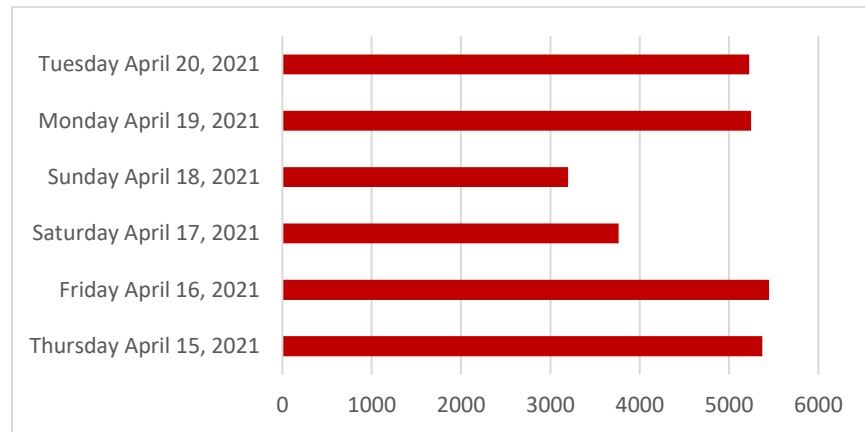


Figure 7 Total Volume per day (Southbound)

3.1 Southbound Volume by Hour

The data collected for six full days (April 15th to April 20th) is used to analyze the average traffic volume at different times of the day (Figure 8). From the graph, Fourth St has peak traffic during the typical rush hour.

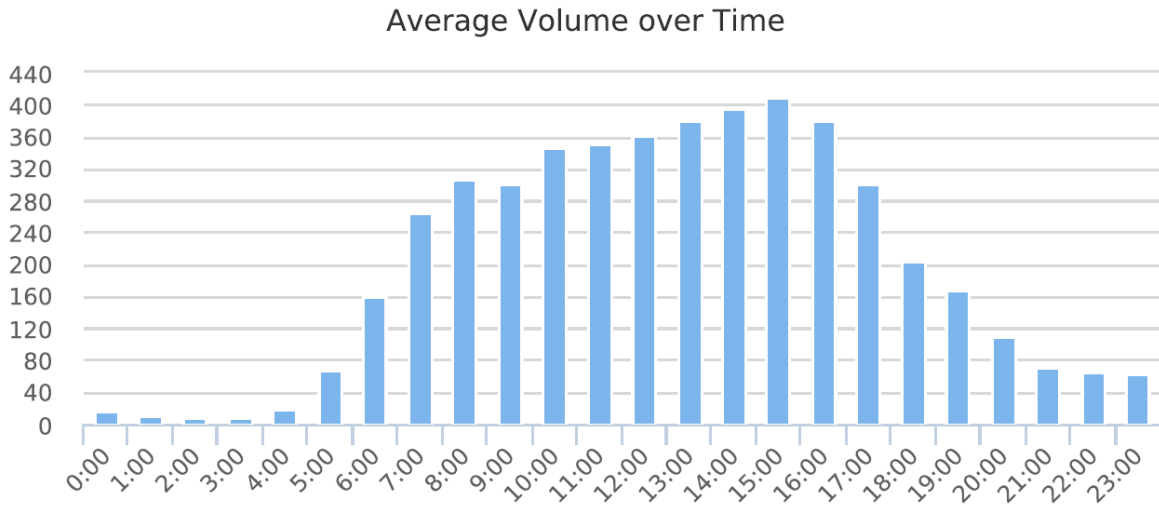


Figure 8 Total Volume by Hour (Southbound)

3.2 Northbound Volume by Hour

The data collected for six full days (April 8th to April 13th) is used to analyze the average traffic volume at different times of the day (Figure 9). From the graph, Fourth St has peak traffic from 6:00am until 8:59am and from 4:00pm until 6:59pm as well as at 2:00pm.

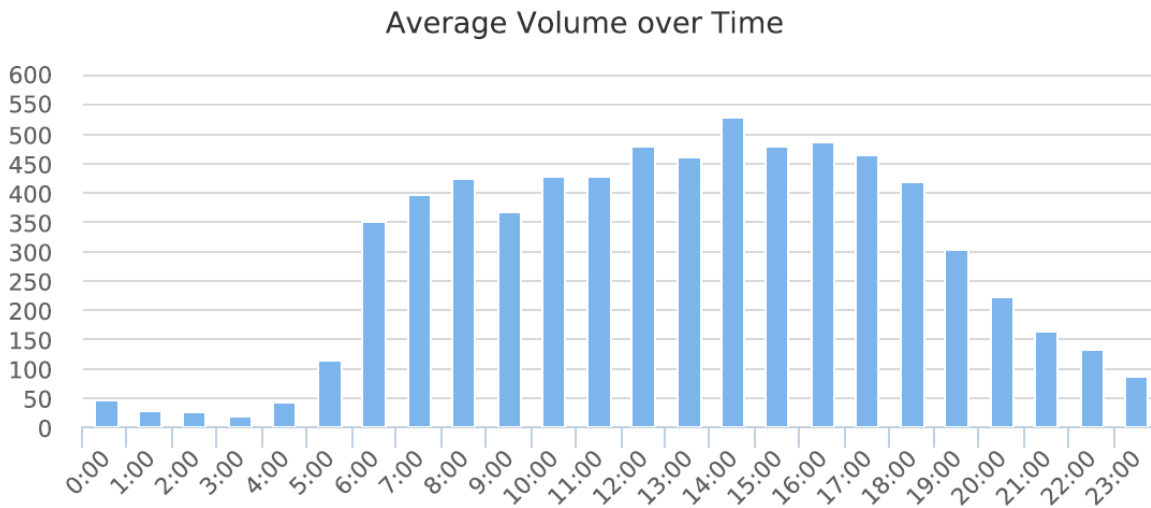


Figure 9 Total Volume by Hour (Northbound)

4.0 Conclusion

The traffic study conducted on Fourth St for both southbound and northbound directions was successfully carried out from April 8th to April 20th, 2021. From the speed analysis, it was determined that 98.2% of vehicles travelling in the southbound direction were travelling within the accepted speed limit. It was also determined that 93.2% of vehicles travelling in the northbound direction were travelling within the accepted speed limit. In addition, from the volume analysis, it was determined that the peak traffic hours were at the typical rush hours for southbound direction. It was also determined that the peak traffic hours were around the typical morning and evening rush hours in the northbound direction. In conclusion the speed trailer was promoting traffic calming on Fourth Street by reducing speeds by an average of 61.75%.