



WILDWOOD

MEMORANDUM

To: Board of Public Safety

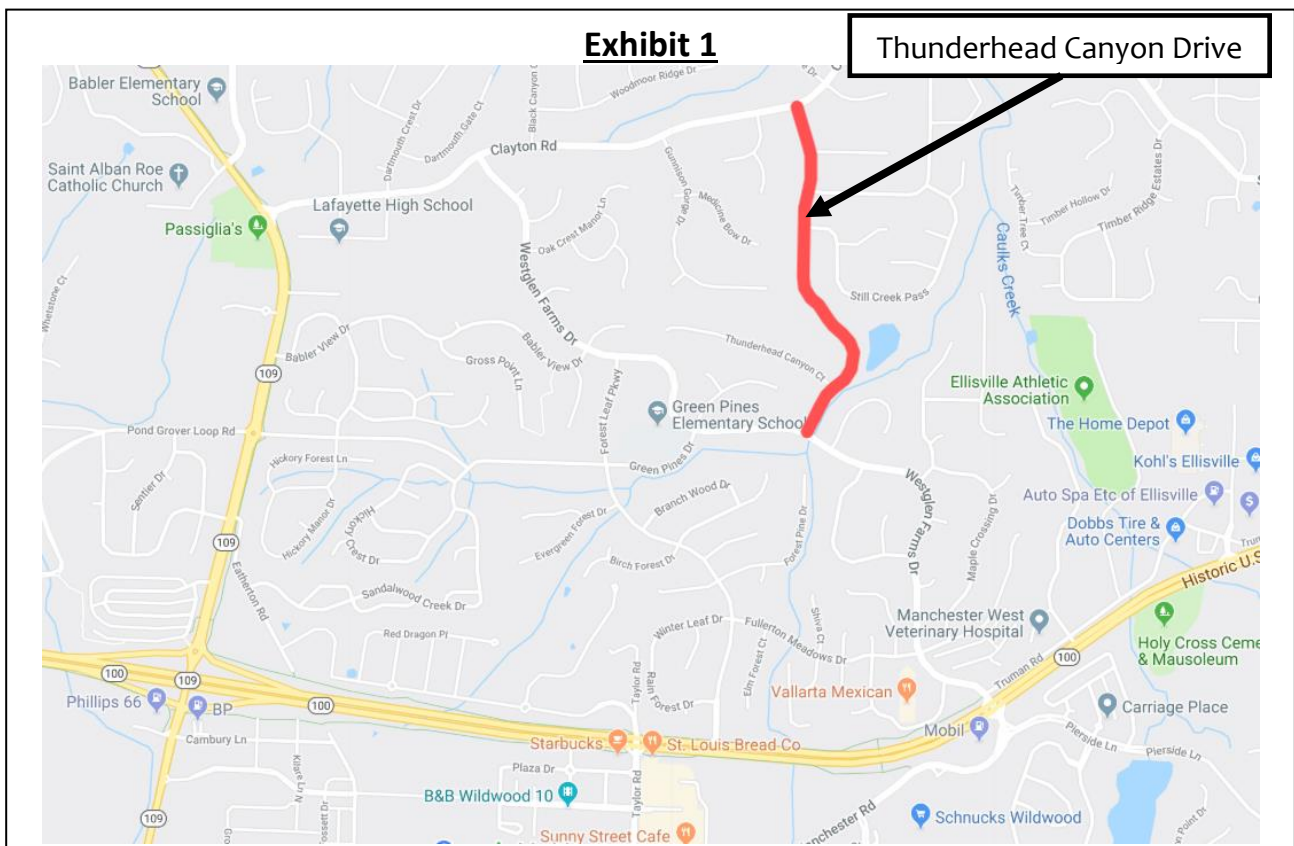
From: Rick Brown, Director of Public Works / City Engineer

Date: September 7, 2021

Re: Thunderhead Canyon Drive Speeding Traffic Concerns

Recently, The Department of Public Works has been contacted by Mr. Ben Kenkel, of 474 Thunderhead Canyon Drive (near Wolf Creek Pass), regarding speeding traffic on Thunderhead Canyon Drive. The location of Thunderhead Canyon Drive is shown below (see Exhibit 1).

Thunderhead Canyon Drive serves as a connector street between Clayton Road on the north and Westglen Farms Drive on the south. As a result, traffic heading to and from the east on Clayton Road, tends to utilize Thunderhead Canyon Drive to access Westglen Farms Drive, Green Pines School, and other streets to the south.



The issue of traffic on Thunderhead Canyon has been on the agenda for the Board of Public Safety to consider recently in both the fall of 2019 and 2020. (I have provided copies of the previous memorandums following this.) The prior discussions regarding Thunderhead Canyon Drive focused primarily on the volume of traffic on the road and determining the amount of traffic traveling between Clayton Road and Route 100.

Regarding the traffic volume, based on our counting, the average weekday traffic on Thunderhead Canyon Drive is about 2,100 vehicles per day. The Department has acknowledged that the traffic volume is high for a residential street. As a “rule of thumb”, a weekday traffic volume of 1,000 vehicles per day could be considered a maximum desirable traffic volume for a residential street, although many residential streets exceed that level of traffic.

Based on our study results, it is clear that some of the traffic on Thunderhead Canyon Drive travels between Clayton Road to State Route 100 (i.e. non-local traffic) in both the AM and PM peak periods, although it is occurring more frequently during the evening (PM) period. Our 2020 study found that the amount of non-local traffic traveling between Route 100 and Clayton Road did not exceed 4% of the total traffic volume on Thunderhead Canyon Drive during the peak periods. In 2019, the amount of non-local traffic was 10.4% (50 vehicles) during the PM peak hour and 4.6% (27 vehicles) during the AM peak period (although during this study Route 109 was under construction which may have increased the results).

As previously stated, the Department acknowledges that it doesn’t have a feasible solution which would significantly reduce the amount of non-local traffic on Thunderhead Canyon Drive. In fact, it is expected that significant traffic reductions would result in other non-desirable outcomes, such as diverting traffic onto neighboring residential streets, or eliminating through access altogether. For this matter to be fully evaluated, the Department would recommend hiring a qualified engineering firm to analyze this problem and recommend possible solutions.

From the Department’s perspective, we are left to managing the traffic to best of our abilities. This is primarily done through enforcement of the speed limit, which is the responsibility of the Wildwood Precinct.

Speed Surveys

The speed limit on Thunderhead Canyon Drive is 25 mph, which is consistent with residential streets in the City of Wildwood. The Wildwood Precinct is very aware of the concern for speeding traffic on Thunderhead Canyon Drive. They have been completing enforcement activities and conducting multiple speed surveys. The table below summarizes speed surveys of existing traffic on Thunderhead Canyon Drive. The Wildwood precinct obtain traffic speeds using a portable radar unit which is typically pole mounted and records for a period of seven (7) days.

Location	Date	Date	50 th	85 th
			Percentile Speed (mph)	Percentile Speed (mph)
At Wolfcreek Pass Ct.	8/25/2021	9/1/2021	24.9	28.9
At Wolfcreek Pass Ct.	10/7/2020	10/14/2020		27.0
At Still Creek Pass	11/18/2020	11/25/2020		28.0
At Still Creek Pass	2/24/2021	3/3/2021	25.9	28.9
At 426 Thunderhead Canyon Dr.	8/25/2021	9/1/2021	26.9	30.9
At 426 Thunderhead Canyon Dr.	8/31/2016	9/7/2016	28.0	33.0
At 363 Thunderhead Canyon Dr.	10/29/2015	11/5/2015	24.0	28.0

85th Percentile Speed

As has been discussed previously at Board meetings, the 85th percentile speed is the speed at which 85% of traffic is traveling at or slower. Traffic engineers typically use the 85th percentile speed as a key measure to establish speed limits, and we would typically set an appropriate speed limit at just below the 85th percentile speed. In the City of Wildwood, on similar residential streets, that serve as minor collector streets (that is they provide access to residents along the street, but also provide access to other residential streets), the 85th percentile speed is typically in the range of 27-29 mph. In the past, when faced with resident concerns, the policy of the Board has been to consider implementation of additional measures, beyond enforcement activities, only when the 85th percentile speed was 30 mph or greater. As can be seen in the table above, we have recorded two speed surveys where the 85th percentile speed was 30 mph or greater. Both were located at 426 Thunderhead Canyon Drive.

Recommended Implementation Measures

Therefore, in addition to continued enforcement by the Wildwood Precinct, to help provide greater conspicuity to the existing speed limit, the following are recommended for implementation by the Department:

1. Keep Kids Alive – Drive 25 Speed Zone (KKAD25) Special Enforcement Areas – Implementation of these special enforcement areas is established by city code and allows a unique speed limit sign to be installed (see **Exhibit 2**). KKAD25 enforcement areas allow that upon a conviction or a plea of guilty to a moving violation, the violator shall be a fined at least double. Previously, the city’s policy was to require that KKAD25 enforcement areas be located adjacent to public parks or schools, where children may be present. However, in reviewing this concern, KKAD25 enforcement areas are already in place for the entire length of Westglen Farms Drive and Prospector Ridge Road nearby. Thus, despite no schools or parks being present, the Department would support the implementation of a KKAD25 enforcement area on Thunderhead Canyon Drive, when considering the volume of traffic on this residential street.
2. Permanent LED Radar Sign – To help with enforcement of the existing speed limit, the Department has installed three permanent, solar powered, LED Radar Signs (see **Exhibit 3**). After installation, these signs have been well received to date, and the Department would recommend that an additional sign be installed in the southbound direction near 426 Thunderhead Canyon Drive. This installation would address the down grade to the south of Still Creek Pass, where the speeding is most concerning.

If the Board passes a motion in support of this recommendation, the Department will develop the necessary legislation for implementation of the KKAD25 enforcement area, which will be submitted to the City Council for approval. The Department can proceed with the Installation of the LED radar sign.

Captain Mundel and I will be available for questions or comments on this matter at the September 9th, 2021, Board of Public Safety meeting.

RCB



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Exhibit 2: Keep Kids Alive Drive 25 Sign



Exhibit 3: Permanent, Solar Powered, LED Radar Sign



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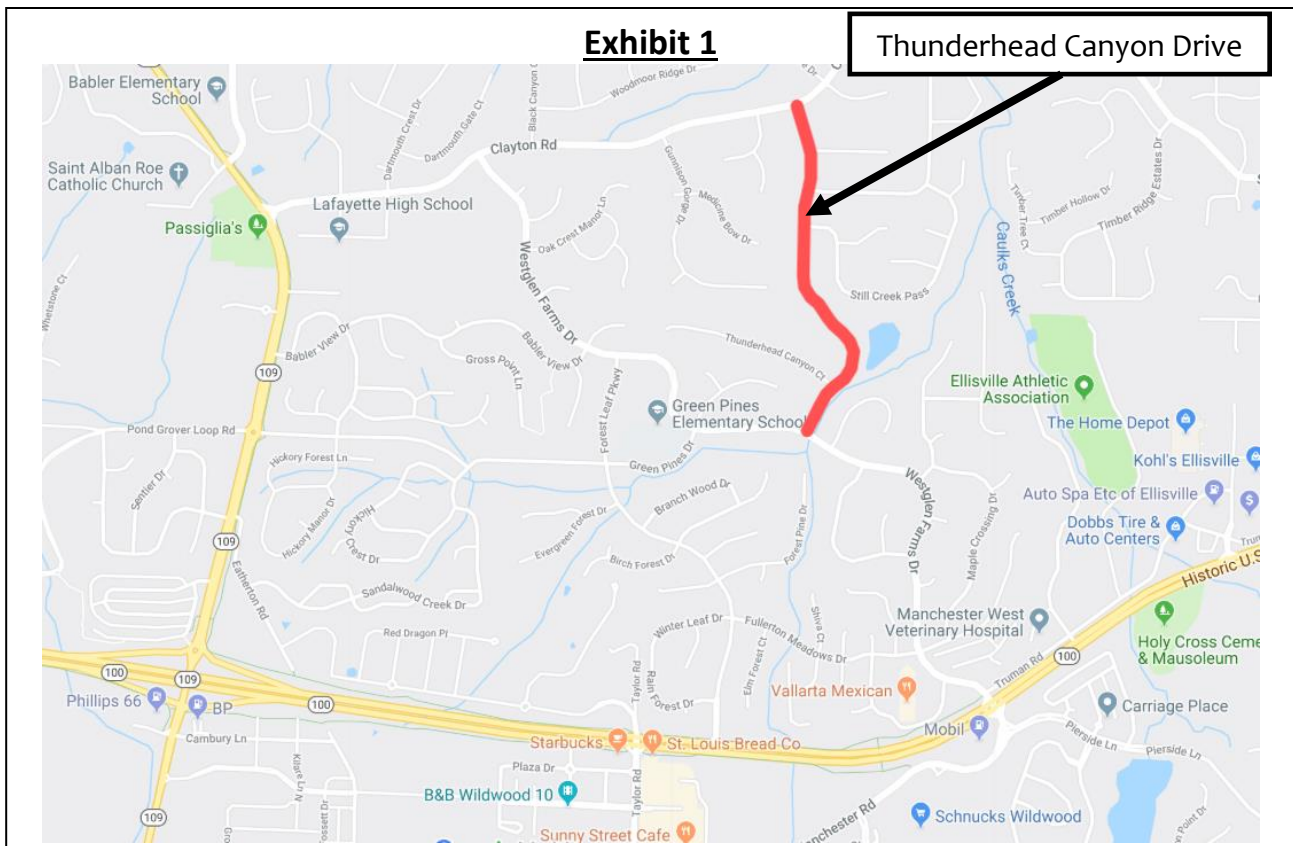
From: Rick Brown, Director of Public Works / City Engineer

Date: October 9, 2019

Re: Thunderhead Canyon Drive Traffic Concerns

At a recent Coffee with the Mayor, a resident raised concerns about the amount of traffic on Thunderhead Canyon Drive, and more specifically the amount of cut-through traffic on Thunderhead Canyon Drive. The location of Thunderhead Canyon Drive is shown below (see **Exhibit 1**).

Thunderhead Canyon Drive serves as a connector street between Clayton Road on the north and Westglen Farms Drive on the south. As a result, traffic heading to and from the east on Clayton Road, tends to utilize Thunderhead Canyon Drive to access Westglen Farms Drive and other streets to the south.



To evaluate this concern, the Department of Public Works recently completed a traffic study of Thunderhead Canyon Drive, which included two components: traffic counting and an origin/destination survey.

Traffic Count

The Department completed a three-day, 24-hour traffic count of Thunderhead Canyon Drive, just north of Thunderhead Canyon Ct., for the days of September 24-26, 2019. The results of this study is shown below (please see **Exhibit 2**). For comparison, we have included a previous traffic count from just over one year earlier (September 18-20, 2018), which is shown below (please see **Exhibit 3**).

Exhibit 2

Traffic Count Data			
Thunderhead Canyon Drive			
September 24-26, 2019			
Direction	Southbound	Northbound	Total
	3141	3206	6347
AWT=	1050	1070	2120
AWTT=	21	18	40
% Trucks=	2.00%	1.68%	1.89%

AWT = Average Weekday Traffic

AWTT = Average Weekday Truck Traffic

Exhibit 3

Traffic Count Data			
Thunderhead Canyon Drive			
September 18-20, 2018			
Direction	Southbound	Northbound	Total
	2907	3137	6044
AWT=	970	1050	2020
AWTT=	17	20	37
% Trucks=	1.75%	1.90%	1.83%

AWT = Average Weekday Traffic

AWTT = Average Weekday Truck Traffic

As can be seen above, the average weekday traffic on Thunderhead Canyon Drive, at the count location, was 2,120 vehicles per day in 2019 and 2,020 vehicles per day in 2018. It should be noted that this traffic volume is high for a residential street. As a “rule of thumb”, a weekday traffic volume of 1,000 vehicles per day, could be considered a maximum desirable traffic volume for a residential street.

Origin/Destination Survey

To investigate the issue of cut-through traffic, the Department completed an “origin/destination survey” of traffic traveling between Clayton Road to State Route 100. The goal of the survey was to determine the amount of cut-through (or non-local) traffic that utilizes Thunderhead Canyon Drive to connect between Clayton Road and Route 100 or between Clayton Road and Westglen Farms Drive.

To complete the survey, city staff observed traffic at three (3) locations during one hour of the morning (7-8 AM) and one hour of the evening (5-6 PM). City staff recorded the license plate numbers and noted the time of vehicles passing their individual survey locations. After the data was obtained, the license plate numbers were matched to determine if vehicles traveling on Thunderhead Canyon Drive traveled from State Route 100 to Clayton Road, or Westglen Farms to Clayton Road. The results of this effort are shown below.

Thunderhead Canyon Drive Origin Destination Survey (09/25/19_**Clayton Rd. to Westglen Farms Dr. Cut-Through Traffic**

Morning 7-8 AM			
Direction	Traffic Count	Number of Cut Through	Percentage of Cut-Through Traffic (%)
Northbound	202	86	42.6
Southbound	63	25	39.7
Total	265	111	41.9
Evening 5-6 PM			
Direction	Traffic Count	Number of Cut Through	Percentage of Cut-Through Traffic (%)
Northbound	120	44	36.7
Southbound	231	92	39.8
Total	351	136	38.8

Clayton Rd. to State Route 100 Cut-Through Traffic

Morning 7-8 AM			
Direction	Traffic Count	Number of Cut Through	Percentage of Cut-Through Traffic (%)
Northbound	302	19	6.3
Southbound	289	8	2.7
Total	591	27	4.6
Evening 5-6 PM			
Direction	Traffic Count	Number of Cut Through	Percentage of Cut-Through Traffic (%)
Northbound	183	15	8.2
Southbound	297	35	11.8
Total	480	50	10.4

Results Summary

Clayton Road / State Route 100:

- Between 5-6 PM, there were 50 vehicles (10.4%) traveling on Thunderhead Canyon Drive that ultimately traveled between Clayton Road and State Route 100.
- Between 7-8 AM, there were 27 vehicles (4.6%) that traveled between Clayton and State Route 100.

Clayton Road / Westglen Farms:

- Between 5-6 PM, there were 136 vehicles (38.8%) traveling on Thunderhead Canyon Drive that ultimately traveled between Clayton Road and State Route 100.
- Between 7-8 AM, there were 111 vehicles (41.9%) that traveled between Clayton and State Route 100.

Based on the survey results, it appears that “cut-through” traffic, between Clayton Road to State Route 100, is occurring in both the AM and PM peak periods, although it is occurring more frequently during the evening (PM) period.

The Department would acknowledge that it does not have a recommendation that would reduce the amount of “cut-through” traffic on Thunderhead Canyon Drive. In fact, reducing the traffic may not be possible, at least to a significant degree, without creating other non-desirable outcomes, such as diverting traffic onto other residential streets, or eliminating through access altogether. For this matter to be fully evaluated, the Department would recommend hiring a qualified engineering firm to analyze this problem and recommend possible solutions.

I will be available for questions or comments on this matter at the October 10th, 2019 Board of Public Safety meeting.

RCB



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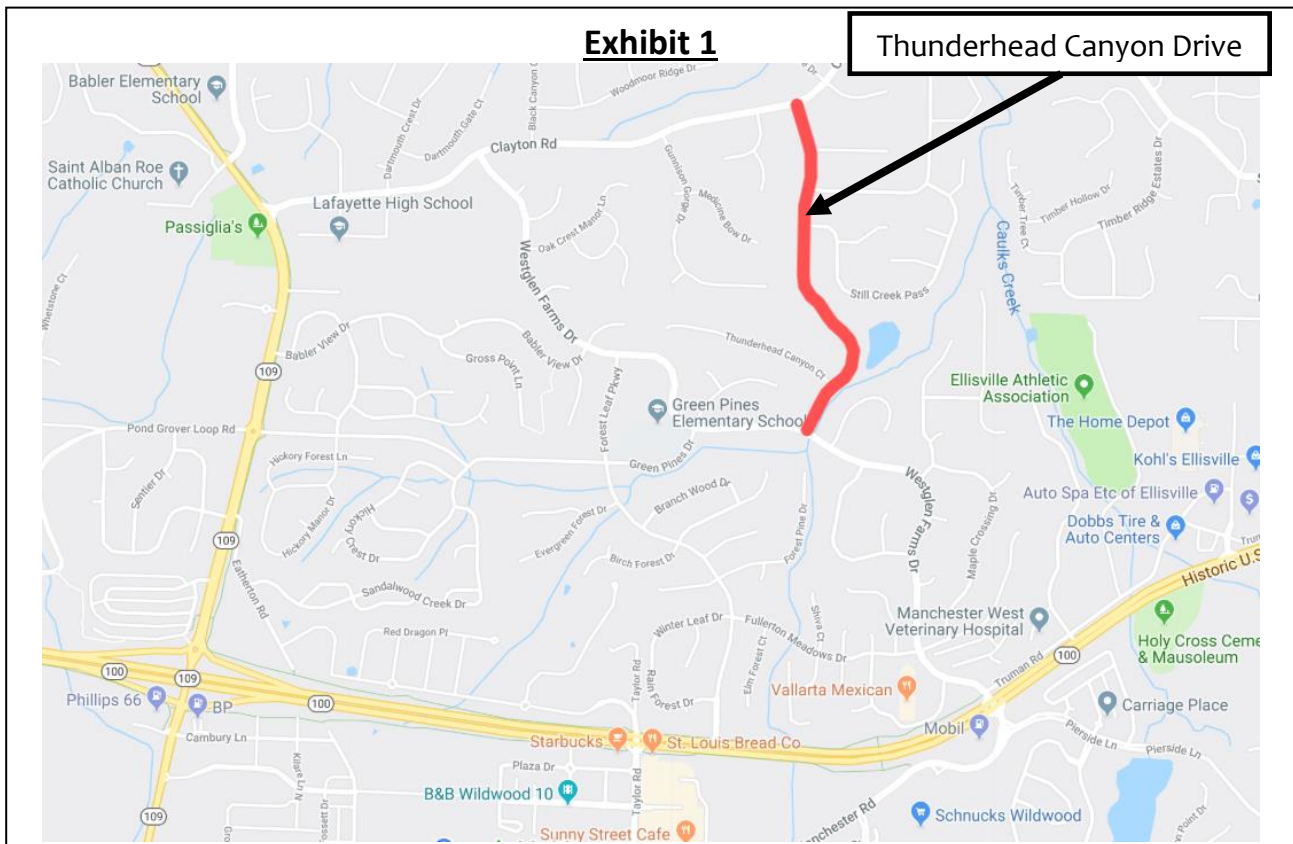
From: Rick Brown, Director of Public Works / City Engineer

Date: September 8, 2020

Re: Thunderhead Canyon Drive Traffic Concerns

Last fall, at the October meeting of the Board of Public Safety, the Board was presented with resident concerns regarding traffic volumes, and more specifically the amount of cut-through traffic, on Thunderhead Canyon Drive. The location of Thunderhead Canyon Drive is shown below (see **Exhibit 1**).

Thunderhead Canyon Drive serves as a connector street between Clayton Road on the north and Westglen Farms Drive on the south. As a result, traffic heading to and from the east on Clayton Road, tends to utilize Thunderhead Canyon Drive to access Westglen Farms Drive and other streets to the south.



During the discussion of this item, it was noted that the traffic data was obtained during MoDOT’s Route 109 construction project, which included lane restrictions on southbound Route 109 at Route 100. Thus, the data provided could have been skewed to reflect a higher traffic volume than normal. Thus, after discussion of this item, Council Member Dave Bertolino made a motion, which was approved by the Board, to re-survey the traffic in spring after the Route 109 construction has been completed.

2020 Updated Traffic Count

In line with the Board’s motion, the Department waited until the Route 109 improvements were completed before updating the traffic count data. Unfortunately, while the 109 improvement project was completed in May, most schools were not in session at that time, and traffic volumes were significantly diminished due to the COVID-19 pandemic. Thus, it was felt the earliest time when updated traffic data could be obtained would be August, assuming schools were back in session. Unfortunately, while schools have re-opened, most public schools are virtual, and traffic volumes are still significantly diminished due to the pandemic. Nonetheless, the Department felt that updated count data would have some value, and thus, we completed an updated three-day, 24-hour traffic count of Thunderhead Canyon Drive, just north of Thunderhead Canyon Ct., for the days of August 25-27, 2020. The results of this study are shown below (please see **Exhibit 2**). For comparison, we have included the previous traffic count from earlier years (2018 and 2019).

Exhibit 2 – Thunderhead Canyon Traffic Counts

August 25-27, 2020				
	Direction	Direction	Direction	Direction
Total Vehicles for Period =		2355	2527	4882
AWT =		790	840	1630
AWATT =		0	0	0
AWT&BT=		6	8	14
% Articulated Trucks =		0.0%	0.0%	0.0%
% All Trucks and Buses =		0.8%	1.0%	0.9%
September 24-26, 2019				
	Direction	Direction	Direction	Direction
Totals Vehicles for Period =		3141	3206	6347
AWT =		1050	1070	2120
AWATT =		1	1	2
AWT&BT=		21	18	40
% Articulated Trucks =		0.1%	0.1%	0.1%
% All Trucks and Buses =		2.0%	1.7%	1.9%
September 18-20, 2018				
	Direction	Direction	Direction	Direction
Totals Vehicles for Period =		2907	3137	6044
AWT =		970	1050	2020
AWTT =		17	20	37
% All Trucks and Buses =		1.75%	1.90%	1.83%

AWT = Average Weekday Traffic
 AWATT = Average Weekday Articulated Truck Traffic
 AWT&BT= Average Weekday Truck and Bus Traffic
 AWTT = Average Weekday Truck Traffic

As can be seen, the average weekday traffic on Thunderhead Canyon Drive, at the count location, was 1630 vehicles per day during our recent count for 2020. For comparison, in 2019 the count was 2,120 vehicles per day, and in 2018 the count was 2,020 vehicles per day. Thus, our updated count for 2020 is down about 23% when compared to 2019 and down 19% when compared to 2018. As was previously noted, this traffic volume is high for a residential street. As a “rule of thumb”, a weekday traffic volume of 1,000 vehicles per day could be considered a maximum desirable traffic volume for a residential street, however this is somewhat subjective.

Origin/Destination Survey

To investigate the issue of cut-through traffic, the Department updated our prior “origin/destination survey” of traffic traveling between Clayton Road to State Route 100. The goal of the survey was to determine the amount of cut-through (or non-local) traffic that utilizes Thunderhead Canyon Drive to connect between Clayton Road and Route 100.

To complete the survey, city staff observed traffic at two (2) locations during one hour of the morning (7-8 AM) and one hour of the evening (5-6 PM). City staff recorded the license plate numbers and noted the time of vehicles passing their individual survey locations. After the data was obtained, the license plate numbers were matched to determine if vehicles traveling on Thunderhead Canyon Drive traveled from State Route 100 to Clayton Road. The results of this effort are shown below.

Thunderhead Canyon Drive Origin Destination Surveys Clayton Rd. to State Route 100 “Cut-Through” Traffic

August 2020 - Morning 7-8 AM			
<u>Direction</u>	<u>Traffic Count</u>	<u>Number of Cut Through</u>	<u>Percentage of Cut-Through Traffic (%)</u>
Northbound	215	10	4.7
Southbound	225	7	3.1
Totals	440	17	3.9
Evening 5-6 PM			
<u>Direction</u>	<u>Traffic Count</u>	<u>Number of Cut Through</u>	<u>Percentage of Cut-Through Traffic (%)</u>
Northbound	295	5	1.7
Southbound	363	16	4.4
Totals	658	21	3.2
September 2019 - Morning 7-8 AM			
<u>Direction</u>	<u>Traffic Count</u>	<u>Number of Cut Through</u>	<u>Percentage of Cut-Through Traffic (%)</u>
Northbound	302	19	6.3
Southbound	289	8	2.7
Totals	591	27	4.6

Evening 5-6 PM			
Direction	Traffic Count	Number of Cut Through	Percentage of Cut-Through Traffic (%)
Northbound	183	15	8.2
Southbound	297	35	11.8
Totals	480	50	10.4

2020 Results Summary

Clayton Road / State Route 100:

- Between 5-6 PM, there were 21 vehicles (3.2%) traveling on Thunderhead Canyon Drive that ultimately traveled between Clayton Road and State Route 100.
- Between 7-8 AM, there were 17 vehicles (3.9%) that traveled between Clayton and State Route 100.

2019 Results Summary

Clayton Road / State Route 100:

- Between 5-6 PM, there were 50 vehicles (10.4%) traveling on Thunderhead Canyon Drive that ultimately traveled between Clayton Road and State Route 100.
- Between 7-8 AM, there were 27 vehicles (4.6%) that traveled between Clayton and State Route 100.

Based on the updated survey results, the “cut-through” traffic, between Clayton Road to State Route 100, is still occurring in both the AM and PM peak periods, although at a reduced percentage of total traffic, when compared to our 2019 study. The reduction was more pronounced in the PM peak hour, which could be indicative of the impact due to the Route 109 project.

I will be available for questions or comments on this matter at the September 10th, 2020 Board of Public Safety meeting.

RCB