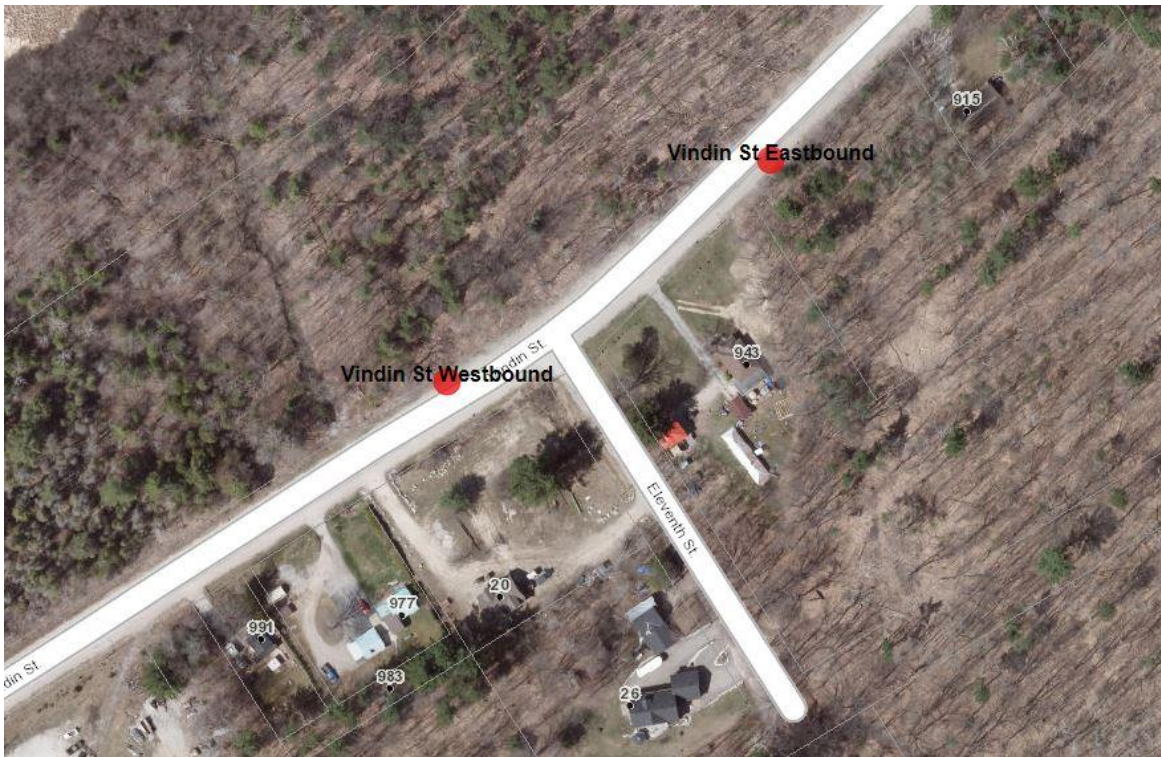


# Traffic Data Analysis

Vindin St.

Eastbound and Westbound



Town of Midland

Engineering Department

July 11<sup>th</sup>, 2019

## 1.0 Introduction

A traffic count was conducted from July 2<sup>nd</sup>, 2019 to July 8<sup>th</sup>, 2019 on Vindin St 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 is any speeding issue and raise safety awareness and help calm traffic by displaying speeds of vehicles approaching.

## 1.1 Location

The traffic trailer was placed on Vindin St for both eastbound and westbound directions. The trailer was placed at side of road 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
Eastbound	943 Vindin St, Midland, ON	8:00am on July 2 <sup>nd</sup> , 2019 – 8:00am on July 5 <sup>th</sup> , 2019
Westbound	977 Vindin St, Midland, ON	8:00am on July 5 <sup>th</sup> , 2019 – 8:00am on July 8 <sup>th</sup> , 2019

## 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

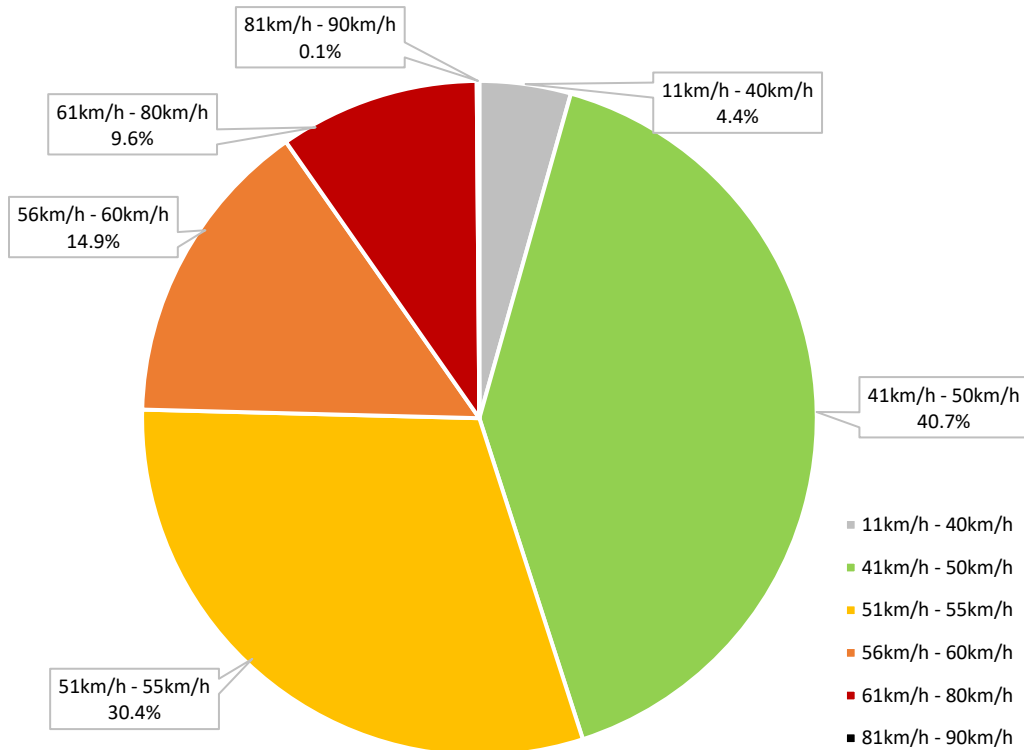
The posted speed limit on Vindin St is 50km/h; however, generally it is accepted that vehicles that are travelling up to 10km/h above the posted speed limit are not considered to be speeding. Table 2 below shows an overall speed summary of the data collected for eastbound and westbound directions.

**Table 2. Speed Summary**

Direction	Average Speed (km/h)	Minimum Speed (km/h)	Maximum Speed(km/h)
Eastbound	51.4	10	87
Westbound	56.8	10	120

## 2.1 Eastbound Speed Analysis

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



**Figure 2. Vindin St. Eastbound**

From this summary we can see that 45% of vehicles were travelling below the posted speed limit, 45% of vehicles were travelling between 51-60 km/h, and 10% 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 90% of vehicles were travelling within the accepted speed limit in the eastbound direction.

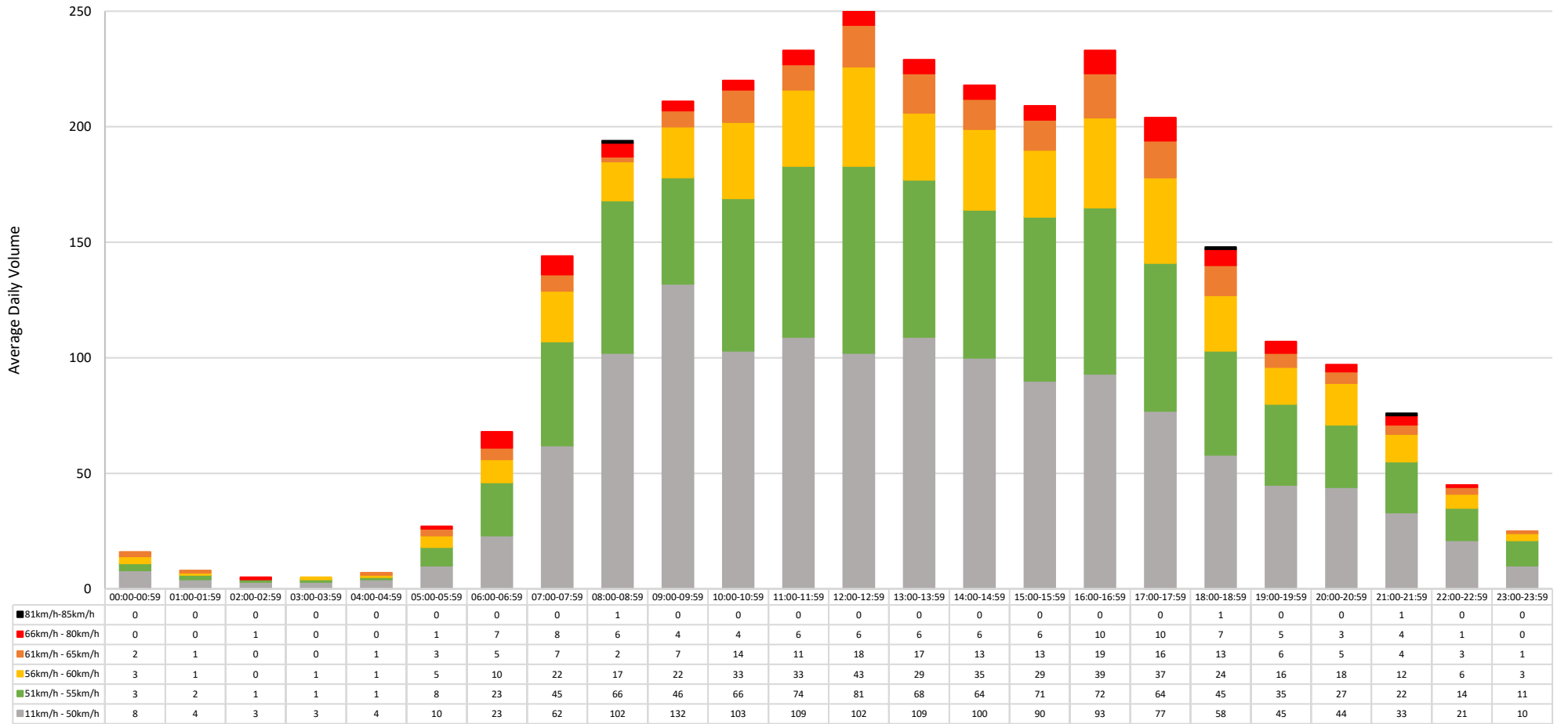
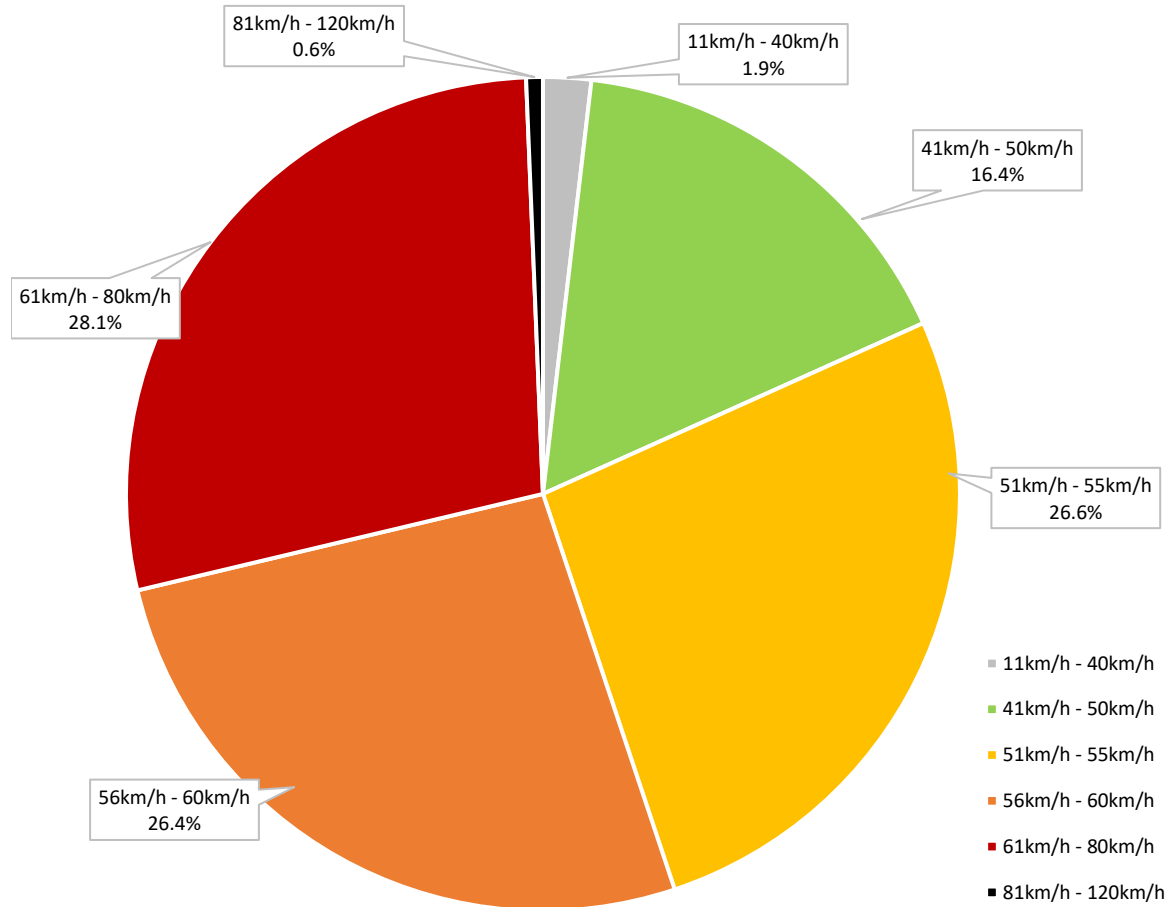


Figure 3. Speed by Hour Analysis for Eastbound

## 2.2 Westbound Speed Analysis

Figure 4 to 6 are the speed summary for the westbound traffic.



**Figure 4. Vindin St. Westbound**

From this summary we can see that 18% of the vehicles were travelling below the posted speed limit, 53% of vehicles were travelling between 51-60 km/h, and 29% 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 71% of vehicles were driving within the accepted speed limit. It is also noticed that there were more vehicles speeding in the afternoon.

Furthermore, the traffic trailer detected that 82% of vehicles slowed down in eastbound direction and 74% slowed down in westbound 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.

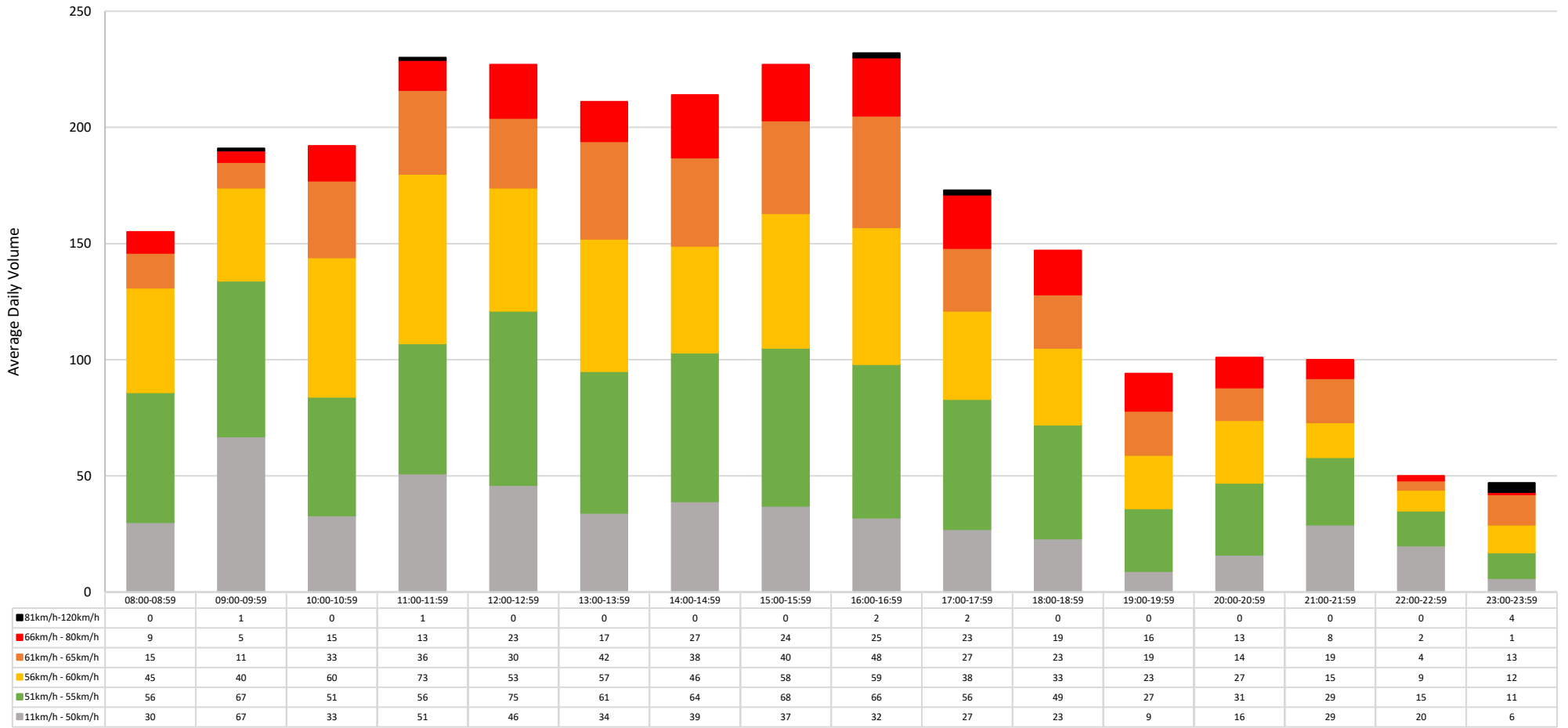


Figure 5. Speed by Hour Analysis for Westbound (July 5<sup>th</sup>, 2019)

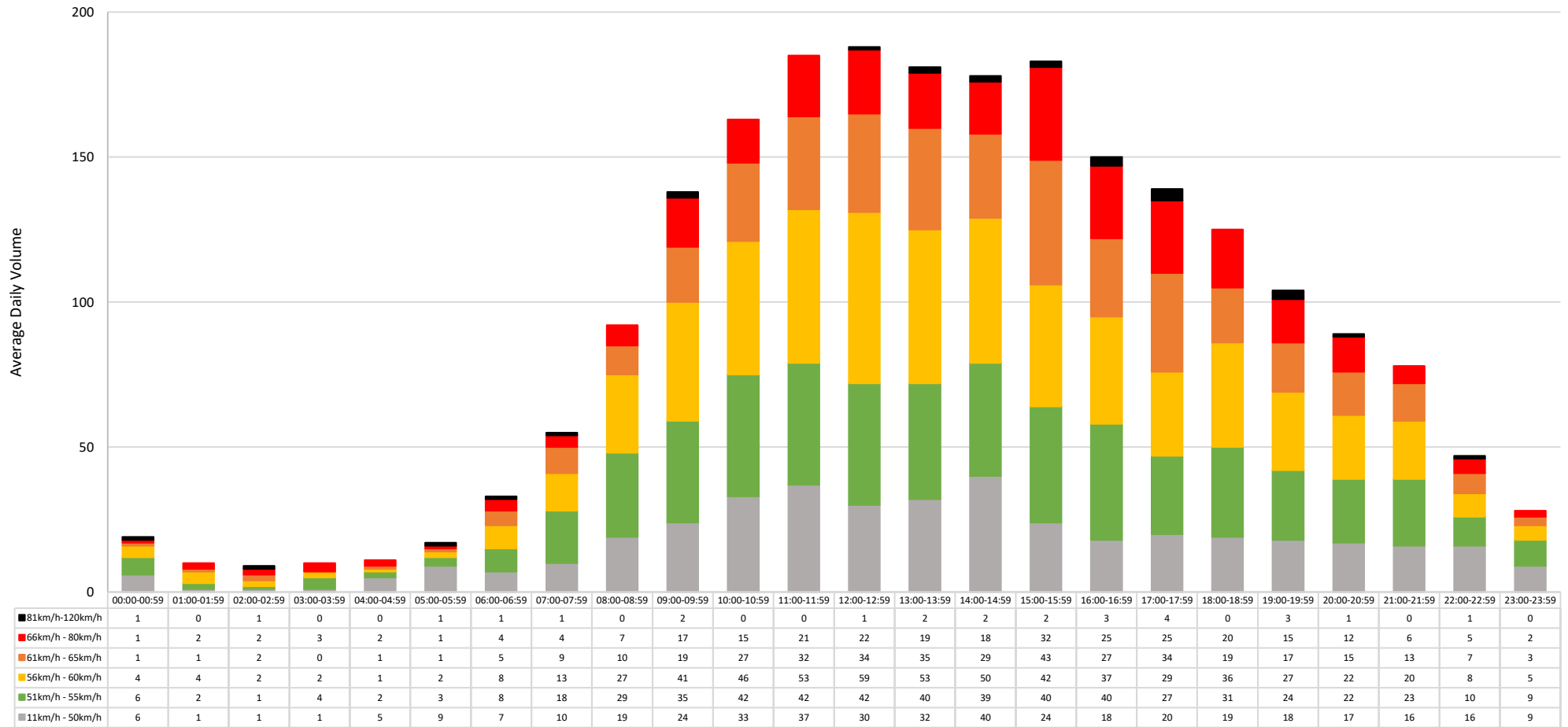


Figure 6. Speed by Hour Analysis for Westbound (July 6<sup>th</sup> to July 7<sup>th</sup>, 2019)

### 3.0 Traffic Volume

Table 3 shows the average daily volume on Vindin St for eastbound and westbound directions. Only the days when the traffic trailer was placed there for the full 24 hours are used in traffic volume analysis.

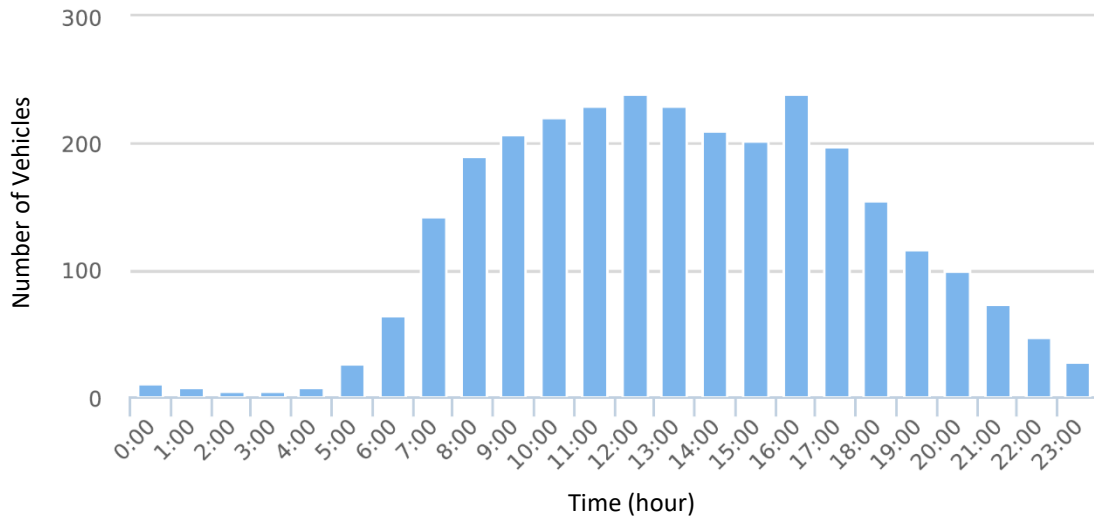
**Table 3. Volume Summary**

Direction	Period	Average Daily Traffic Volume
Eastbound	July 3 <sup>rd</sup> to July 4 <sup>th</sup> (Tuesday to Thursday)	2,942
Westbound	July 6 <sup>th</sup> to July 7 <sup>th</sup> (Saturday to Sunday)	2,187

Unfortunately, the trailer was only placed in the westbound of Vindin St from 08:00 to 23:59 on July 5<sup>th</sup> (Friday) which cannot represent the average traffic volume on a weekday. By comparing to the average volume in eastbound direction on a weekday, it can be predicted that the volume on a weekday in westbound direction should be around 2,700 to 2,900.

### 3.1 Eastbound Volume by Hour

The data collected for two full days (July 3<sup>rd</sup> and July 4<sup>th</sup>) is used to analyze the average traffic volume at different time of a day (Figure 7). From the graph, Vindin St has peak traffic during the typical evening rush hour and noon hour.

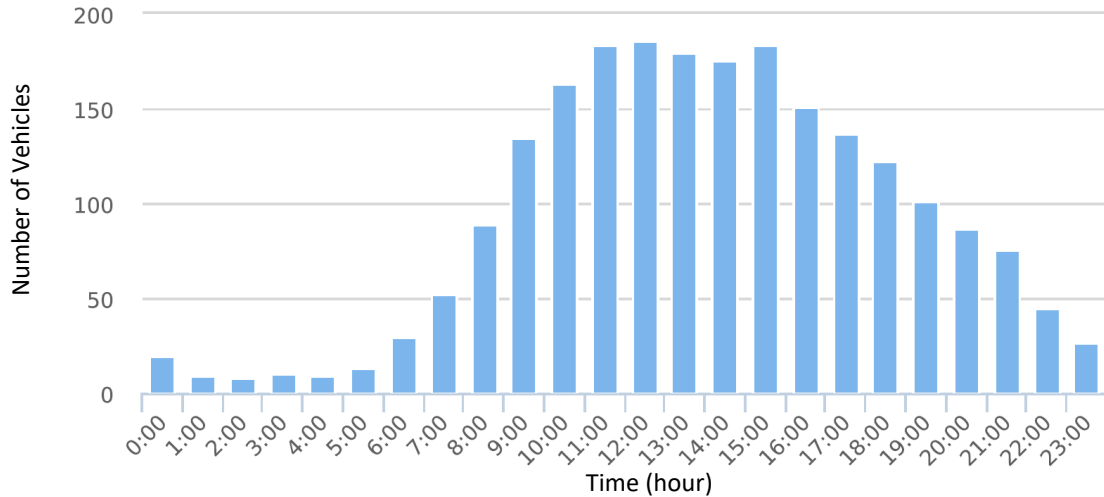


**Figure 7. Average Volume by Hour from July 3<sup>rd</sup> to July 4<sup>th</sup> (Eastbound)**



### 3.2 Westbound Volume by Hour

The data collected from July 6<sup>th</sup> to July 7<sup>th</sup> (weekends) are used to analyze the average traffic volume at different time of the day as shown in Figure 8. From the graph, the traffic on the weekend in the westbound direction has a peak volume in the afternoon.



**Figure 8. Average Volume by Hour on July 6<sup>th</sup> to July 7<sup>th</sup> (Westbound)**

### 4.0 Conclusion

The traffic study conducted on Vindin St for both eastbound and westbound directions was successfully carried out from July 2<sup>nd</sup> to July 8<sup>th</sup>, 2019. From the speed analysis, it was determined that 90% of vehicles travelling in the eastbound direction were travelling within the accepted speed limit. It was also determined that 71% of vehicles travelling in the westbound 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 evening rush hour and noon for eastbound direction on a weekday. The westbound traffic was monitored over the weekend and it was noted that it has peak volume in the afternoon.