
Brandywine

Traffic Data Summary

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Town of Cary

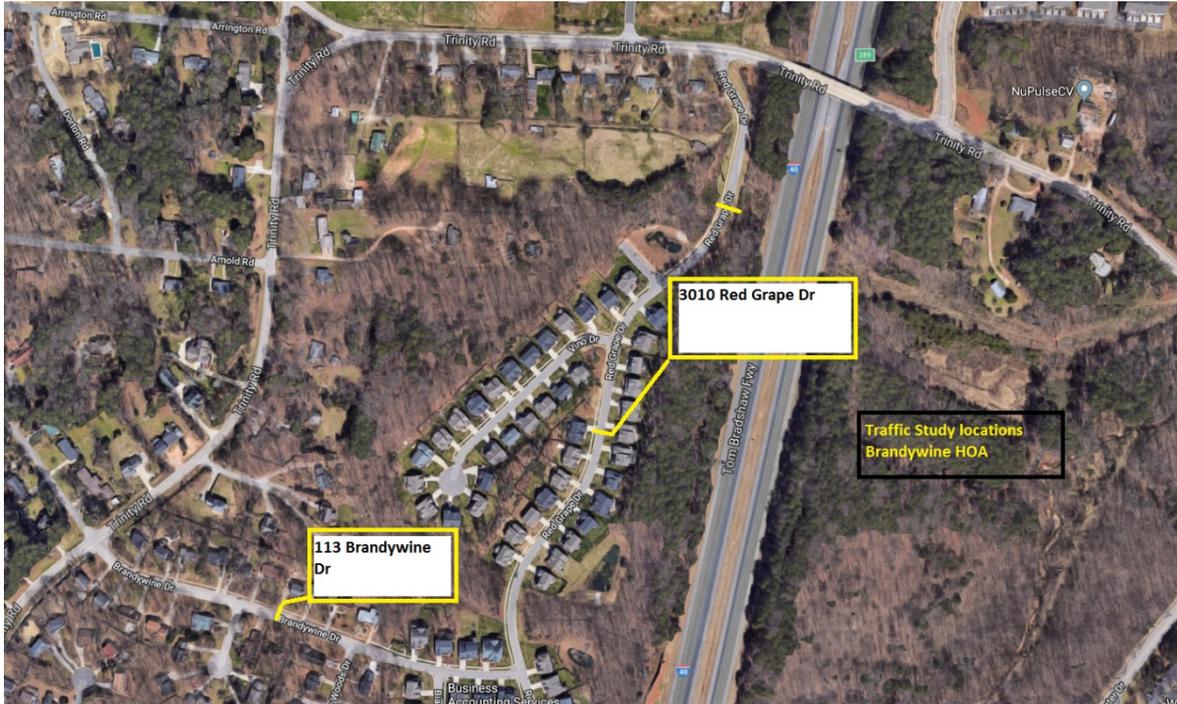
Transportation and Facilities

919-380-4236

Brandywine Traffic Data Summary

Introduction

The following summary details information provided as a result of the recent traffic study on Brandywine Drive and Red Grape Drive. The Brandywine subdivision is located near Trinity Road located in northeast Cary. The location was selected through collaboration with the Town through collaboration with HOA members. The data collection locations are shown below.



Average Daily Traffic

Average Daily Traffic (ADT) is the total vehicle volume during a given time period, greater than one day and less than one year, divided by the number of days in that period. It is common to see a fluctuation in the average daily traffic along a road. Therefore, these values listed below are averages of the 24 hour counts that are comprised in the data sets. The ADT data is presented below for the traffic counts that were conducted along both roadways. This ADT is higher than average for a local road.

Road	Year	ADT (vehicles per day)
Brandywine Dr	2018	632

Road	Year	ADT (vehicles per day)
Red Grape Drive	2018	308

Brandywine Traffic Data

Roadway and Speed Data

Speed data was collected along Brandywine Drive from midnight on October 10, 2017 until midnight on October 13, 2017. Brandywine Drive is classified as a local street with a posted speed limit of 25 mph. The results of the data collection effort are provided.

Road	Date	Mean (Average) Speed (mph)		
		EB	WB	Average
Brandywine Dr. east of Firewood Circle	4/2018	26	25	25.5

Road	Date	50 th Percentile Speed (mph)		
		EB	WB	Average
Brandywine Dr. east of Firewood Circle	4/2018	26	26	26

Road	Date	85 th Percentile Speed (mph)		
		EB	WB	Average
Brandywine Dr. east of Firewood Circle	4/2018	32	32	32

Road	Date	Mean (Average) Speed (mph)		
		NB	SB	Average
Red Grape Dr. north of Brandywine Dr.	4/2018	20	17	18.5

Road	Date	50 th Percentile Speed (mph)		
		NB	SB	Average
Red Grape Dr. north of Brandywine Dr.	4/2018	20	17	18.5

Road	Date	85 th Percentile Speed (mph)		
		NB	SB	Average
Red Grape Dr. north of Brandywine Dr.	4/2018	27	24	25.5

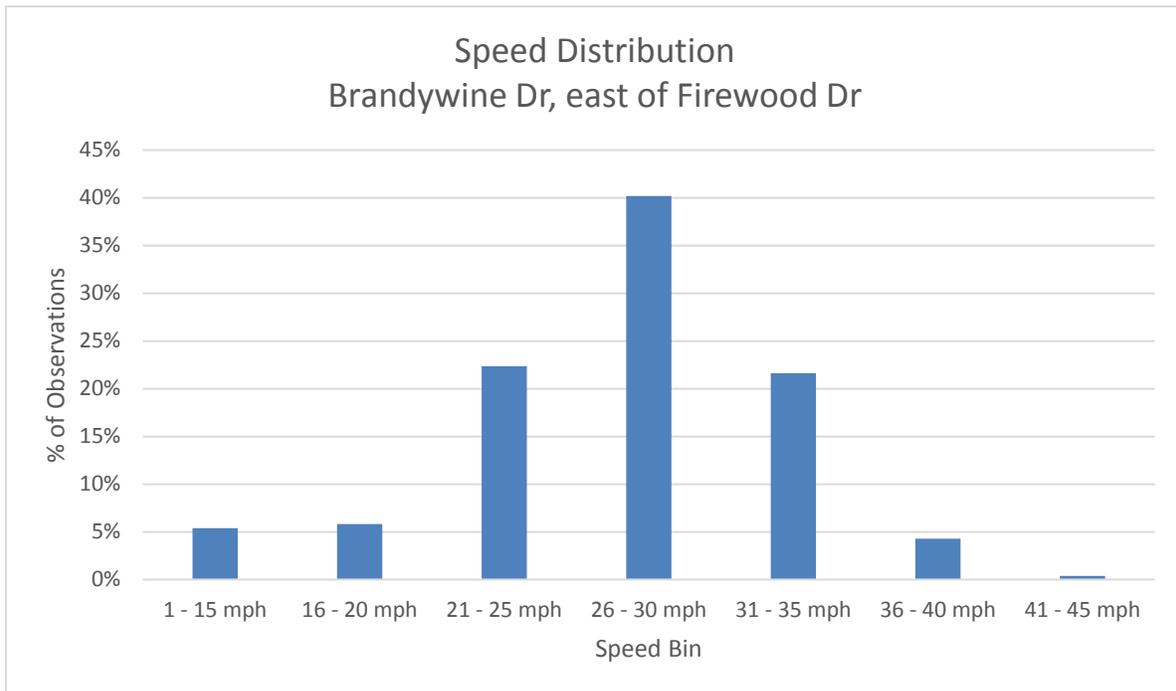
Brandywine Traffic Data Summary

Based on the data collected, the speed results are higher than average for a local road with a posted speed limit of 25 mph on Brandywine Drive. Generally, the 85th percentile speed should closely resemble the posted speed limit/design speed of the road, but for this road it is more than 7 mph over the posted speed limit.

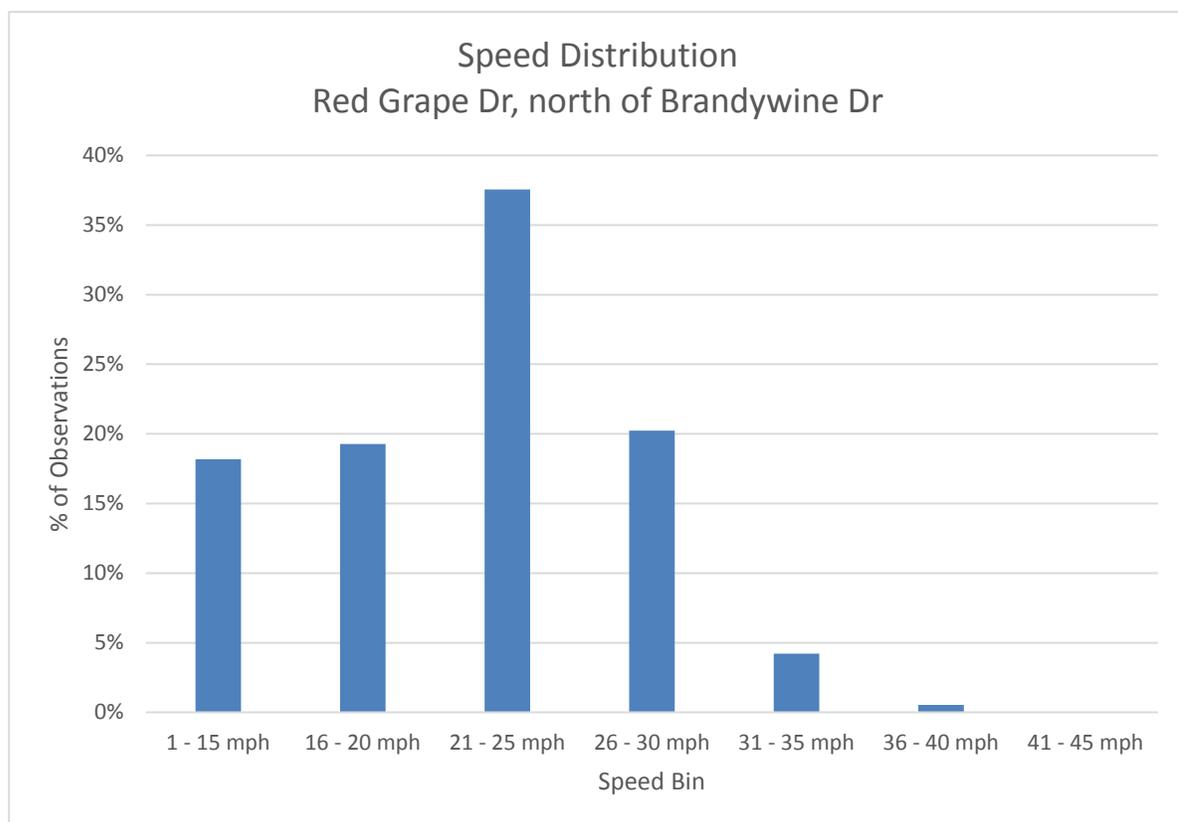
Number of Vehicles Detected in Each Speed Bin

Most traffic streams have speeds that are normally distributed. This means that most values for speed typically occur in a central range, with fewer values occurring outside of this range on either the high or the low side. Few drivers will drive extremely fast or extremely slow in comparison to others. The figure below shows the comparison of the speed distributions and the number of vehicles detected in each speed bin.

Based on the percentage of observations for Brandywine Drive, each speed bin, the highest percentage of vehicles travel between the speeds of 26 - 30 mph. The speed bin ranges indicate a large percentage of vehicles are driving above the posted speed limit of 25 mph. It is common to see 1-2% of the speeds in a ticketable range which tends to be 10 mph over the speed limit for this roadway type and vehicular volume. However, for this street, 4% of vehicle speeds are in this range.



Brandywine Traffic Data



The figures above show the pattern of speed distribution at the count locations. Based on the data, the locations do exhibit a pattern of normal distribution, as the bulk number of observations is in a central range with most drivers driving 21-25 mph on Red Grape Dr. In the ticketable range, less than 1% of vehicles which is typical on most neighborhood roads.

Volumes

On Brandywine Drive there were 1,896 total vehicles observed over the 36-hour period; 1,059 were headed in the eastbound direction and 837 were headed in the westbound direction. Volume is similar for each direction across an entire day. Westbound volume is heavier in the morning and eastbound volume is heavier in the afternoon.

On Red Grape Drive there were 924 total vehicles observed over the 36-hour period; 588 were headed in the northbound direction and 336 were headed in the southbound direction. Volume is heavier in the northbound direction throughout the day. Northbound volume is heavier in the morning and afternoon when compared to the southbound movement.

Brandywine Traffic Data Summary

Red Grape Drive

Data Collection Date	AM Peak Hour	NB and SB Combined Volume	PM Peak Hour	NB and SB Combined Volume
4/10/18	7:15 AM	32	5:00 PM	37
4/11/18	7:45 AM	36	5:00 PM	38
4/12/18	7:45 AM	36	4:30 PM	32

Data Collection Date	AM Peak Hour	NB Volume	PM Peak Hour	NB Volume
4/10/18	7:15 AM	17	5:00 PM	25
4/11/18	7:45 AM	24	5:45 PM	27
4/12/18	7:45 AM	21	4:30 PM	22

Data Collection Date	AM Peak Hour	SB Volume	PM Peak Hour	SB Volume
4/10/18	7:45 AM	15	4:30 PM	12
4/11/18	7:30 AM	17	3:45 PM	11
4/12/18	7:45 AM	15	4:00 PM	10

Brandywine Drive

Data Collection Date	AM Peak Hour	EB and WB Combined Volume	PM Peak Hour	NB and SB Combined Volume
4/10/18	5:30 AM	77	7:45 PM	63
4/11/18	5:15 AM	82	7:30 PM	64
4/12/18	5:15 AM	70	7:15 PM	59

Data Collection Date	AM Peak Hour	EB Volume	PM Peak Hour	EB Volume
4/10/18	5:30 AM	52	7:15 PM	17
4/11/18	5:15 AM	51	7:45 PM	19
4/12/18	5:15 AM	46	8:15 PM	24

Data Collection Date	AM Peak Hour	WB Volume	PM Peak Hour	WB Volume
4/10/18	5:45 AM	25	7:45 PM	46
4/11/18	4:30 AM	31	7:30 PM	45
4/12/18	5:00 AM	24	7:15 PM	35

Brandywine Traffic Data

Conclusion

In summary, based on the results of this study, staff would recommend traffic calming devices on Brandywine Drive with Council's approval. Furthermore, this study did not reveal the appearance of cut through traffic.