

# Traffic Data Analysis

Aberdeen Boulevard

Northbound and Southbound



1.0	Introduction .....	3
1.1	Location.....	3
1.2	Traffic Trailer .....	3
2.0	Speed Summary .....	4
2.1	Northbound Speed Analysis.....	4
2.2	Southbound Speed Analysis.....	7
3.0	Traffic Volume.....	10
3.1	Northbound Volume by Hour .....	11
3.2	Southbound Volume by Hour .....	12
4.0	Conclusion.....	13
	Figure 1- Traffic Trailer.....	3
	Figure 2- Aberdeen Boulevard Northbound .....	4
	Figure 3- Speed by Hour Analysis for Northbound Weekdays.....	5
	Figure 4 Speed by Hour Analysis for Northbound Weekends .....	6
	Figure 5- Aberdeen Boulevard Southbound .....	7
	Figure 6- Speed by Hour Analysis for Southbound (May 20th to May 21st and May 23rd to May 24th, 2021) .....	8
	Figure 7- Speed by Hour Analysis for Southbound (May 22nd to May 23rd, 2021).....	9
	Figure 8- Total Volume per Day (Northbound).....	10
	Figure 9- Total Volume per Day (Southbound).....	11
	Figure 10 Average Volume per Hour from May 27 <sup>th</sup> to May 28 <sup>th</sup> and From May 31 <sup>st</sup> to June 1 <sup>st</sup> (Northbound) .....	11
	Figure 11- Average Volume by Hour from May 29 <sup>th</sup> to May 30 <sup>th</sup> (Northbound) .....	12
	Figure 12- Average Volume by Hour from May 20th to May 21st and May 24th to May 25th (Southbound) .....	12
	Figure 13- Average Volume by Hour from May 22nd to May 23rd (Southbound).....	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 May 19<sup>th</sup>, 2021, to June 2<sup>nd</sup>, 2021, on Aberdeen Boulevard for both northbound and southbound 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 Aberdeen Boulevard for both northbound and southbound directions. Table 1 below shows the location of the traffic trailer and data collection period.

**Table 1- Locations of Traffic Trailer**

Direction	Location	Period
Northbound	601 Aberdeen Blvd, Midland, ON	10:00am on May 26 <sup>th</sup> – 10:00am on June 2 <sup>nd</sup> , 2021
Southbound	577 Aberdeen Blvd, Midland, ON	3:00pm May 19 <sup>th</sup> , 2021-10:00am on May 26 <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

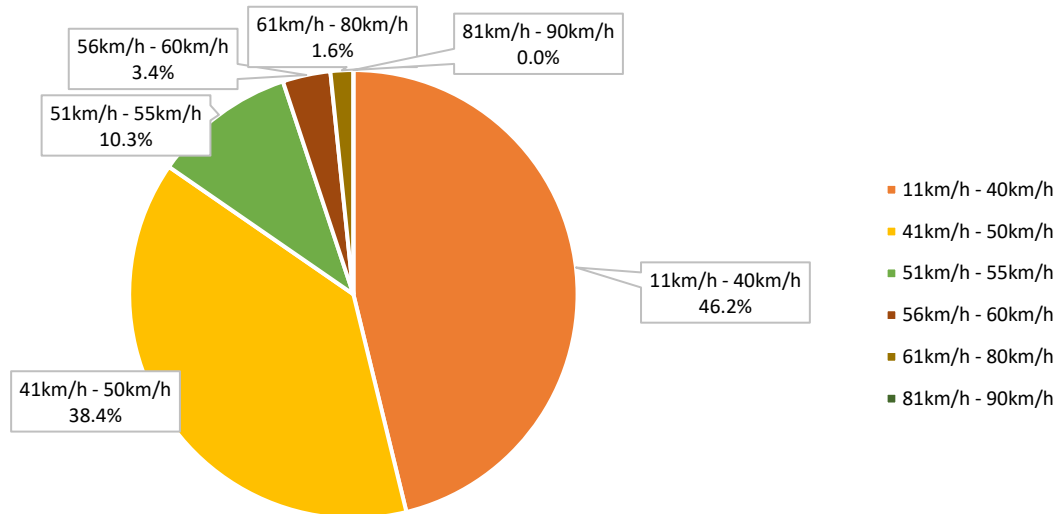
The posted speed limit on Aberdeen Boulevard is 50km/h; however, generally it is accepted that vehicles that are travelling up to 10km/h above the posted speed limit are not considered to be speeding. Table 2 shows an overall speed summary of the data collected for northbound and southbound directions.

**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)
Northbound	40.8	47.9	10	75.0
Southbound	38.6	45.13	10	79.0

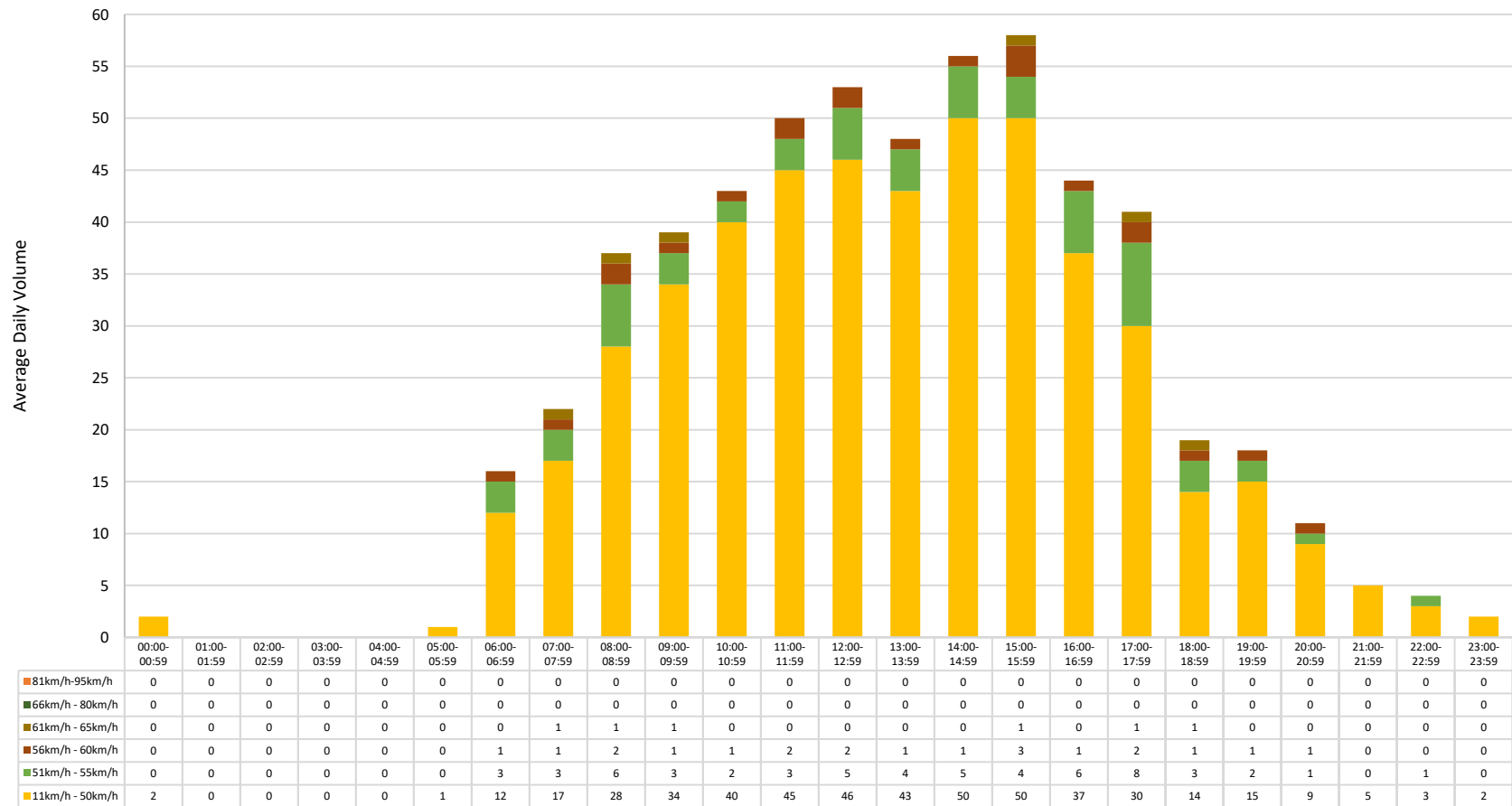
## 2.1 Northbound Speed Analysis

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



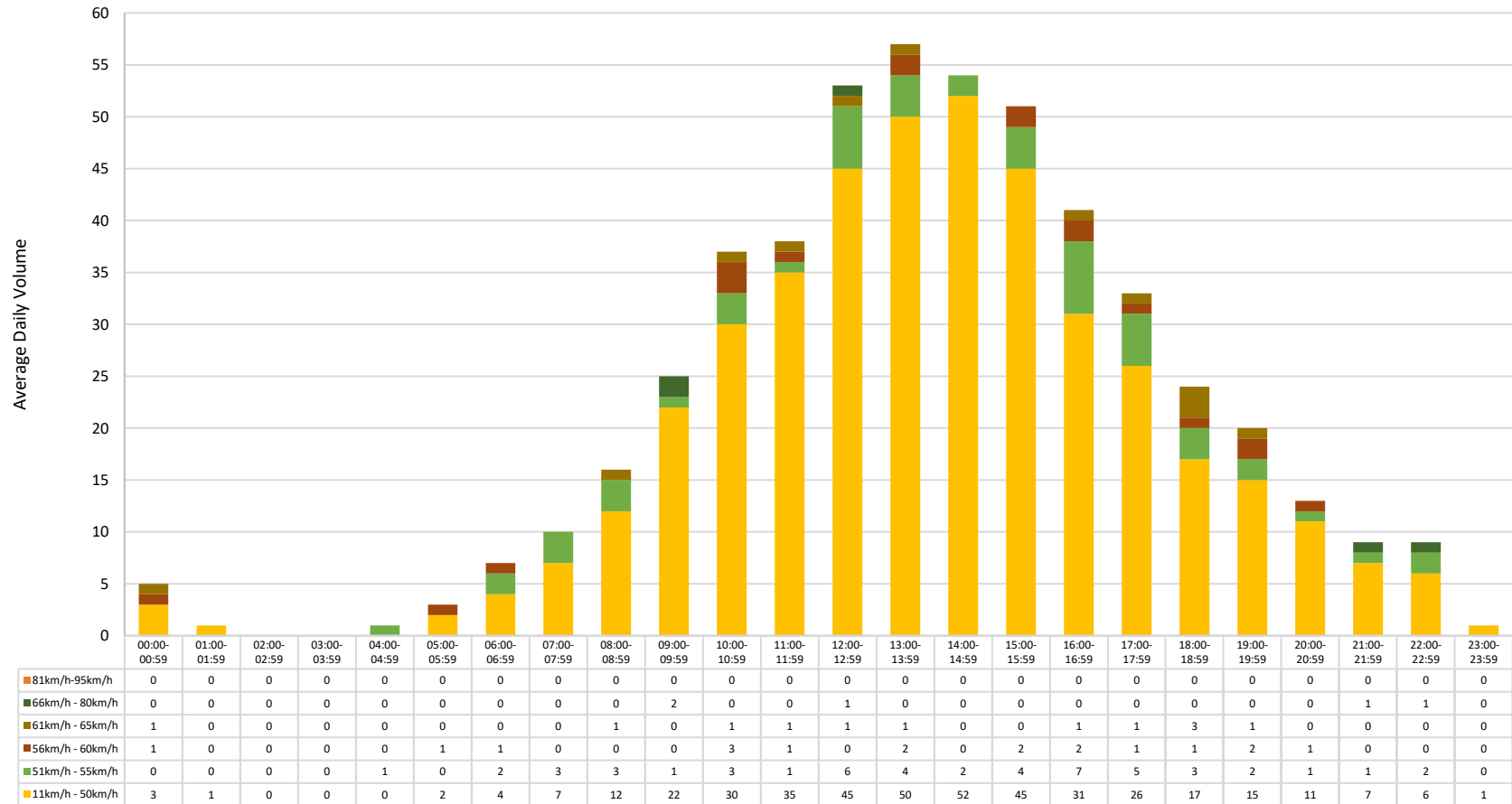
**Figure 2- Aberdeen Boulevard Northbound**

Figure 2 above shows that 84.6% of vehicles were travelling below the posted speed limit, 13.7% of vehicles were travelling between 51-60 km/h, and 1.6% of vehicles were travelling above 60km/h. Considering the accepted speed limit is 10km/h over the posted speed limit, a total of 98.3% of vehicles were travelling within the accepted speed limit in the northbound direction.



**Figure 3- Speed by Hour Analysis for Northbound Weekdays**

Figure 3 above is the speed by hour graph used to determine the time where most speeding occurs on weekdays (May 27<sup>th</sup> to May 28<sup>th</sup> and May 31<sup>st</sup> to June 1<sup>st</sup>). The data shows that speeding was consistent throughout the day and into the evening, being between 6:00am to 9:59pm. The data shows that most of the speeding occurs during typical morning and evening commute time, which are 8:00am to 8:59am and 5:00pm to 5:59pm.

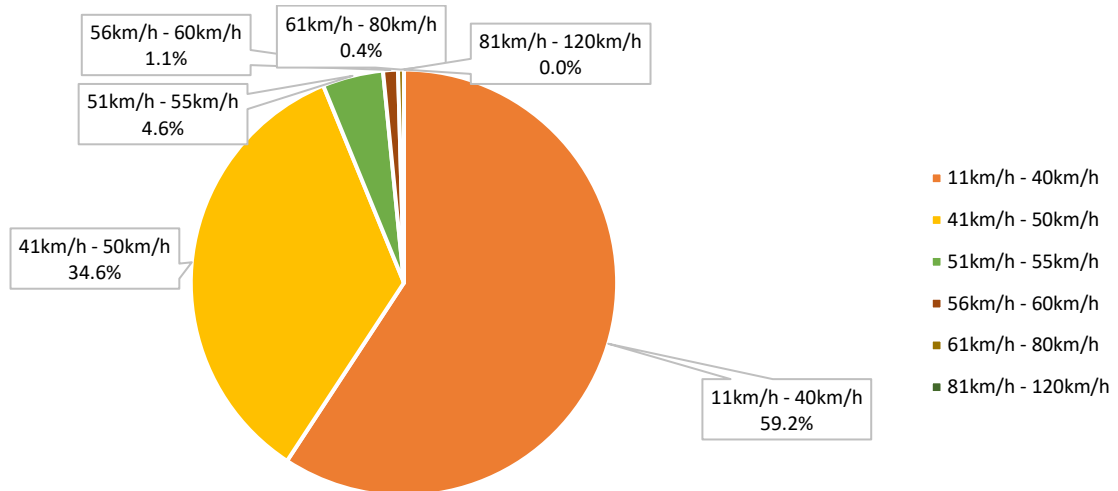


**Figure 4 Speed by Hour Analysis for Northbound Weekends**

Figure 4 above is the speed by hour graph used to determine the time where most speeding occurs on the weekend (May 29<sup>th</sup> to May 30<sup>th</sup>). The data shows that speeding was consistent throughout the day and into the evening, being between 6:00am to 9:59pm. The data shows that most of the speeding occurs from 10:00am to 10:59am as well as from 12:00pm until 1:59pm and from 3:00pm until 7:00pm.

## 2.2 Southbound Speed Analysis

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



**Figure 5- Aberdeen Boulevard Southbound**

Figure 5 shows that 93.8% of the vehicles were travelling below the posted speed limit, 5.7% of vehicles were travelling between 51-60 km/h, and 0.4% of vehicles were travelling above 60km/h. Considering the accepted speed limit is 10km/h over the posted speed limit, a total of 99.5% of vehicles were driving within the accepted speed limit.

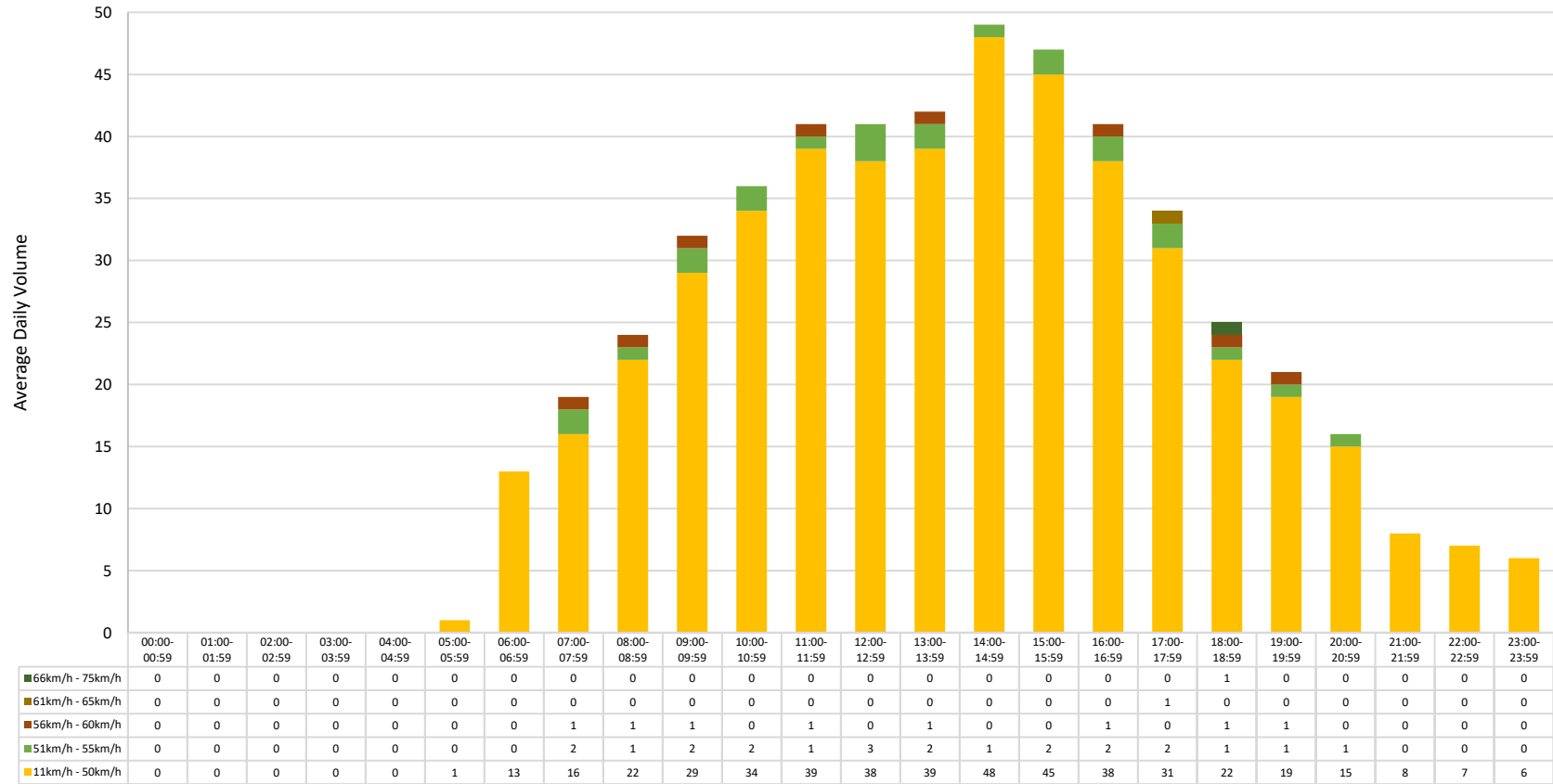


Figure 6- Speed by Hour Analysis for Southbound (May 20th to May 21st and May 23rd to May 24th, 2021)



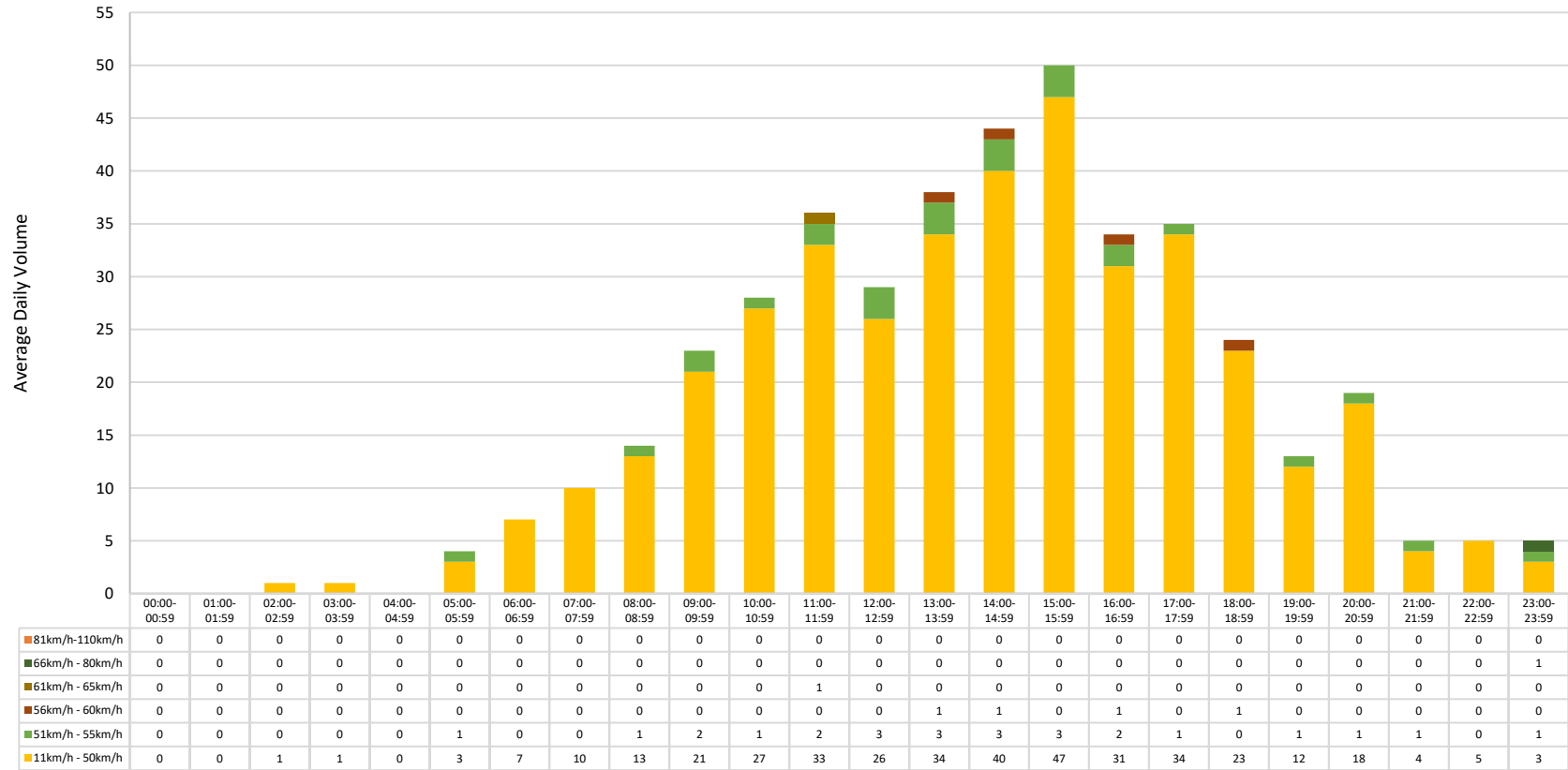


Figure 7- Speed by Hour Analysis for Southbound (May 22nd to May 23rd, 2021)

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 inconsistent as there was very little speeding overall and so many periods had no speeding at all. On the weekdays, the only period in with speeding occurred was between 5:00pm and 6:59pm. On the weekend, speeding occurred at 11:00am and 11:00pm.

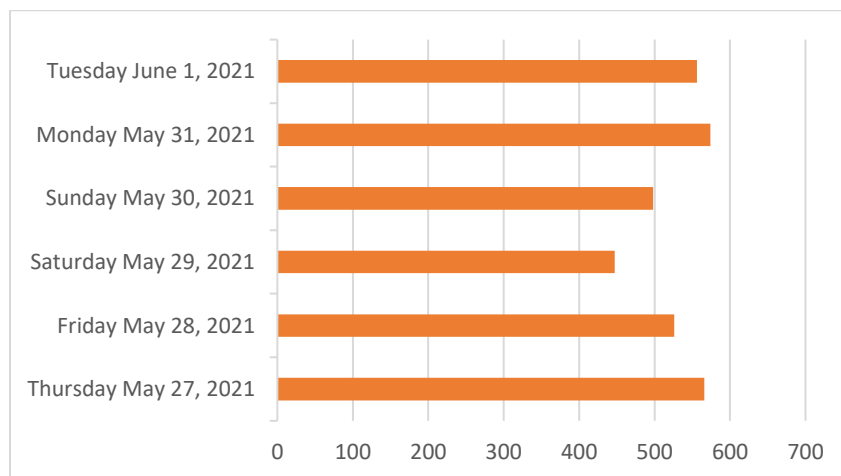
In addition, the traffic trailer detected that 35.4% of vehicles slowed down when approaching the trailer in the northbound direction and only 19.7% slowed down in southbound direction. These percentages show that the trailer is influencing traffic calming. However, the percentages of vehicles that slowed down are relatively low when compared to the results on other streets.

### 3.0 Traffic Volume

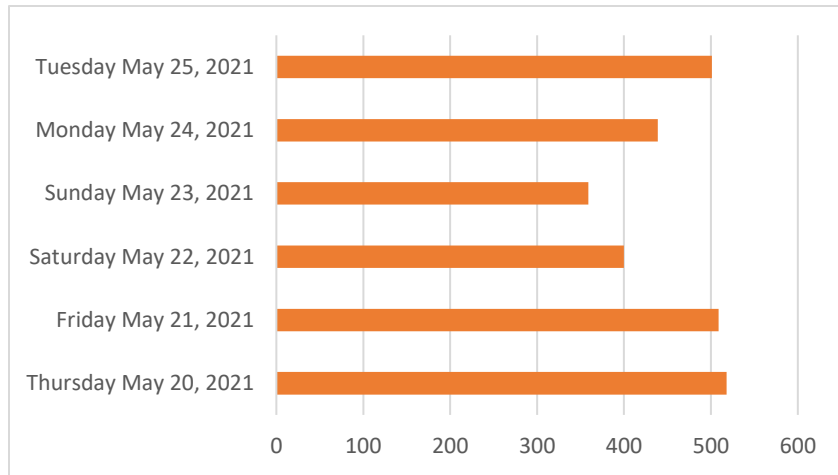
Table 3 shows the average daily volume on Aberdeen Boulevard for northbound and southbound directions.

**Table 3- Volume Summary**

Direction	Period	Average Daily Traffic Volume
Northbound	May 27 <sup>th</sup> to May 28 <sup>th</sup> and May 31 <sup>st</sup> to June 1 <sup>st</sup> (Monday, Tuesday, Thursday, Friday)	560.5
Northbound	May 29 <sup>th</sup> to May 30 <sup>th</sup> (Saturday, Sunday)	464.5
Southbound	May 20 <sup>th</sup> to May 21 <sup>st</sup> and May 23 <sup>rd</sup> to May 24 <sup>th</sup> (Monday, Tuesday, Thursday, Friday)	485.75
Southbound	May 22 <sup>nd</sup> to May 23 <sup>rd</sup> (Saturday, Sunday)	389



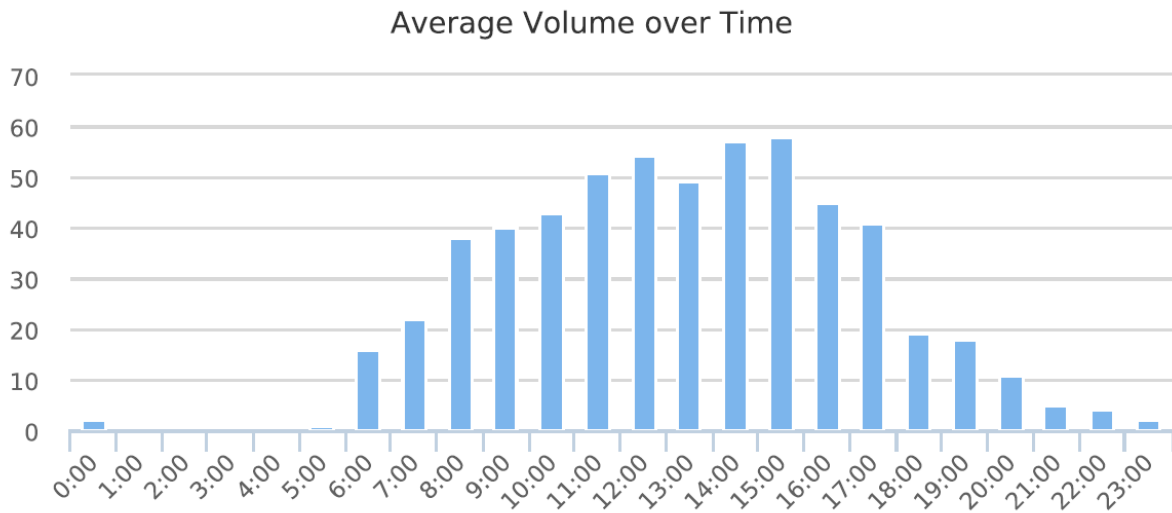
**Figure 8- Total Volume per Day (Northbound)**



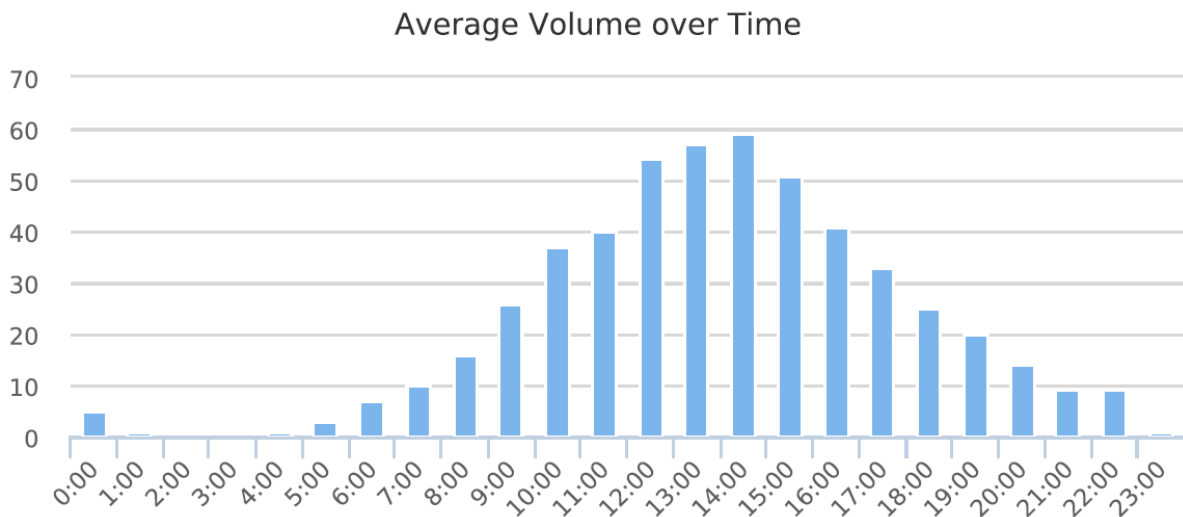
**Figure 9- Total Volume per Day (Southbound)**

### 3.1 Northbound Volume by Hour

The data collected from May 27<sup>th</sup> to May 28<sup>th</sup> and from May 31<sup>st</sup> to June 1<sup>st</sup> (weekdays) and May 29<sup>th</sup> to May 30<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 10 Average Volume per Hour from May 27<sup>th</sup> to May 28<sup>th</sup> and From May 31<sup>st</sup> to June 1<sup>st</sup> (Northbound)**

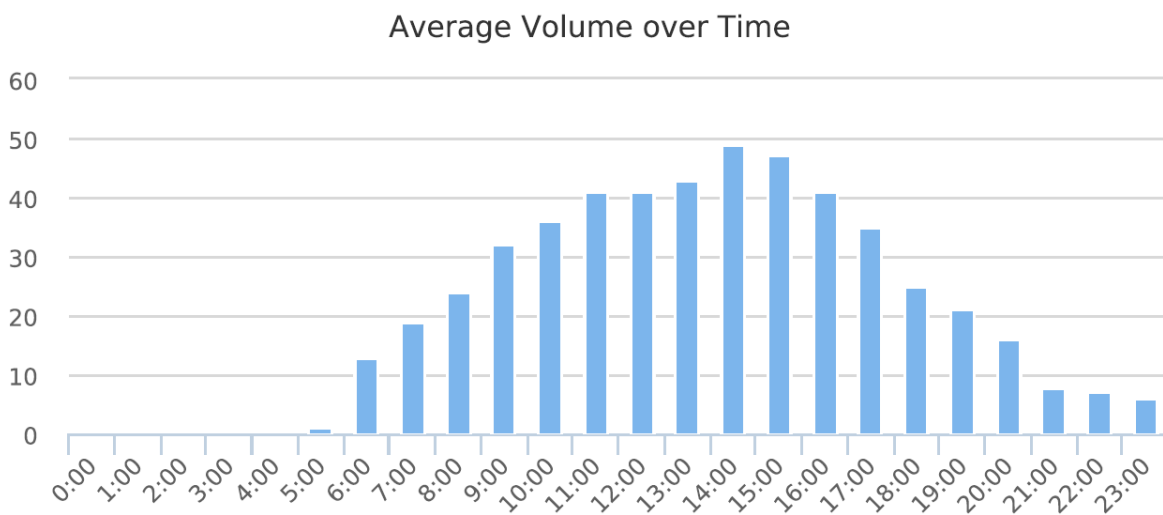


**Figure 11- Average Volume by Hour from May 29<sup>th</sup> to May 30<sup>th</sup> (Northbound)**

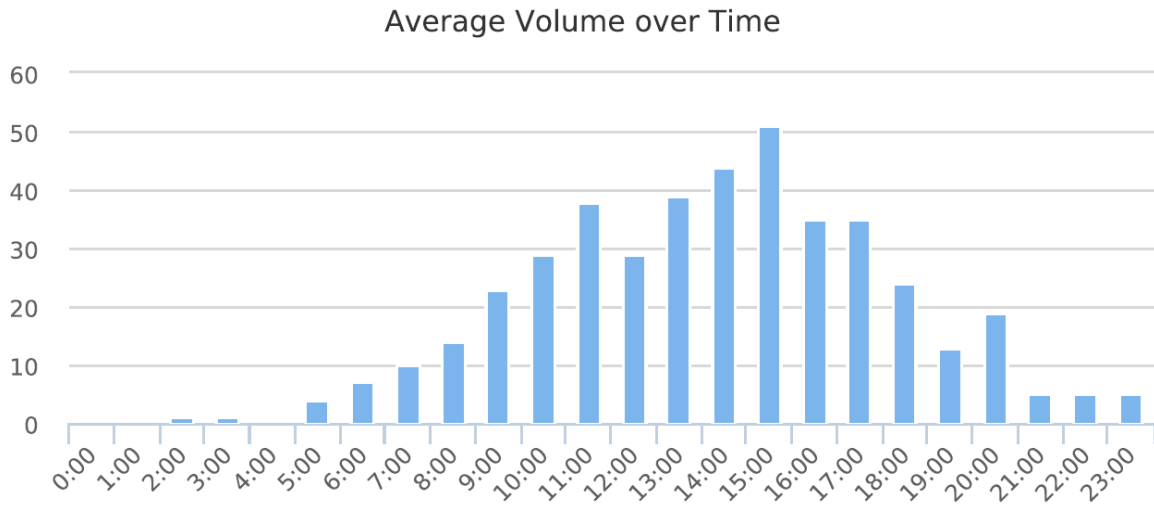
As shown in Figure 10, on weekdays, peak traffic occurs from 2:00pm to 3:59pm in the Northbound direction. Figure 11 shows that on weekends, the peak occurs between 12:00pm and 2:59pm in the Northbound direction.

### 3.2 Southbound Volume by Hour

The data collected from May 20<sup>th</sup> to May 21<sup>st</sup> and May 24<sup>th</sup> to May 25<sup>th</sup> (weekdays) and May 22<sup>nd</sup> to May 23<sup>rd</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 12- Average Volume by Hour from May 20<sup>th</sup> to May 21<sup>st</sup> and May 24<sup>th</sup> to May 25<sup>th</sup> (Southbound)**



**Figure 13- Average Volume by Hour from May 22nd to May 23rd (Southbound)**

As shown in Figure 12, peak traffic occurs in the middle of the afternoon from 2:00pm to 3:00pm on the weekday in the southbound direction. On the weekend shown in Figure 13, there was a spike from 11:00am to 12:00pm and the peak was reached from 3:00pm to 4:00pm.

#### 4.0 Conclusion

The traffic study conducted on Aberdeen Boulevard for both northbound and southbound directions was carried out from May 19<sup>th</sup> to June 2<sup>nd</sup>, 2021. From the speed analysis, it was determined that 98.3% and 99.5% of vehicles were travelling within the accepted speed limit for the Northbound and Southbound directions, respectively. In addition, from the volume analysis, it was determined that the peak traffic hours were at the midday and evening commute times in the northbound direction. It was also determined that the peak traffic occurred around the middle of the afternoon in the southbound direction on weekdays and weekends.