

# Traffic Data Analysis

Bayshore Drive  
Eastbound and Westbound



Town of Midland  
Engineering Department

June 30<sup>th</sup>, 2021

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## 1.0 Introduction

A traffic count was conducted from June 16<sup>th</sup>, 2021, to June 30<sup>th</sup>, 2021, on Bayshore Drive 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 Bayshore 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	287 Bayshore Drive, Midland, ON	11:00am on June 16 <sup>th</sup> – 11:00am on June 23 <sup>rd</sup> , 2021
Westbound	287 Bayshore Drive, Midland, ON	11:00am June 23 <sup>rd</sup> , 2021 – 10:00am on June 30 <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 Bayshore 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 <sup>th</sup> Percentile Speed (km/h)	Minimum Speed (km/h)	Maximum Speed(km/h)
Eastbound	56.47	64.38	10	105.0
Westbound	52.08	59.23	10	99.0

## 2.1 Eastbound Speed Analysis

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

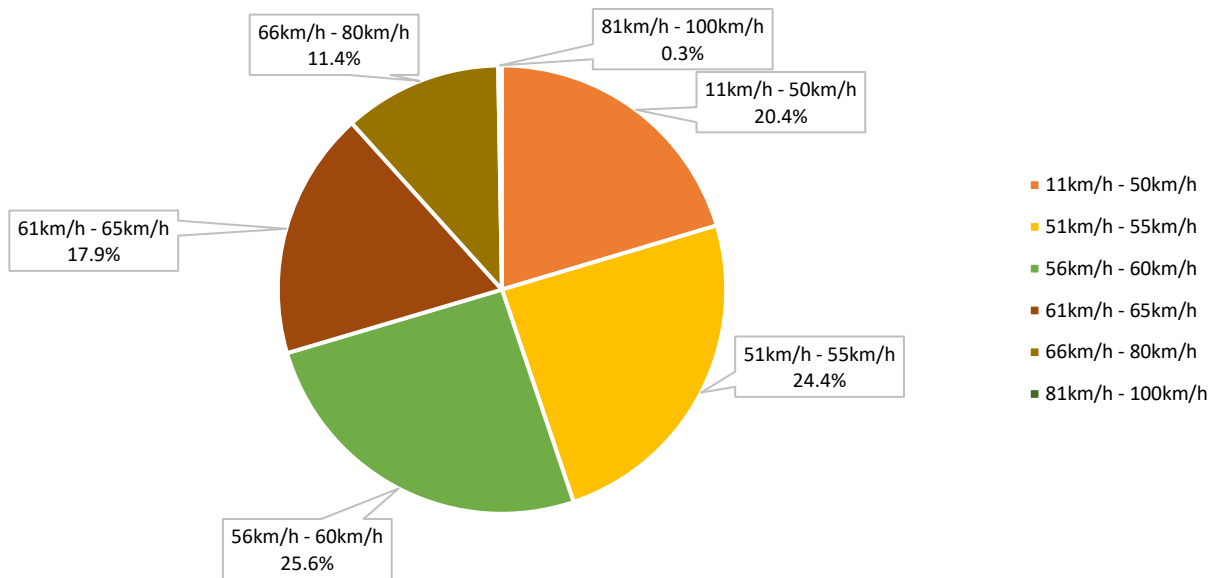


Figure 2- Bayshore Drive Eastbound

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.

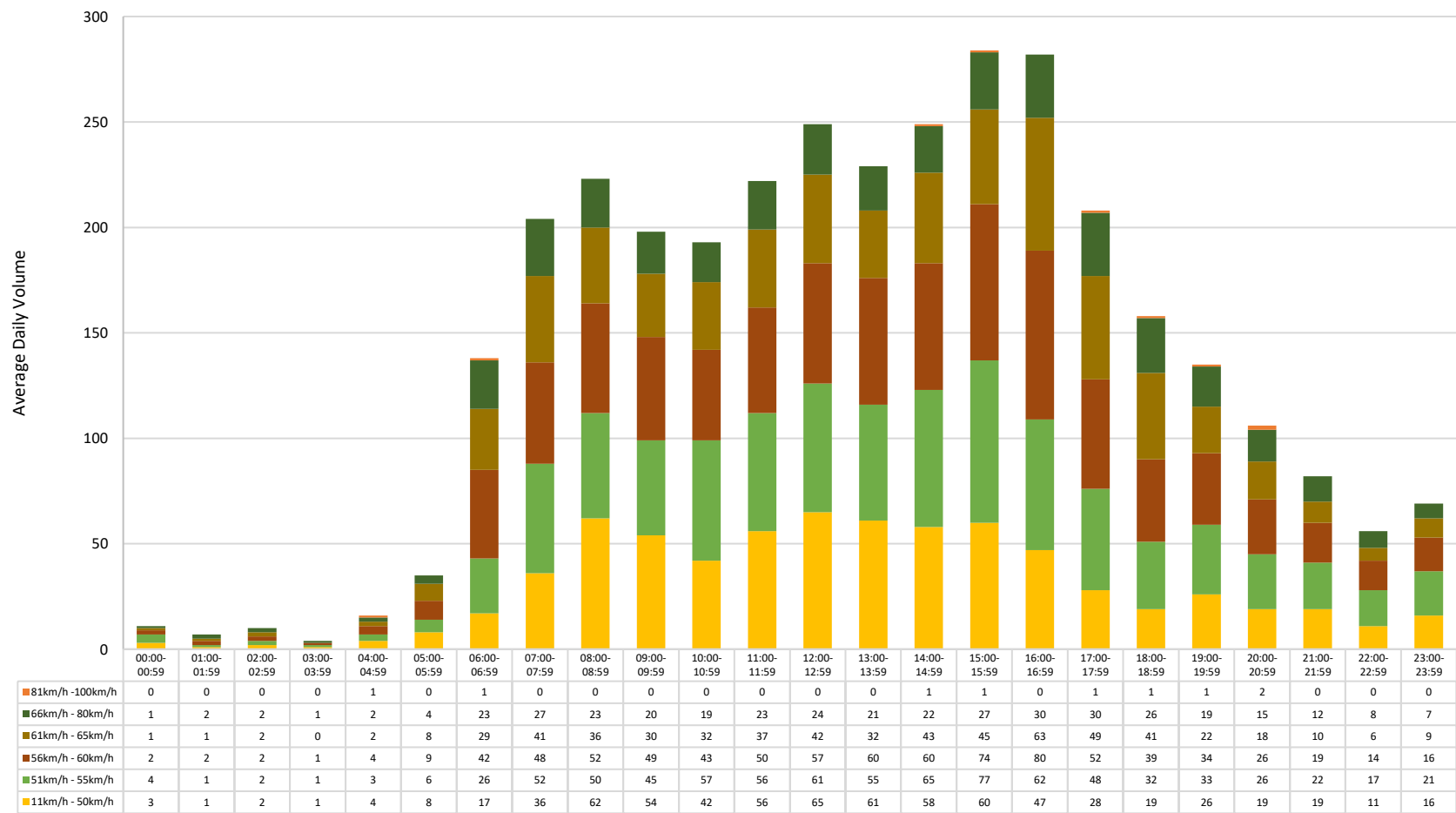
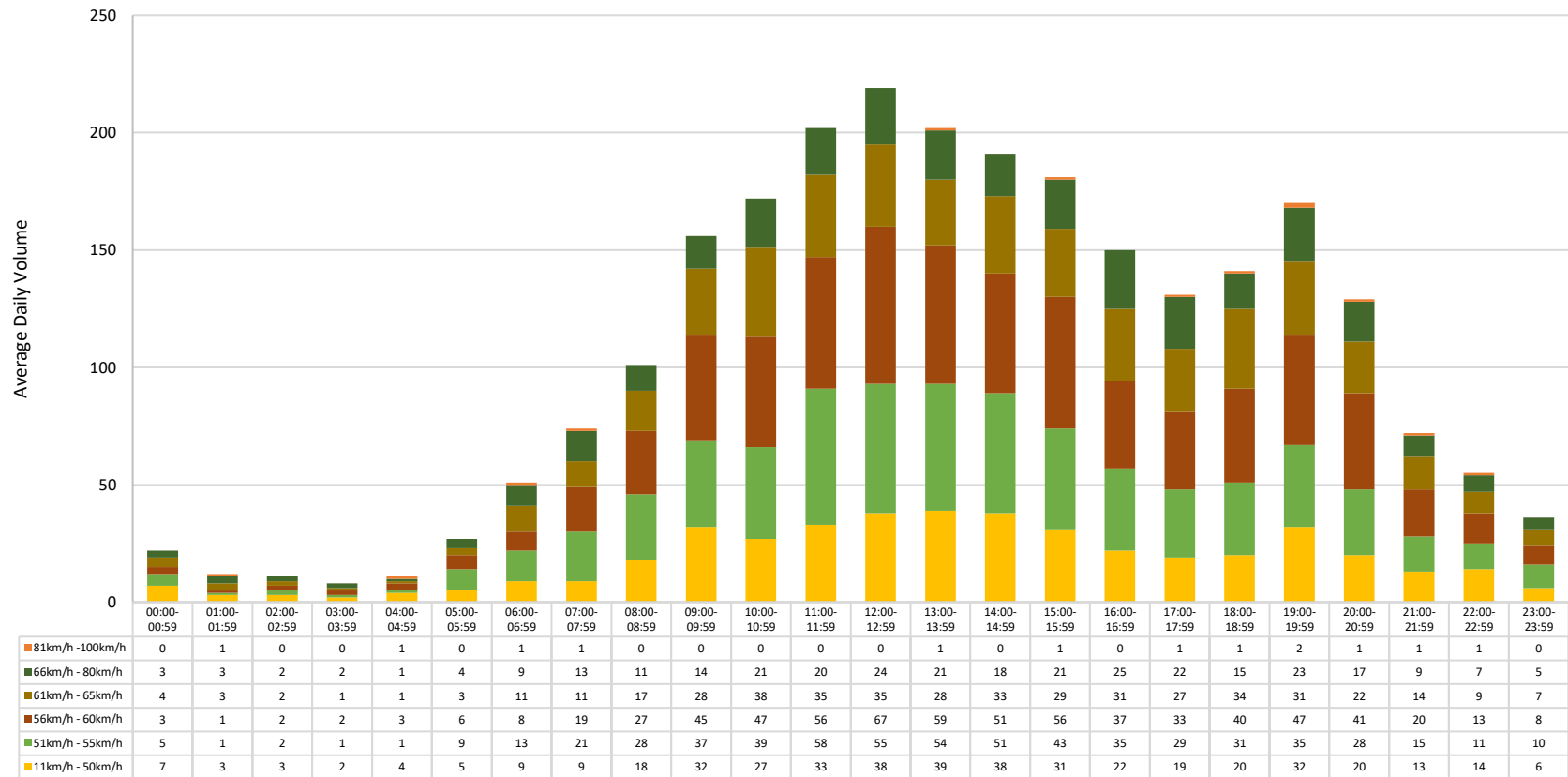


Figure 3- Speed by Hour Analysis for Eastbound Weekdays

Figure 3 above is the speed by hour graph used to determine the time where most speeding occurs on weekdays (June 17<sup>th</sup> to June 18<sup>th</sup> and June 21<sup>st</sup> to June 22<sup>nd</sup>). 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 19<sup>th</sup> to June 20<sup>th</sup>). 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.

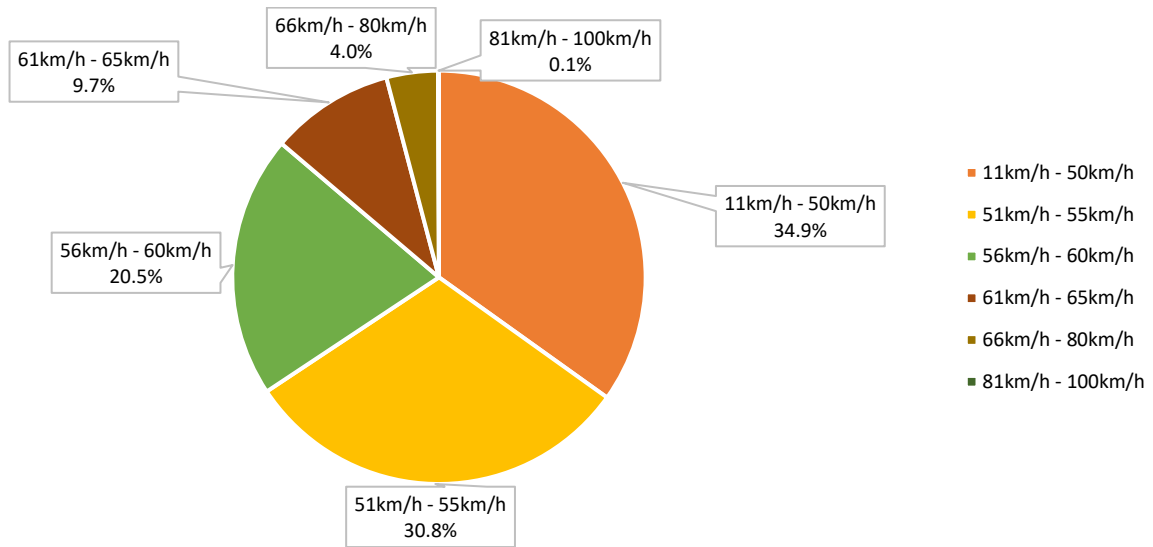


Figure 5- Bayshore Drive Westbound

Figure 5 shows that 34.9% of the vehicles were travelling below the posted speed limit, 51.3% of vehicles were travelling between 61-70 km/h, and 13.8% of vehicles were travelling above 70km/h. Considering the accepted speed limit is 10km/h over the posted speed limit, a total of 86.2% of vehicles were driving within the accepted speed limit.

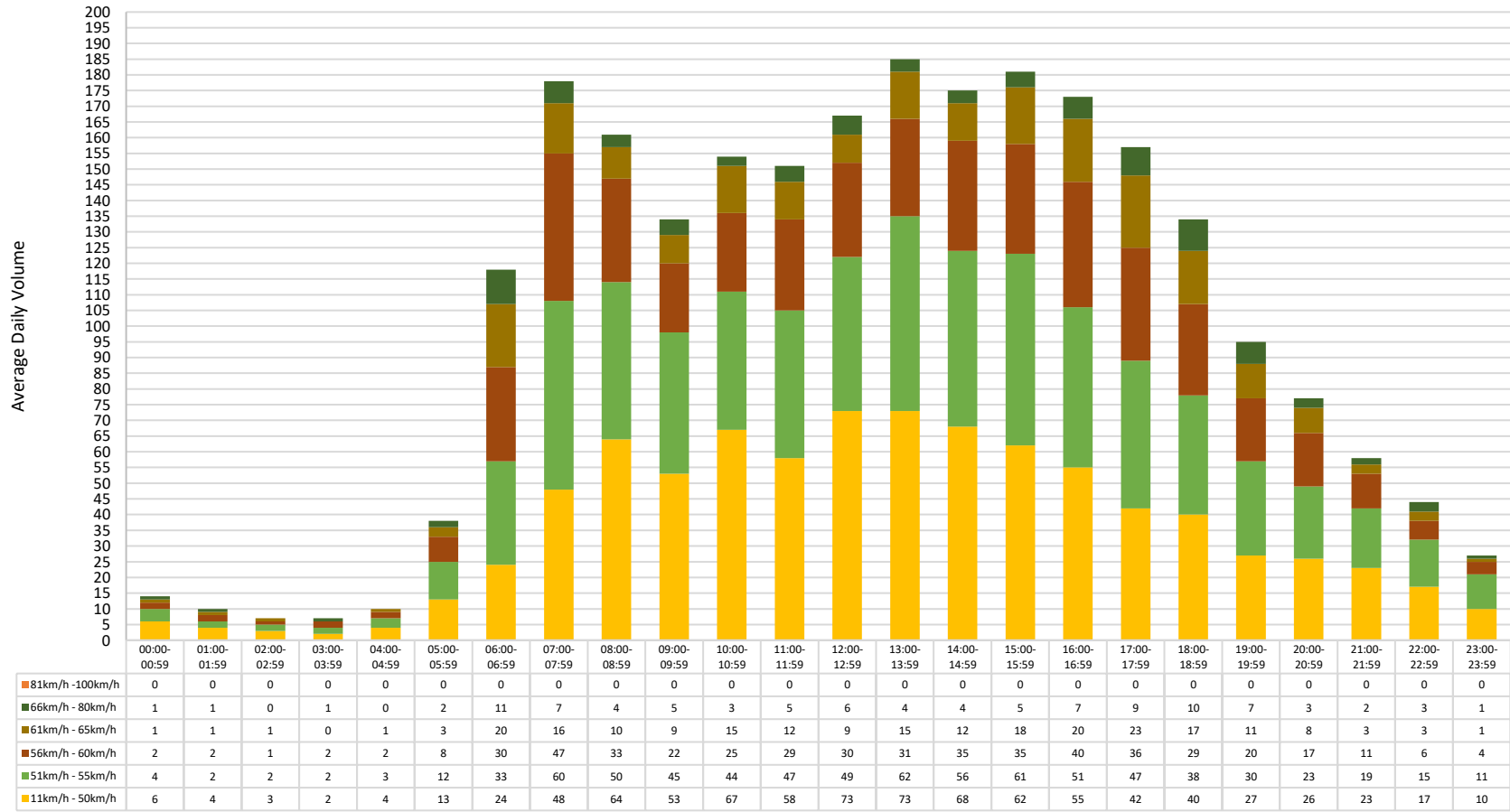


Figure 6- Speed by Hour Analysis for Westbound (June 24<sup>th</sup> to June 25<sup>th</sup> and June 28<sup>th</sup> to June 29<sup>th</sup>, 2021)



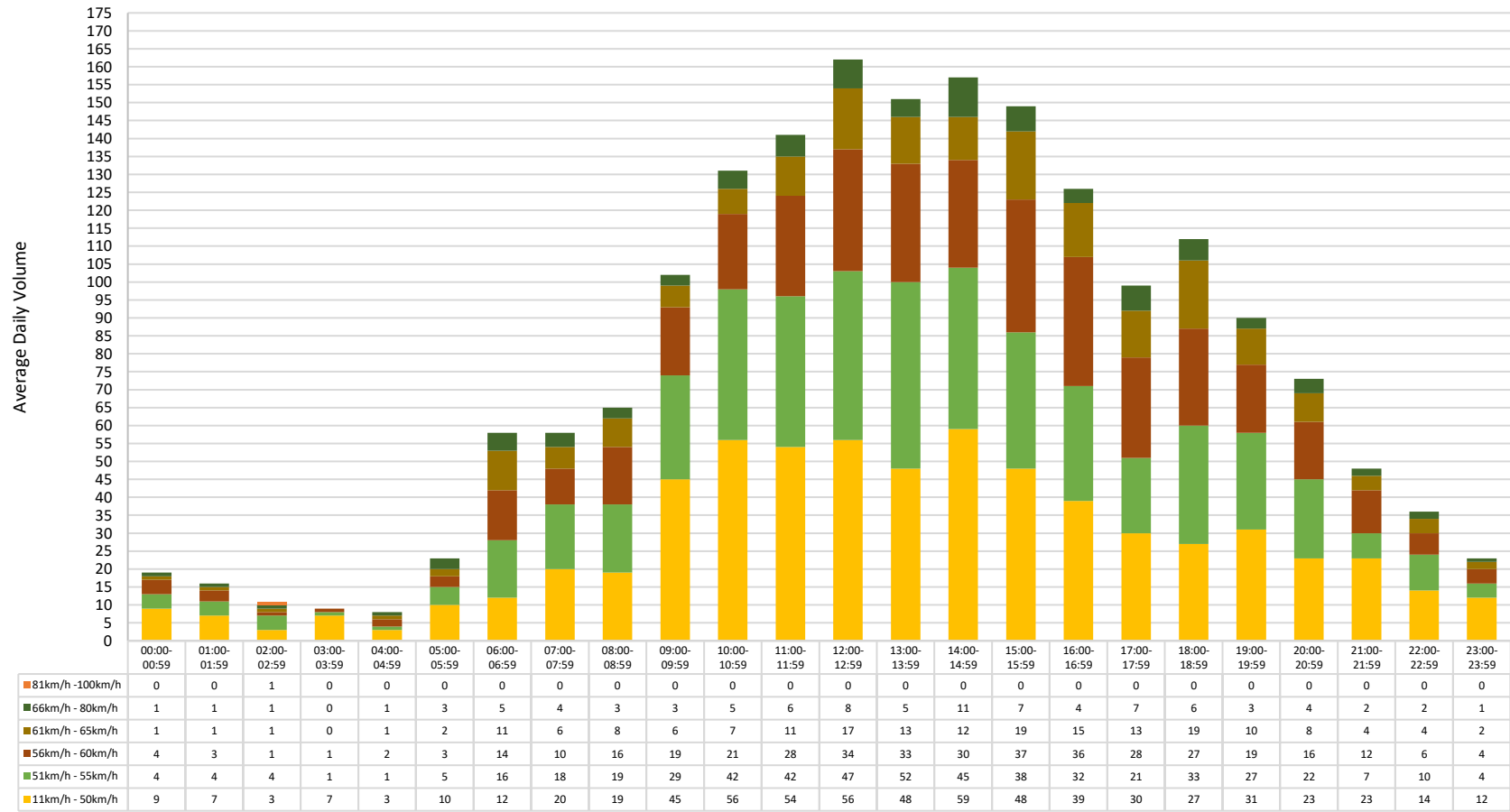


Figure 7- Speed by Hour Analysis for Westbound (June 26<sup>th</sup> to June 27<sup>th</sup>, 2021)

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, there were spikes in speeding from 6:00-6:59am and 5:00-6:59pm. On the weekend, there were peaks in speeding from 2:00-3:59pm.

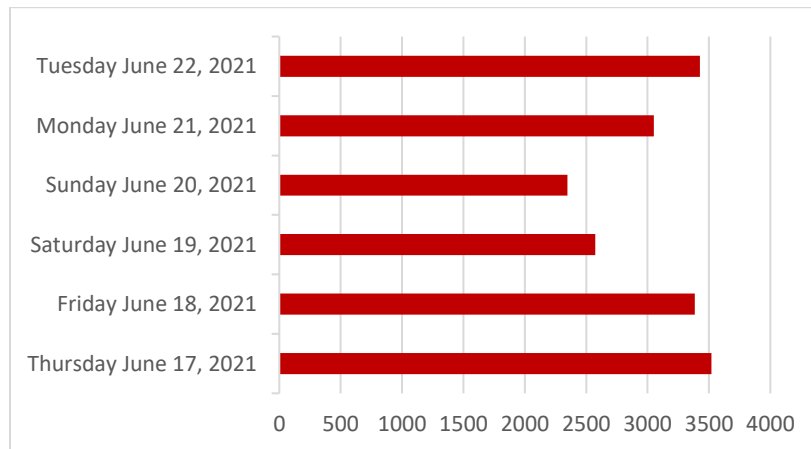
In addition, the traffic trailer detected that 69.74% of vehicles slowed down when approaching the trailer in the eastbound direction and 74.34% slowed down in westbound direction. These percentages show that the trailer is influencing traffic calming.

### 3.0 Traffic Volume

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

**Table 3- Volume Summary**

Direction	Period	Average Daily Traffic Volume
Eastbound	June 17 <sup>th</sup> to June 18 <sup>th</sup> and June 21 <sup>st</sup> to June 22 <sup>nd</sup> (Monday, Tuesday, Thursday, Friday)	3259.5
Eastbound	June 19 <sup>th</sup> to June 20 <sup>th</sup> (Saturday, Sunday)	2457.5
Westbound	June 24 <sup>th</sup> -25 <sup>th</sup> and June 28 <sup>th</sup> -29 <sup>th</sup> (Monday, Tuesday, Thursday, Friday)	2438.8
Westbound	June 26 <sup>th</sup> - 27 <sup>th</sup> (Saturday, Sunday)	1814.0



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

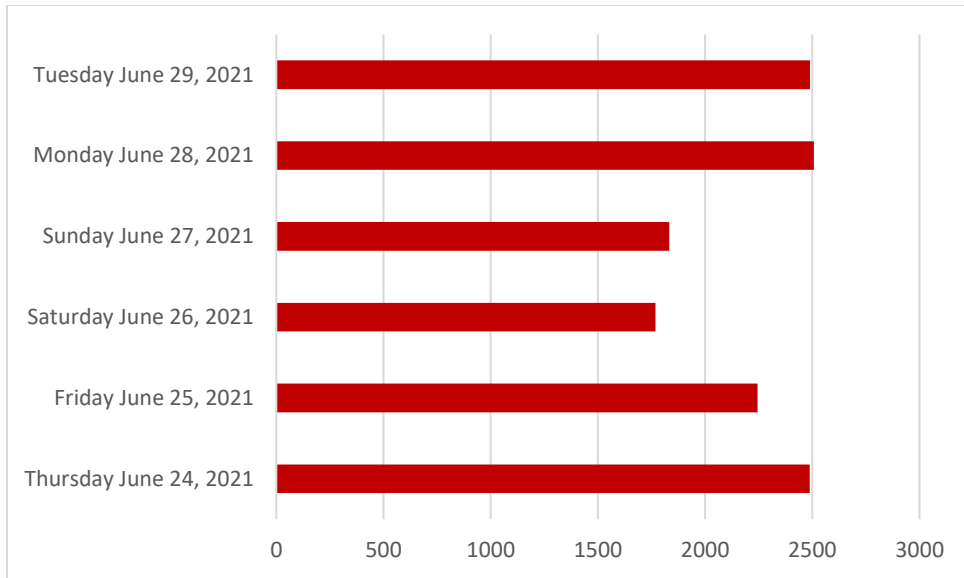


Figure 9- Total Volume per Day (Westbound)

### 3.1 Eastbound Volume by Hour

The data collected from June 17<sup>th</sup> to June 18<sup>th</sup> and June 21<sup>st</sup> to June 22<sup>nd</sup> (weekdays) and June 19<sup>th</sup> to June 20<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.

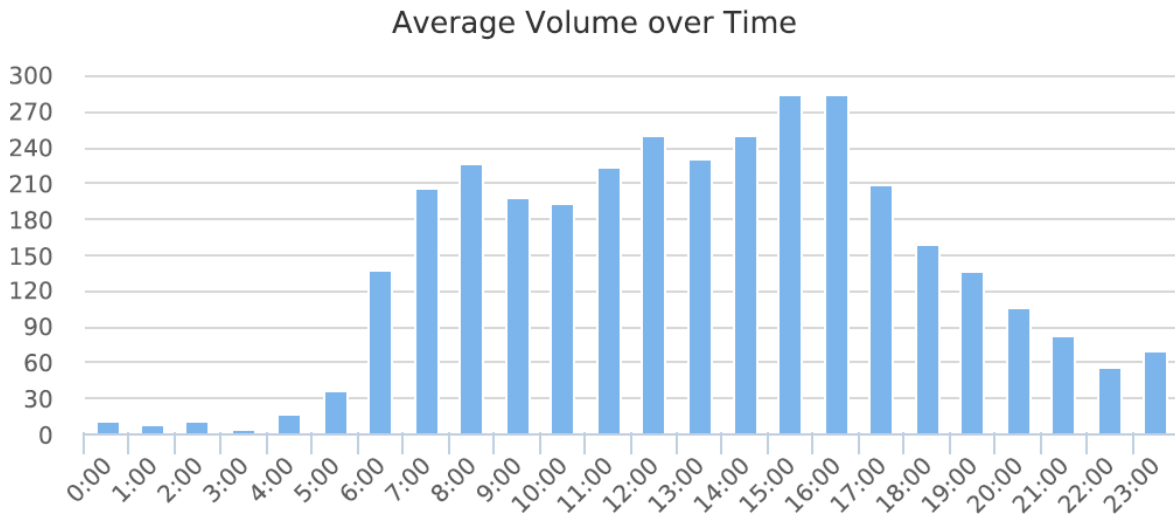
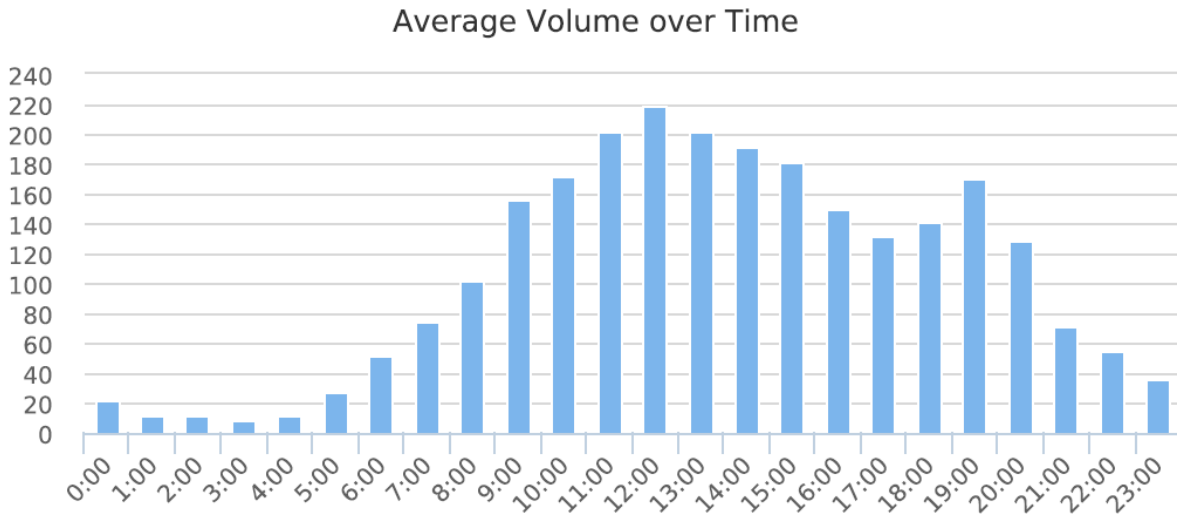


Figure 10 Average Volume per Hour from June 17<sup>th</sup> to June 18<sup>th</sup> and June 21<sup>st</sup> to June 22<sup>nd</sup> (Eastbound)

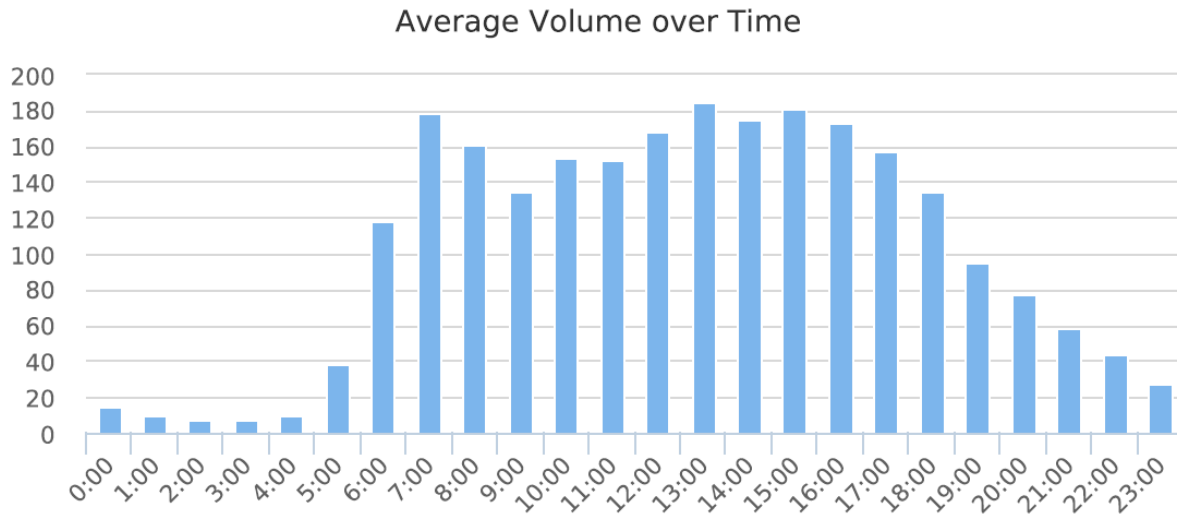


**Figure 11- Average Volume by Hour from June 19<sup>th</sup> to June 20<sup>th</sup> (Eastbound)**

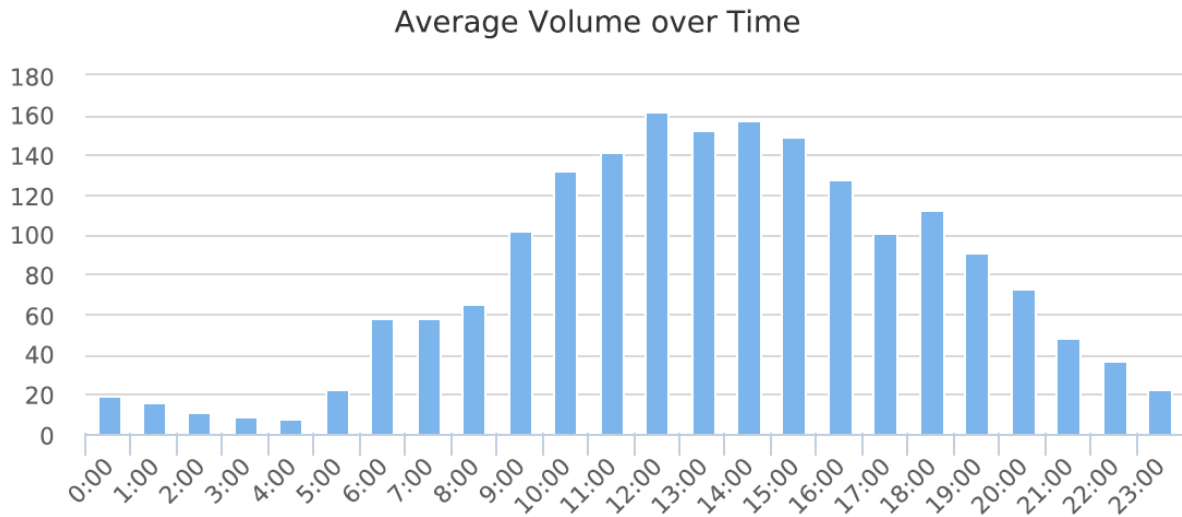
As shown in Figure 10, on weekdays, peak traffic occurs from 3:00pm to 4:59pm in the eastbound direction. Figure 11 shows that on weekends, the peak occurs between 12:00pm and 12:59pm in the eastbound direction.

### 3.2 Westbound Volume by Hour

The data collected from June 24<sup>th</sup>-25<sup>th</sup> and June 28<sup>th</sup>-29<sup>th</sup> (weekdays) and June 26<sup>th</sup>-June 27<sup>th</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 June 24<sup>th</sup> to June 25<sup>th</sup> and June 28<sup>th</sup> to June 29<sup>th</sup>, 2021 (Westbound)**



**Figure 13- Average Volume by Hour from June 26<sup>th</sup> to June 27<sup>th</sup> (Westbound)**

As shown in Figure 12, peak traffic occurs in the middle of the afternoon from 1:00pm to 3:59pm on the weekday in the westbound direction. On the weekend shown in Figure 13, there was a spike from 12:00pm to 2:59pm.

#### **4.0 Conclusion**

The traffic study conducted on Bayshore Drive for both eastbound and westbound directions was carried out from June 17<sup>th</sup> to June 29<sup>th</sup>, 2021. From the speed analysis, it was determined that 70.4% and 85.2% 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.