

**Traffic Impact Analysis: Berewick
Town of Blacksburg, VA
Tax Map No. 195-A-5
Parcel ID 006160**

July 1, 2020



EDEN & ASSOCIATES
engineering • planning • development

**1109 Brookdale Street, Suite B
Martinsville, Virginia 24112
Ph. 276.632.6231
Fax 276.632.3648
www.edenandassociates.com**

Part I: Introduction

Lucas TRC, LLC proposes to develop an eighty-four (84) parcel development along Toms Creek Road at Tax Parcel 195-A-5. The proposed development includes a new roadway connection to Toms Creek Road, between the intersection of “Toms Creek Road & Redbud Road” and the existing access to Toms Creek Park, on the eastern side of Toms Creek Road. Seventy-nine (79) lots will utilize the proposed roadway network. Five (5) proposed lots will have direct access to Redbud Road, adjacent to Brookfield Village. The property is currently zoned RR-1 (Rural Residential 1) with a request for PRD (Planned Residential District).

Toms Creek Road is a two-lane, undivided roadway that provides north / south access from US 460 Bypass to Laurel Drive, becoming Meadowbrook Drive and providing access to Glade Road. The proposed street network will connect to Toms Creek Road and ultimately extend to two undeveloped properties, Tax Parcels 165-A-7 and 195-1-1A. Extension of the roadway network by others could ultimately connect to Hidden Valley Drive and/or Redbud Road. The site has limiting factors relative to two tributaries flowing to Tom’s Creek. The proposed development proposes a single crossing of a tributary, thus limiting the immediate ability to connect to other existing roadways. A conceptual plan and preliminary plat, prepared by Eden & Associates, PC is included for reference of this analysis.

The traffic impact analysis includes the following specific items:

- a) analysis for any required turn lane and / or taper along Toms Creek Road;
- b) analysis for any impacts / Level of Service (LOS) to the signalized intersection at US 460 Bypass and Toms Creek Road;
- c) analysis for any impacts / LOS to the signalized intersection at Toms Creek Road / Patrick Henry Drive / University City Boulevard.

Part II: Executive Summary

(A) The proposed development, utilizing a new connection to Toms Creek Road for seventy-nine (79) proposed lots is positioned with adequate intersection sight distance along Toms Creek Road. The proposed development does not warrant any additional right turn lane / taper or left turn lane. The proposed intersection is adequate into the foreseeable future, as traffic could increase by an additional 50% prior to any right turn taper being warranted. Traffic would need to increase to four times the anticipated traffic patterns to warrant a left turn lane.

The proposed five (5) lots along Redbud Road has little impact to the intersection of Redbud Road and Toms Creek Road. The existing roadway serves fifty-five dwellings / lots. The existing traffic at the intersection of Redbud Road and Toms Creek Road can easily accommodate the traffic from five additional lots. The analysis is performed similar to the process performed at the proposed connection; however, Redbud Road has fewer right turns than the turns proposed by the development.

(B) The total proposed development has no significant impact to the signalized intersection at US 460 Bypass and Toms Creek Road. The proposed development does not degrade the overall level of service below LOS C. The Traffic Impact Statement from other proposed developments, *“The View (Frith Property)”* and *“Terrace View”*, in the area show the overall signalized intersection to operate at a Level of Service B or better and for each lane group to operate at a Level of Service C or better. Specific reference is directed to “Table 3” from *“The View (Frith Property)”* for ‘Build (2020) Conditions.

The proposed development introduces additional traffic to the signal. This analysis utilizes a potential ninety-five (95) dwellings; however, the actual number of dwellings proposed is eighty-four (84). This analysis incorporates the proposed development and other known proposed developments, not yet finalized, uses a background growth rate of 0.5% for the existing traffic, and evaluates Year 2028. As shown in the “Capacity Analysis Results” for the signal at “Tom’s Creek Road and WB US 460 Ramp”, the level of impact to the AM Peak Hour is approximately 0.6 seconds, and remains at LOS A. The delay to the PM Peak Hour is increased from approximately 11.2 to 14.8, an increase in 3.6 seconds; however, the overall level of service remains at LOS B. In addition, no segment is below a LOS C; the results of this analysis are similar to previous reports.

(C) The total proposed development has no significant impact to the signalized intersection at Toms Creek Road / Patrick Henry Drive / University City Boulevard. The proposed development does not degrade the overall level of service below LOS C. The Traffic Impact Statement from other proposed developments, *“The View (Frith Property)”* and *“Terrace View”*, in the area show the overall signalized intersection to operate at a Level of Service B during the AM Peak Hour and Level of Service C during the PM Peak Hour. Specific reference is directed to “Table 8” from *“Terrace View”* for ‘2020 Buildout Conditions. Within the previous study, the analysis shows that the “WBTR” lane operates at a LOS C (21.8 sec/veh) during the AM Peak Hour and a LOS D (45.1 sec/veh) during the PM Peak Hour.

As shown in the “Capacity Analysis Results” for the signal at “Tom’s Creek Road and University City Blvd / Patrick Henry Dr”, the level of impact to the intersection during the AM Peak Hour is approximately 0.8 sec/veh, and remains at LOS B. The delay to the PM Peak Hour is increased from approximately 29.5 to 31.5, an increase of 2.0 sec/veh; however, the overall level of service remains at LOS C. While the previous reports show a segment LOS D for the WBTR, this analysis shows that two segments, WBT/R and NBT/R depict a LOS D. Overall, the signal remains as a LOS C at 31.5 sec/veh. While the reported LOS is at the upper portion of LOS C, it is not at the upper limit (35 sec/veh).

The proposed road crossing of the tributary to Tom's Creek is designed to insure the 100-year flow does not overtop the roadway, the impacts to floodwaters do not impact upstream properties, and the flood elevation of waters crossing Toms Creek Road is not increased.

The proposed roadway network meets the requirements of the Virginia Department of Transportation relative to extension to undeveloped properties. The extension to undeveloped properties provides for potential "second connections" without additional crossing of tributaries.

Part III: Existing Roadway Data

Toms Creek Road is Town of Blacksburg Maintained. The Town has classified the roadway as a Collector Road with posted speed limit (25 MPH). Historically, traffic counts were performed along Toms Creek Road by other developments on April 4th, April 5th, and April 18th of 2018 relative to rezoning applications in the area between US 460 Bypass and Patrick Henry Drive. In addition, VDOT has provided published counts for 2018 in the segment between US460 Bypass and Patrick Henry Drive as well as the segment between US 460 Bypass and Redbud Road.

In review of the available information for the segment between US 460 Bypass and Patrick Henry Drive, it appears that traffic counts collected on Wednesday, April 18, 2018 is approximately 10% higher than the averaged traffic collected on Wednesday, April 4 and Thursday, April 5, 2018. The counts gathered on April 18, 2018 appear to be 30% higher than the VDOT 2018 published rates; to that extent, if VDOT published data is utilized, it shall be adjusted accordingly as a conservative measure to approximate anticipated traffic during normal operations.

Relative to the roadway segment from US 460 (Bypass Interchange) to Redbud Road (local road) the VDOT published information includes and ADT: 1800; K: 0.113; and Peak Hour Direction: 0.679. In addition, twelve-hour (12-hr) counts were taken on Thursday May 28, 2020 and Wednesday June 3, 2020. Due to the COVID-19 restrictions, these counts were collected to analyze percentages at the intersection of "Toms Creek Road and Redbud Road" rather than the overall volume of traffic. Results of the counts (in ½ hour increments) are provided in the attachment titled "Gathered Traffic Counts - Intersection of Toms Creek Road and Redbud Road".

As the VDOT 2018 published counts are the most recent counts meeting count criteria, this analysis takes the conservative approach to adjust the published counts to the percent volume shown by other counts of 2018 (an adjustment of 30%).

The proposed connection on Toms Creek Road (a collector road) is described as follows:
Minimum Distance (road connection to Redbud Road) = 600 LF or greater. (250 LF Table 2-2)
Minimum distance (road connection to US 460 Interchange) = 1,440 LF or greater. (750 LF Table 2-4).
Minimum distance of road connection to US 460 Interchange Signalized Intersection = 2,160 LF. (750 LF Table 2-4).

For reference, the applicable VDOT design standards are referenced in parenthesis (), with the minimum spacing requirement.

This Traffic Impact Statement is based on utilizing a conservative approach on multiple levels. The basis of analysis includes the following:

- A conservative background growth estimate of 0.5 percent (VDOT recommended) is utilized for known traffic counts;
- Known anticipated trip generation from rezoned properties, in which the development is not yet finalized, is incorporated into the analysis;
- In areas where traffic counts conflict, the most conservative estimate is utilized;

Part IV: Analysis of Existing Traffic

VDOT has published traffic counts for this area and is attached. Given the existing dwellings, the existing traffic appears to be less than anticipated, using 10 trips per dwelling from the ITE Trip Generation Manual. While published counts are utilized, additional data suggests that published counts could fluctuate as much as 30% above the published counts, to that extent, the published counts have been adjusted upward accordingly.

The published counts for Toms Creek Road are on a segment between US 460 Bypass and Redbud Road; however, no distribution of existing trips at the Toms Creek Road / Redbud Road intersection is published. An initial analysis of distribution based on the percentage of dwellings at each segment was utilized; however, actual 2020 traffic counts did not support the original distribution. A revised distribution, based on “actual 2020 counts”, is utilized to determine the amount of traffic adjacent the proposed connection. The line item “Trips to Remainder” describes the anticipated traffic along Tom’s Creek Road, across the site.

Part V: Analysis of Proposed Traffic

Using the 10th Edition of the ITE Trip Generation Manual, ITE Land Use for Single-Family Detached (210). The number of proposed dwellings utilizing the new connection is 79 dwellings. 5 proposed dwellings will utilize Redbud Road. The anticipated Daily, AM peak trips, and PM peak trips are calculated and depicted as attached. While the directional distribution of Toms Creek Road would suggest a 68/32 split relative to “toward US 460” or “away from US 460”, the existing traffic patterns at Redbud Road suggest that a more conservative approach be utilized. The site distribution of 92/8 has been utilized.

The proposed connection is analyzed for any need relative to right turn taper, right turn lane, and left turn lane. No taper or lane is warranted.

Beyond the site connection point, the signalized intersection at Toms Creek / US 460 Bypass has been analyzed for capacity and Level of Service (LOS). The preliminary distribution of traffic was circulated to the Town of Blacksburg and VDOT. The trip distribution is based in part on visual analysis of the existing traffic patterns and the 2018 counted traffic. The findings are described in the Executive Summary above.

In addition, the signalized intersection at Toms Creek Road / Patrick Henry Drive / University City Boulevard has been analyzed for capacity and Level of Service (LOS). The findings are described in the Executive Summary above.

Part VI: Analysis of Existing and Proposed Traffic – Turn Lane

As depicted in “Post-developed Traffic Volume – Analysis for Turn Lane”, the existing and proposed traffic is analyzed to determine the need for either a left turn lane or right turn lane. As summarized at the bottom of the page, using the assumption of a single connection to Tom’s Creek Road, no right turn lane is warranted based on anticipated peak hour trips. As no charts exists for a left turn lane warrant for design speeds of 30 MPH, no left turn lane is warranted. Further analysis of a left turn lane warrant for design speeds of 40 MPH was performed; no left turn lane is warranted. While the analysis was for eighty (80) lots, seventy-nine (79) lots are proposed to utilize this connection.

Part VII: Analysis of Existing and Proposed Traffic – US 460 Interchange

As depicted by the existing traffic counts, the interchange on the west side of US 460 experiences approximately 1,800 existing daily trips, or approximately 203 hourly trips. Given the traffic counts of April 4th, 5th, and 18th, 2018, the published traffic counts were adjusted to a conservative estimate. A full analysis for each of the referenced signalized intersections is completed. As reported above, each signal remains at an overall LOS C or better. The full analysis is provided by the report prepared by Ramey Kemp Associates and is attached.

Part VIII. Attachments

Existing Published Traffic Counts – East of US 460 (Analysis of data)

Background Growth Rate Analysis

Existing Published Traffic Counts – East of US 460 (VDOT published counts)

Existing Published Traffic Counts – West of US 460 (Analysis of data)

Existing Published Traffic Counts – West of US 460 (VDOT published count)

Gathered Traffic Counts – Map of Movements

Gathered Traffic Counts - Intersection of Toms Creek Road and Redbud Road

Proposed Trip Generation – based on dwelling units

Combination of Existing and Proposed Traffic – Turn Lane Warrant Analysis

Table 3-1 – Left Turn Lane Warrant Threshold

Figure 3-26 – Right Turn Taper / Lane Warrant Threshold

Aerial Map depicting dwellings within the area

Proposed Development Concept Plan

Traffic Projections (by Ramey Kemp Associates)

Trip Generation Summary and Capacity Analysis (by Ramey Kemp Associates)

Full Report of Signalized Intersections (by Ramey Kemp Associates)

Published Traffic Count (2018)				
Count Taken between US 460 and Prices Fork Road (East of US 460)				
Toms Creek Road (NB and SB)				
AADT	9,300			
K Factor	0.087			
Peak Hour Trips	809			
Direction Factor	0.601			
PHV	486	Peak direction (AM is SB, toward Prices Fork Rd)		
	323	Non-peak direction (AM is NB, toward US 460)		
Validation of VDOT 2018 counts using Averaged counts of 4/4/2018 and 4/5/2018				
PM Peak Hour Count:		1057	vehicles	1.31
Validation of VDOT 2018 counts using counts of 4/18/2018				
PM Peak Hour Count:		1183	vehicles	1.46
Recommendation: Given two known counts over three days that exceed published AADT, adjust the published AADT based on other known data.				
Background Growth Rate:				
Given seven counts over a 10-year period, a background growth rate can be established. Rather than utilize a negative growth rate, the VDOT recommended growth rate of 0.5% annual growth is used to address development on properties that do not include "rezoning" or "special exception". Known planned developments / redevelopments are incorporated into the analysis. This process, in addition to the 0.5% growth rate, more than adequately anticipates future traffic patterns. Utilizing this approach, the overall increase in traffic by other developments is more efficiently evaluated and could be described as a traffic growth rate of 4% to 5% between the years of 2018 and when development is finalized.				

Background Growth Rate				
Utilizing Route 3159 (Toms Creek Rd) from US 460 to Prices Fork Rd				
The segment utilized has more traffic counts performed on a more routine basis.				
Year	AADT	Yearly Growth Rate	Peak Hr Factor	Directional Peak
2018	9300	-1%	0.087	0.601
2017	9400	1%	0.093	0.502
2015	9200	2%	0.087	0.601
2014	9000	-11%	0.087	0.601
2012	11000	3%	0.091	0.505
2009	10000	-10%	0.099	0.517
2008	11000		0.096	0.523
Average Background Growth Rate:		-3%	As calculated over 10 years	
Background Growth Rate Used:		0.50%	As recommended by VDOT	
NOTES:				
1. Background Growth Rate is to approximate development of parcels where no rezoning or special exception process is utilized.				
2. A more appropriate approximation is to utilize the anticipated counts from any rezoning / special use process to better anticipate traffic in areas where development has not yet occurred.				
2. Deerfield was rezoned July 1991 and constructed prior to 2018 traffic counts.				
3. Brookfield Village was rezoned September 1996 and constructed prior to 2018 traffic counts.				
4. The Village at Toms Creek was rezoned and revised October 2001. While a majority of the dwellings have been constructed, the background growth rate will accommodate the remaining dwellings to be constructed.				

Virginia Department of Transportation
Traffic Engineering Division
2018
Annual Average Daily Traffic Volume Estimates By Section of Route
Montgomery Maintenance Area

Route	Length	AADT	QA	4Tire	Bus	-----Truck-----				QC	K Factor	QK	Dir Factor	AAWDT	QW	Year
						2Axle	3+Axle	1Trail	2Trail							
Town of Blacksburg																
3152 150	Prices Fork Rd	0.36	17000	G	98%	1%	1%	0%	0%	F	0.096	F	0.54	19000	G	2018
						From: Hethwood Blvd										
						To: Heather Dr										
3152 150	Prices Fork Rd	0.58	24000	G	98%	1%	1%	0%	0%	F	0.092	F	0.531	26000	G	2018
						From: US 460										
						To: Southgate Dr										
3153 150	Airport Rd	0.37	2000	G	98%	1%	1%	0%	0%	C	0.116	F	0.696	2100	G	2018
						From: Main Street										
						To: WCL Blacksburg										
3154 150	Glade Rd	1.55	1100	G	98%	1%	1%	0%	0%	C	0.105	F	0.567	1100	G	2018
						From: Boxwood Dr										
3154 150	Glade Rd	0.46	1500	G	99%	0%	1%	0%	0%	C	0.096	F	0.542	1600	G	2018
						From: Oriole Dr										
3154 150	Glade Rd	0.33	4500	G	99%	0%	1%	0%	0%	F	0.098	F	0.634	4900	G	2018
						From: University City Blvd										
						To: Main St										
3156 150	Roanoke St	0.49	5100	G	98%	0%	2%	0%	0%	C	0.097	F	0.567	5600	G	2018
						From: Owen St										
3156 150	Owen St	0.11	4400	G	98%	0%	2%	0%	0%	C	0.1	F	0.609	4800	G	2018
						From: Harding Ave										
3156 150	Harding Ave	0.11	4500	G	97%	0%	2%	0%	0%	C	0.092	F	0.594	4900	G	2018
						From: Owen St										
3156 150	Harding Ave	0.66	3800	G	97%	0%	2%	0%	0%	F	0.090	F	0.562	4100	G	2018
						From: Cork Dr										
						To: ECL Blacksburg										
3159 150	Tom's Creek Rd	1.08	9300	G	98%	1%	0%	0%	1%	C	0.087	F	0.601	10000	G	2018
						From: Prices Fork Rd										
						To: US 460										
3164 150	Mt Tabor Rd	0.92	2900	G	98%	1%	0%	0%	0%	C	0.101	F	0.605	3100	G	2018
						From: US 460 Bus										
						To: NCL Blacksburg										
3165 150	Patrick Henry Dr	0.79	3800	G	99%	0%	0%	0%	0%	C	0.101	F	0.536	4200	G	2018
						From: Harding Ave										
						To: Bus US 460										
3165 150	Patrick Henry Dr	0.83	8800	G	99%	0%	0%	0%	0%	F	0.092	F	0.519	9600	G	2018
						From: Toms Creek Rd										
						To: Progress St NW										
Town of Christiansburg																
1 154	Falling Branch Rd	0.46	430	G	98%	1%	1%	1%	0%	F	0.127	F	0.627	470	G	2018
						From: Dead End										
						To: US 11 Roanoke St										
3500 154	Mud Pike Rd	0.14	2600	G	98%	1%	1%	1%	0%	F	0.110	F	0.581	2800	G	2018
						From: 60-666 JB-154 WCL Christiansburg										
						To: SR 8 W Main Street; Moose Dr										
3501 154	S Franklin St	1.21	5300	G	98%	0%	1%	0%	0%	C	0.11	F	0.693	5800	G	2018
						From: ECL Christiansburg										
						To: Alleghany St										
3501 154	S Franklin St	0.57	5200	G	98%	0%	1%	0%	0%	F	0.099	F	0.616	5600	G	2018
						From: Alleghany St										
						To: US 460 Main St										
3502 154	Phlegar St	0.08	4500	G	99%	0%	1%	0%	0%	F	0.105	F	0.544	4900	G	2018
						From: US 11 Main St										
						To: First St										
3502 154	First St	0.40	4900	G	99%	0%	1%	0%	0%	C	0.111	F	0.560	5400	G	2018
						From: Phlegar St										
						To: US 460 Roanoke St										

Virginia Department of Transportation
Traffic Engineering Division
2017
Annual Average Daily Traffic Volume Estimates By Section of Route
Montgomery Maintenance Area

Route	Length	AADT	QA	4Tire	Bus	-----Truck-----				QC	K Factor	QK	Dir Factor	AAWDT	QW	Year
						2Axle	3+Axle	1Trail	2Trail							
Town of Blacksburg																
3152 150	Prices Fork Rd	0.36	17000	G	98%	1%	1%	0%	0%	F	0.114		0.524	18000	G	2017
						From: Hethwood Blvd										
						To: Heather Dr										
3152 150	Prices Fork Rd	0.58	24000	G	98%	1%	1%	0%	0%	F	0.1		0.558	26000	G	2017
						From: US 460										
						To: Southgate Dr										
3153 150	Airport Rd	0.37	2000	G	98%	1%	1%	0%	0%	C	0.129		0.629	2100	G	2017
						From: Main Street										
						To: WCL Blacksburg										
3154 150	Glade Rd	1.55	1100	G	98%	1%	1%	0%	0%	C	0.111		0.61	1100	G	2017
						From: Boxwood Dr										
3154 150	Glade Rd	0.46	1500	G	99%	0%	1%	0%	0%	C	0.103		0.584	1600	G	2017
						From: Oriole Dr										
3154 150	Glade Rd	0.33	4500	G	99%	0%	1%	0%	0%	F	0.104		0.65	4800	G	2017
						From: University City Blvd										
						To: Main St										
3156 150	Roanoke St	0.49	5100	G	98%	0%	2%	0%	0%	C	0.1		0.568	5500	G	2017
						From: Owen St										
						To: Roanoke St										
3156 150	Owen St	0.11	4400	G	98%	0%	2%	0%	0%	C	0.104		0.567	4700	G	2017
						From: Harding Ave										
						To: Owen St										
3156 150	Harding Ave	0.11	4600	G	97%	0%	2%	0%	0%	C	0.105		0.587	4900	G	2017
						From: Cork Dr										
3156 150	Harding Ave	0.66	3800	G	97%	0%	2%	0%	0%	F	0.096		0.589	4000	G	2017
						From: ECL Blacksburg										
3159 150	Tom's Creek Rd	1.08	9400	G	98%	1%	0%	0%	1%	C	0.093		0.502	10000	G	2017
						From: US 460										
						To: US 460 Bus										
3164 150	Mt Tabor Rd	0.92	2900	G	98%	1%	0%	0%	0%	C	0.101		0.569	3100	G	2017
						From: NCL Blacksburg										
						To: Harding Ave										
3165 150	Patrick Henry Dr	0.79	3800	G	99%	0%	0%	0%	0%	C	0.117		0.527	4100	G	2017
						From: Bus US 460										
						To: Toms Creek Rd										
3165 150	Patrick Henry Dr	0.83	8900	G	99%	0%	0%	0%	0%	F	0.098		0.522	9500	G	2017
						From: Progress St NW										
Town of Christiansburg																
1 154	Falling Branch Rd	0.46	430	G	98%	1%	1%	1%	0%	F	0.116		0.567	460	G	2017
						From: Dead End										
						To: US 11 Roanoke St										
3500 154	Mud Pike Rd	0.14	2600	G	98%	1%	1%	1%	0%	F	0.114		0.626	2800	G	2017
						From: 60-666 JB-154 WCL Christiansburg										
						To: SR 8 W Main Street; Moose Dr										
3501 154	S Franklin St	1.21	5400	G	98%	0%	1%	0%	0%	C	0.105		0.691	5700	G	2017
						From: ECL Christiansburg										
						To: Alleghany St										
3501 154	S Franklin St	0.57	5200	G	98%	0%	1%	0%	0%	F	0.099		0.597	5600	G	2017
						From: Alleghany St										
						To: US 460 Main St										
3502 154	Phlegar St	0.08	4600	G	99%	0%	1%	0%	0%	F	0.109		0.591	4900	G	2017
						From: US 11 Main St										
						To: First St										
3502 154	First St	0.40	5000	G	99%	0%	1%	0%	0%	C	0.118		0.543	5400	G	2017
						From: Phlegar St										
						To: US 460 Roanoke St										

Virginia Department of Transportation
Traffic Engineering Division
2015
Annual Average Daily Traffic Volume Estimates By Section of Route
Montgomery Maintenance Area

Route	Length	AADT	QA	4Tire	Bus	-----Truck-----				QC	K Factor	QK	Dir Factor	AAWDT	QW	Year
						2Axle	3+Axle	1Trail	2Trail							
Town of Blacksburg																
3154 150	Glade Rd	1.55	1200	G	98%	1%	1%	0%	0%	C	0.105		0.567	1300	G	2015
						From: WCL Blacksburg										
						To: Boxwood Dr										
3154 150	Glade Rd	0.46	1600	G	99%	0%	0%	0%	0%	C	0.096		0.542	1700	G	2015
						From: Oriole Dr										
						To: University City Blvd										
3154 150	Glade Rd	0.33	4800	G	99%	0%	0%	0%	0%	F	0.098		0.634	5100	G	2015
						From: Main St										
						To: Owen St										
3156 150	Roanoke St	0.49	4600	G	97%	0%	2%	0%	0%	C	0.097		0.567	4900	G	2015
						From: Roanoke St										
						To: Harding Ave										
3156 150	Owen St	0.11	5300	G	98%	0%	1%	1%	0%	C	0.1		0.609	5700	G	2015
						From: Owen St										
						To: Harding Ave										
3156 150	Harding Ave	0.11	5700	G	96%	1%	2%	1%	0%	C	0.092		0.594	6100	G	2015
						From: Owen St										
						To: Cork Dr										
3156 150	Harding Ave	0.66	4900	G	96%	1%	2%	1%	0%	F	0.090		0.562	5300	G	2015
						From: ECL Blacksburg										
						To: Prices Fork Rd										
3159 150	Tom's Creek Rd	1.08	9200	G	98%	1%	0%	0%	0%	C	0.087		0.601	9700	G	2015
						From: US 460										
						To: US 460 Bus										
3164 150	Mt Tabor Rd	0.92	3200	G	97%	1%	1%	2%	0%	C	0.101		0.605	3400	G	2015
						From: NCL Blacksburg										
						To: Harding Ave										
3165 150	Patrick Henry Dr	0.79	4600	G	99%	0%	0%	0%	0%	C	0.101		0.536	4900	G	2015
						From: Bus US 460										
						To: Toms Creek Rd										
3165 150	Patrick Henry Dr	0.83	12000	G	99%	0%	0%	0%	0%	F	0.092		0.519	13000	G	2015
						From: Progress St NW										
						To: Progress St NW										
Town of Christiansburg																
1 154	Falling Branch Rd	0.46	440	G	99%	1%	1%	0%	0%	F	0.127		0.627	460	G	2015
						From: 60-640 JB-154 SCL Christiansburg										
						To: US 11 Roanoke St										
3500 154	Mud Pike Rd	0.14	2600	G	99%	1%	1%	0%	0%	F	0.110		0.581	2700	G	2015
						From: SR 8 W Main Street; Moose Dr										
						To: ECL Christiansburg										
3501 154	S Franklin St	1.21	5400	G	99%	0%	0%	0%	0%	C	0.11		0.693	5800	G	2015
						From: Alleghany St										
						To: Alleghany St										
3501 154	S Franklin St	0.57	5600	G	99%	0%	0%	0%	0%	F	0.099		0.616	5900	G	2015
						From: US 460 Main St										
						To: US 11 Main St										
3502 154	Phlegar St	0.08	4100	G	98%	0%	1%	0%	0%	F	0.105		0.544	4400	G	2015
						From: First St										
						To: Phlegar St										
3502 154	First St	0.40	4700	G	98%	0%	1%	0%	0%	C	0.111		0.560	5000	G	2015
						From: US 460 Roanoke St										
						To: SR 8 App. Loc.										
3503 154	Depot St	0.12	8100	G	99%	0%	0%	0%	0%	F	0.092		0.546	8700	G	2015
						From: College St										
						To: College St										
3503 154	Depot St	0.14	9600	G	98%	1%	1%	1%	0%	F	0.1		0.573	10000	G	2015
						From: US 11 Radford St										
						To: US 11 Radford St										
3503 154	Depot St	0.41	14000	G	98%	1%	1%	1%	0%	C	0.093		0.500	15000	G	2015
						From: C7US 460										
						To: C7US 460										
3503 154	Depot St	0.91	2400	G	98%	1%	1%	1%	0%	F	0.124		0.584	2600	G	2015
						From: SR 111 Depot St; Cambria St										
						To: SR 111 Depot St; Cambria St										

Virginia Department of Transportation
Traffic Engineering Division
2014
Annual Average Daily Traffic Volume Estimates By Section of Route
Montgomery Maintenance Area

Route	Length	AADT	QA	4Tire	Bus	-----Truck-----				QC	K Factor	QK	Dir Factor	AAWDT	QW	Year
						2Axle	3+Axle	1Trail	2Trail							
Town of Blacksburg																
From: (3154/150) Glade Rd	1.55	1200	G	98%	1%	WCL Blacksburg				C	0.105	F	0.567	1200	G	2014
To: (3154/150) Glade Rd	0.46	1600	G	99%	0%	Boxwood Dr				C	0.096	F	0.542	1700	G	2014
From: (3154/150) Glade Rd	0.33	4700	G	99%	0%	Oriole Dr				F	0.098	F	0.634	5000	G	2014
To: (3154/150) Glade Rd						University City Blvd										
From: (3156/150) Roanoke St	0.49	4500	G	97%	0%	Main St				C	0.097	F	0.567	4800	G	2014
To: (3156/150) Roanoke St						Owen St										
From: (3156/150) Owen St	0.11	5200	G	98%	0%	Roanoke St				C	0.1	F	0.609	5600	G	2014
To: (3156/150) Owen St						Harding Ave										
From: (3156/150) Harding Ave	0.11	5600	G	96%	1%	Owen St				C	0.092	F	0.594	5900	G	2014
To: (3156/150) Harding Ave						Cork Dr										
From: (3156/150) Harding Ave	0.66	4800	G	96%	1%	ECL Blacksburg				F	0.090	F	0.562	5200	G	2014
To: (3156/150) Harding Ave																
From: (3159/150) Tom's Creek Rd	1.08	9000	G	98%	1%	Prices Fork Rd				C	0.087	F	0.601	9600	G	2014
To: (3159/150) Tom's Creek Rd						US 460										
From: (3164/150) Mt Tabor Rd	0.92	3100	G	97%	1%	US 460 Bus				C	0.101	F	0.605	3300	G	2014
To: (3164/150) Mt Tabor Rd						NCL Blacksburg										
From: (3165/150) Patrick Henry Dr	0.79	4500	G	99%	0%	Harding Ave				C	0.101	F	0.536	4800	G	2014
To: (3165/150) Patrick Henry Dr						Bus US 460										
From: (3165/150) Patrick Henry Dr	0.83	12000	G	99%	0%	Toms Creek Rd				F	0.092	F	0.519	12000	G	2014
To: (3165/150) Patrick Henry Dr						Progress St NW										
Town of Christiansburg																
From: (1/154) Falling Branch Rd	0.46	430	G	99%	1%	60-640 JB-154 SCL Christiansburg				F	0.127	F	0.627	460	G	2014
To: (1/154) Falling Branch Rd						US 11 Roanoke St										
From: (3500/154) Mud Pike Rd	0.14	2500	G	99%	1%	60-666 JB-154 WCL Christiansburg				F	0.110	F	0.581	2700	G	2014
To: (3500/154) Mud Pike Rd						SR 8 W Main Street; Moose Dr										
From: (3501/154) S Franklin St	1.21	5300	G	99%	0%	ECL Christiansburg				C	0.11	F	0.693	5700	G	2014
To: (3501/154) S Franklin St						Alleghany St										
From: (3501/154) S Franklin St	0.57	5500	G	99%	0%	Alleghany St				F	0.099	F	0.616	5800	G	2014
To: (3501/154) S Franklin St						US 460 Main St										
From: (3502/154) Phlegar St	0.08	4100	G	98%	0%	US 11 Main St				F	0.105	F	0.544	4300	G	2014
To: (3502/154) Phlegar St						First St										
From: (3502/154) First St	0.40	4600	G	98%	0%	Phlegar St				C	0.111	F	0.560	4900	G	2014
To: (3502/154) First St						US 460 Roanoke St										
From: (3503/154) Depot St	0.12	8000	G	99%	0%	SR 8 App. Loc.				F	0.092	F	0.546	8500	G	2014
To: (3503/154) Depot St						College St										
From: (3503/154) Depot St	0.14	9400	G	98%	1%	US 11 Radford St				F	0.1	F	0.573	10000	G	2014
To: (3503/154) Depot St						US 11 Radford St										
From: (3503/154) Depot St	0.41	14000	G	98%	1%	C7US 460				C	0.093	F	0.500	14000	G	2014
To: (3503/154) Depot St						SR 111 Depot St; Cambria St										

Virginia Department of Transportation
Traffic Engineering Division
2012
Annual Average Daily Traffic Volume Estimates By Section of Route
Montgomery Maintenance Area

Route	Length	AADT	QA	4Tire	Bus	-----Truck-----				QC	K Factor	QK	Dir Factor	AAWDT	QW	Year
						2Axle	3+Axle	1Trail	2Trail							
Town of Blacksburg																
3152 150 Princes Fork Rd	0.75	14000	G	98%	1%	1%	0%	0%	0%	C	0.094	F	0.590	15000	G	2012
						From: WCL Blacksburg										
						To: Hethwood Blvd										
3152 150 Princes Fork Rd	0.36	18000	G	98%	1%	1%	0%	0%	0%	F	0.086	F	0.593	19000	G	2012
						From: Heather Dr										
						To: US 460										
3153 150 Airport Rd	0.37	2200	G	99%	0%	1%	0%	0%	0%	C	0.116	F	0.635	2400	G	2012
						From: Southgate Dr										
						To: Main Street										
3154 150 Glade Rd	1.55	1100	G	99%	1%	0%	0%	0%	0%	C	0.101	F	0.634	1200	G	2012
						From: WCL Blacksburg										
						To: Boxwood Dr										
3154 150 Glade Rd	0.46	1600	G	99%	0%	0%	0%	0%	0%	C	0.100	F	0.587	1700	G	2012
						From: Oriole Dr										
						To: University City Blvd										
3156 150 Roanoke St	0.49	5500	G	98%	0%	1%	0%	0%	0%	C	0.095	F	0.561	5800	G	2012
						From: Main St										
						To: Owen St										
3156 150 Owen St	0.11	4700	G	98%	0%	2%	0%	0%	0%	C	0.092	F	0.586	5000	G	2012
						From: Roanoke St										
						To: Harding Ave										
3156 150 Harding Ave	0.11	5300	G	98%	0%	2%	0%	0%	0%	C	0.092	F	0.579	5600	G	2012
						From: Owen St										
						To: Cork Dr										
3156 150 Harding Ave	0.66	4500	G	98%	0%	2%	0%	0%	0%	F	0.086	F	0.572	4800	G	2012
						From: ECL Blacksburg										
3159 150 Tom's Creek Rd	1.08	11000	G	99%	1%	0%	0%	0%	0%	C	0.091	F	0.505	11000	G	2012
						From: Princes Fork Rd										
						To: US 460										
3164 150 Mt Tabor Rd	0.92	3000	G	98%	1%	1%	0%	0%	0%	C	0.101	F	0.614	3200	G	2012
						From: US 460 Bus										
						To: NCL Blacksburg										
3165 150 Patrick Henry Dr	0.79	4500	G	99%	0%	0%	0%	0%	0%	C	0.093	F	0.538	4800	G	2012
						From: Harding Ave										
						To: Bus US 460										
3165 150 Patrick Henry Dr	0.83	11000	G	98%	2%	0%	0%	0%	0%	C	0.090	F	0.53	11000	G	2012
						From: Toms Creek Rd										
						To: Progress St NW										
Town of Christiansburg																
1 154 Falling Branch Rd	0.46	460	G	98%	1%	0%	0%	0%	0%	F	0.123	F	0.631	490	G	2012
						From: 60-640 JB-154 SCL Christiansburg										
						To: US 11 Roanoke St										
3500 154 Mud Pike Rd	0.14	2500	G	98%	1%	0%	0%	0%	0%	F	0.104	F	0.628	2700	G	2012
						From: 60-666 JB-154 WCL Christiansburg										
						To: SR 8 W Main Street; Moose Dr										
3501 154 S Franklin St	1.21	5400	G								NA			5800	G	2012
						From: ECL Christiansburg										
						To: Alleghany St										
3501 154 S Franklin St	0.57	6500	G								0.087	F	0.601	7000	G	2012
						From: Alleghany St										
						To: US 460 Main St										
3502 154 Phlegar St	0.08	3900	G	98%	1%	1%	0%	0%	0%	F	0.103	F	0.514	4200	G	2012
						From: US 11 Main St										
						To: First St										

Virginia Department of Transportation
Traffic Engineering Division
2009
Annual Average Daily Traffic Volume Estimates By Section of Route
Montgomery Maintenance Area

Route	Length	AADT	QA	4Tire	Bus	-----Truck-----				QC	K Factor	QK	Dir Factor	AAWDT	QW	Year
						2Axle	3+Axle	1Trail	2Trail							
Town of Blacksburg																
3154 151 Glade Rd	0.33	4500	G	99%	0%	1%	0%	0%	0%	F	0.102	F	0.684	4900	G	2009
3156 150 Roanoke St	0.49	5500	G								NA			6100	G	2009
3156 150 Owen St	0.11	4600	G	97%	0%	2%	0%	0%	0%	C	0.092	F	0.591	5000	G	2009
3156 150 Harding Ave	0.11	5200	G	97%	1%	2%	0%	0%	0%	C	0.092	F	0.619	5600	G	2009
3156 151 Harding Ave	0.66	4300	G	97%	1%	2%	0%	0%	0%	F	0.089	F	0.619	4600	G	2009
3159 150 Tom's Creek Rd	0.96	10000	F	97%	2%	0%	0%	0%	0%	C	0.099	F	0.517	11000	F	2009
3159 151 Toms Creek Rd	0.12	NA									NA			NA		
3164 150 Mt Tabor Rd	0.92	3200	G	98%	0%	1%	0%	0%	0%	C	0.097	F	0.644	3500	G	2009
3165 150 Patrick Henry Dr	0.79	5800	G	98%	1%	1%	0%	0%	0%	C	0.091	F	0.558	6200	G	2009
3165 150 Patrick Henry Dr	0.83	11000	F	98%	2%	0%	0%	0%	0%	C	0.089	F	0.511	12000	F	2009
Town of Christiansburg																
1 154 Falling Branch Rd	0.46	40	G	99%	0%	0%	0%	0%	0%	F	NA			40	G	2009
3500 154 S Franklin St	0.14	2600	G	99%	0%	0%	0%	0%	0%	F	0.112	F	0.604	2800	G	2009
3501 154 S Franklin St	1.21	5400	G	98%	1%	1%	0%	0%	0%	C	0.103	F	0.702	5900	G	2009
3501 154 S Franklin St	0.57	5600	G	98%	1%	1%	0%	0%	0%	F	0.090	F	0.615	6100	G	2009
3502 154 Phlegar St	0.08	4100	G	99%	0%	1%	0%	0%	0%	F	0.097	F	0.63	4400	G	2009
3502 154 First St	0.40	4800	G	99%	0%	1%	0%	0%	0%	C	0.096	F	0.569	5200	G	2009
3503 154 Depot St	0.12	8500	G	98%	1%	1%	0%	0%	0%	F	0.091	F	0.601	9200	G	2009
3503 154 Depot St	0.14	11000	G	97%	1%	1%	1%	0%	0%	F	0.095	F	0.639	12000	G	2009
3503 154 Depot St	0.41	13000	G	97%	1%	1%	1%	0%	0%	C	0.091	F	0.543	14000	G	2009
3503 154 Depot St	0.91	2700	G	97%	1%	1%	1%	0%	0%	F	0.104	F	0.586	2900	G	2009

Virginia Department of Transportation
Traffic Engineering Division
2008
Annual Average Daily Traffic Volume Estimates By Section of Route
Montgomery Maintenance Area

Route	Length	AADT	QA	4Tire	Bus	Truck				QC	K Factor	QK	Dir Factor	AAWDT	QW	Year
						2Axle	3+Axle	1Trail	2Trail							
Town of Blacksburg																
③ 150 Givens Lane	1.57	1800	G	99%	0%	From: 150-3159 Chickahominy Dr				C	0.1	F		1900	G	2008
						To: Bus US 460 North Main St										
④ 150 Progress St	0.64	NA				From: Bus US 460, N Main St				NA			NA			
						To: 150-3165 Patrick Henry Dr										
④ 150 Progress St	0.32	810	G	99%	0%	From: 150-3165 Patrick Henry Dr				C	0.125	F		870	G	2008
						To: Northside Dr over Givens Lane to be corrected										
④ 150 Progress St	0.20	NA				From: Northside Dr				NA			NA			
						To: Givens Lane										
⑤ 150 Clay St	0.92	NA				From: Bus US 460				NA			NA			
						To: ECL Blacksburg; 60-694										
③150 150 Airport Rd	0.23	5300	G	99%	0%	From: Southgate Dr				F	0.110	F	0.583	5700	G	2008
						To: Country Club Dr										
③150 150 Country Club Dr	0.40	3500	G	99%	0%	From: Airport Rd				C	0.115	F	0.53	3800	G	2008
						To: Main St										
③151 150 Ellett Rd	0.71	5800	G	97%	1%	From: SCL Blacksburg				C	0.086	F	0.585	6300	G	2008
						To: S Main St										
③152 150 Prices Fork Rd	0.75	13000	G	98%	1%	From: WCL Blacksburg				C	0.107	F	0.594	14000	G	2008
						To: Hethwood Blvd										
③152 150 Prices Fork Rd	0.36	17000	G	98%	1%	From: Heather Dr				F	0.107	F	0.596	18000	G	2008
						To: US 460										
③152 150 Prices Fork Rd	0.58	25000	G	98%	1%	From: US 460				F	0.1	F	0.578	27000	G	2008
						To: Southgate Dr										
③153 150 Airport Rd	0.37	2300	G	99%	0%	From: Southgate Dr				C	0.117	F	0.623	2500	G	2008
						To: Main Street										
③154 150 Glade Rd	1.55	1200	G	99%	0%	From: WCL Blacksburg				C	0.106	F	0.685	1300	G	2008
						To: Boxwood Dr										
③154 150 Glade Rd	0.46	1600	G	99%	0%	From: Oriole Dr				C	0.097	F	0.645	1800	G	2008
						To: University City Blvd										
③154 150 Glade Rd	0.33	4800	G	99%	0%	From: University City Blvd				F	0.102	F	0.684	5200	G	2008
						To: Main St										
③156 150 Roanoke St	0.49	6000	G			From: Main St				NA			6600	G	2008	
						To: Owen St										
③156 150 Owen St	0.11	4800	G	97%	0%	From: Roanoke St				C	0.092	F	0.591	5200	G	2008
						To: Harding Ave										
③156 150 Harding Ave	0.11	5400	G	97%	1%	From: Owen St				C	0.092	F	0.619	5900	G	2008
						To: Cork Dr										
③156 150 Harding Ave	0.66	4500	G	97%	1%	From: Cork Dr				F	0.089	F	0.619	4800	G	2008
						To: ECL Blacksburg										
③159 150 Tom's Creek Rd	0.96	11000	G	98%	1%	From: Prices Fork Rd				C	0.096	F	0.523	12000	G	2008
						To: US 460 Bypass										
③159 150 Tom's Creek Rd	0.12	NA				From: RAMP TO FROM US 460 TOM CREEK ROAD				NA			NA			
						To:										

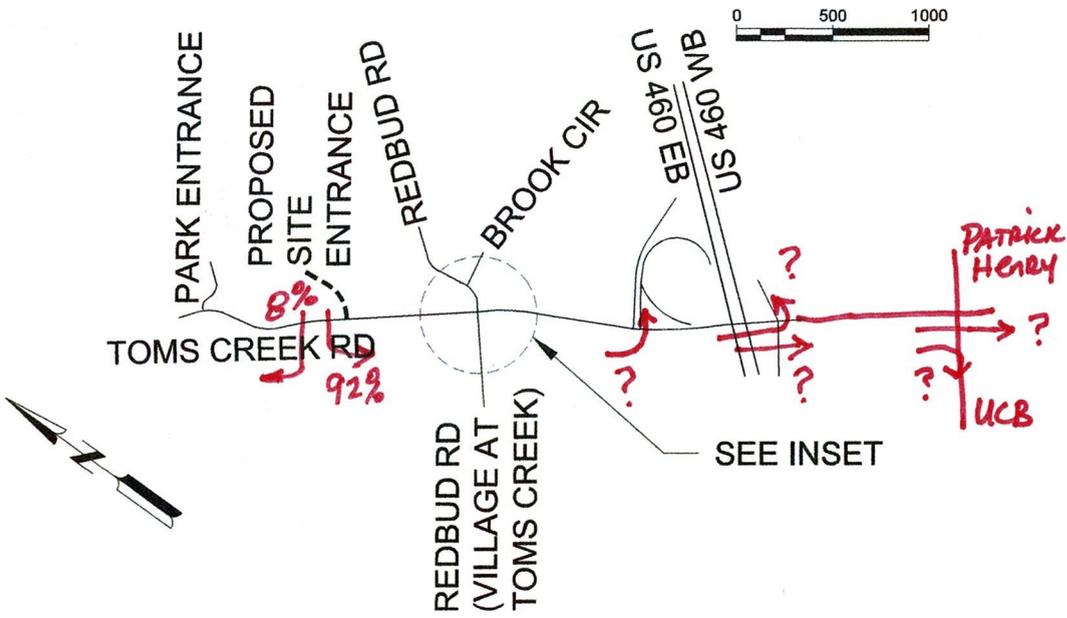
Published Traffic Count (2018)			
Count Taken between US 460 and Redbud Road (west of US 460)			
Toms Creek Road (NB and SB)			
AADT	1,800		
K Factor	0.113		
Peak Hour Trips	203		
Direction Factor	0.679		
PHV	138	Peak direction (AM is SB, toward US 460)	
	65	Non-peak direction (AM is NB, toward site)	
Initial Assumption Not Used: Distribution of Trips based on Dwellings and Lots			
		2018 Published Count	
		Peak Direction	Non-Peak Direction
(1) Trips to Redbud Rd EB:			
	15% (55 dwellings / 370)	21	10
(2) Trips to Redbud Rd WB:			
	58% (215 dwellings / 370)	80	38
(3) Trips to Remainder (Toms Creek NB):			
	27% (100 dwellings / 370)	37	17
Total Peak Hr/Peak Direction:		138	65
Based on three other 2018 counts, adjust the 2018 VDOT published counts.			
Based on Actual 2020 counts, utilize different distribution at Redbud Road.			

Assumption - Adjusted Toms Creek Road (NB and SB)				
Original AADT	1,800	1.30 Adjustment (1057/809)	2,340	Adjusted ADT
K Factor	0.113			
Adjusted Peak Hr Trips	264			
Direction Factor	0.679			
PHV	180	Peak direction (AM is SB, toward US 460)		
	84	Non-peak direction (AM is NB, toward site)		
Assumption Based on Gathered Counts (12 hour counts in 2020)				
			2018 Published Count	
			Peak Direction	Non-Peak Direction
(1) Trips to Redbud Rd EB:				
15.1%	Average of Columns (5)+(6)/(3) using 13.8% and 16.5%		27	13
(2) Trips to Redbud Rd WB (7):				
24.0%	Average of Columns (4)/(3) using 24.7% and 23.3%		43	20
(3) Trips to Remainder (Toms Creek NB Passing Site) (14):				
60.9%	Average of Columns (7)/(3) using 61.4% and 60.3%		110	51
	Total Peak Hr/Peak Direction:		180	84
Notes on Assumptions:				
1.	Trips to Redbud Rd EB is supported by half hour counts ranging from 5 to 11 during the peak hour.			
2.	Trips to Redbud Rd WB is supported by half hour counts ranging from 5 to 17 during the peak hour.			
3.	Trips to Toms Creek NB (passing site) is supported by half hour counts ranging from 19 to 32 during the peak hour.			

Virginia Department of Transportation
 Traffic Engineering Division
 2018
 Annual Average Daily Traffic Volume Estimates By Section of Route
 Town of Blacksburg

Route	Length	AADT	QA	4Tire	Bus	-----Truck-----				QC	K Factor	QK	Dir Factor	AAWDT	QW	Year
						2Axle	3+Axle	1Trail	2Trail							
Town of Blacksburg																
Schultz Parking Lot Entrance		NA										NA		NA		
Smithfield Rd		740	G	98%	0%	1%	1%	0%	0%	C	0.114	F	0.667	740	G	2018
Southgate Dr		11000	G	98%	0%	0%	1%	0%	0%	C	0.117	F	0.734	11000	G	2018
Southgate Dr		NA										NA		NA		
Southgate Dr		6100	G	100%	0%	0%	0%	0%	0%	C	0.123	F	0.643	6100	G	2018
Spring Rd		7800	G	98%	0%	2%	0%	0%	0%	C	0.098	F	0.64	7800	G	2018
Stanger St		8100	G	95%	4%	1%	0%	0%	0%	C	0.105	F	0.502	8100	G	2018
Tech Center Dr		4000	G	96%	1%	3%	0%	0%	0%	C	0.121	F	0.641	4000	G	2018
Tech Center Dr		2000	G	94%	2%	3%	1%	0%	0%	C	0.154	F	0.709	2000	G	2018
Toms Creek Road		1800	G	99%	0%	1%	0%	0%	0%	C	0.113	F	0.679	1800	G	2018
Washington St		10000	G	97%	2%	1%	0%	0%	0%	C	0.087	F	0.569	10000	G	2018
Washington St		5000	G	97%	0%	2%	0%	0%	0%	C	0.112	F	0.593	5000	G	2018
West Campus Dr		10000	G	96%	2%	2%	0%	0%	0%	C	0.092	F	0.514	10000	G	2018
West Campus Dr		17000	G	97%	3%	0%	0%	0%	0%	C	0.095	F	0.526	17000	G	2018





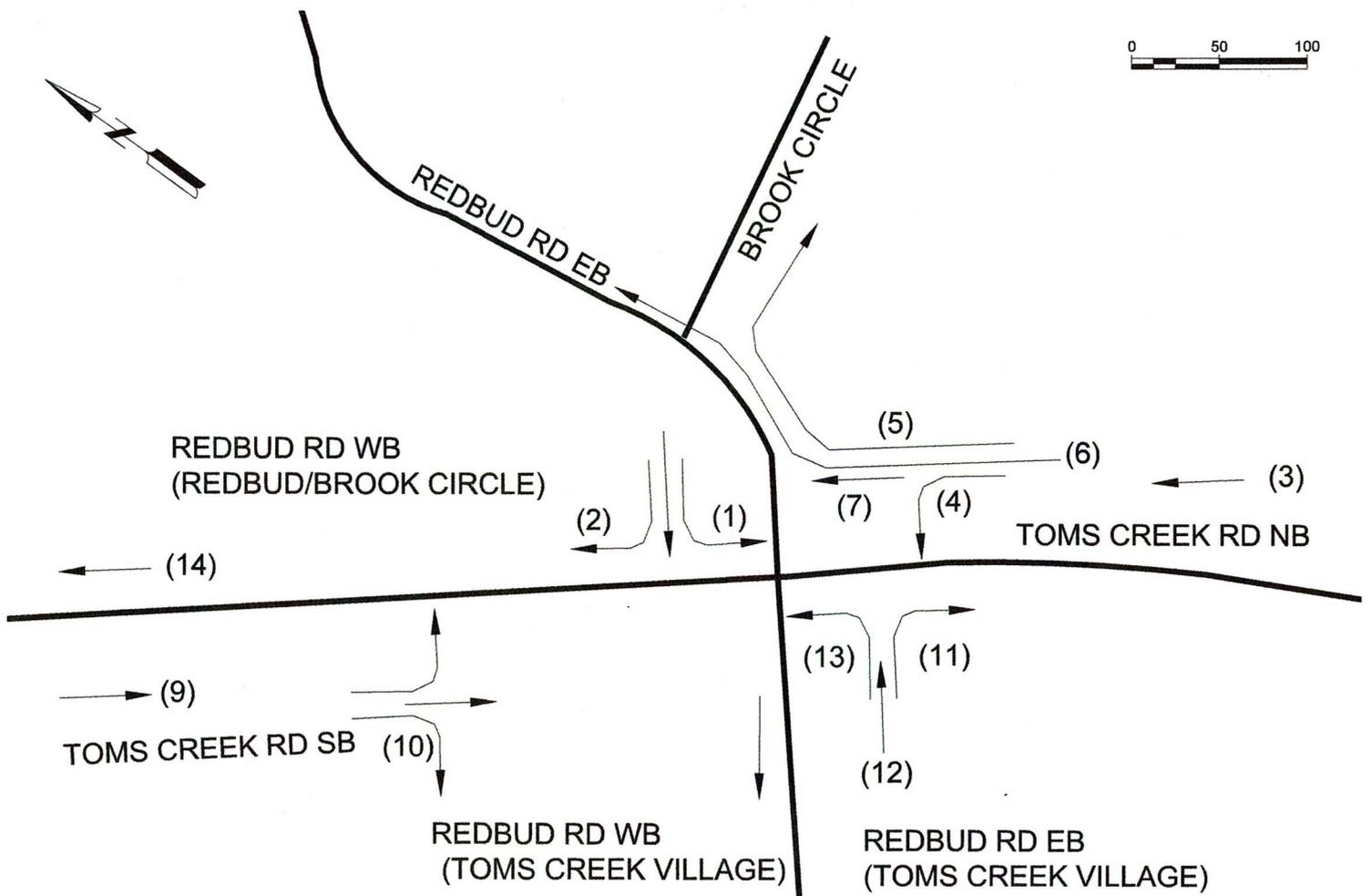
Proposed Site Entrance

80 dwellings

92% turn left onto Toms Creek

WHAT % TAKES US 460 EB

SMALL % TAKES US 460 WB



Counts Taken:		5/28/2020																			
Diagram No	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8) = (4)+(5)+(6)	Percent of Traffic Turning onto Redbud Rd	(9)	(10)	(11)	(12)	(13)	(14)=(2)+(7)+(13)	(9) + (14)	Evaluating Hour	Peak Toms Creek Rd - Passing Site	Comparison to 2018 Published Count - Traffic Between Redbud & US 460	Evaluating Hour	Peak Toms Creek Rd - Redbud Rd & US 460
Time Period	Redbud Rd WB (Redbud Rd/ Brook Circle) left onto Toms Creek SB (toward 460)	Redbud Rd WB (Redbud / Brook Circle) right onto Toms Creek NB (passing site)	Toms Creek NB (from 460)	Toms Creek NB - left to Redbud Rd WB (Toms Creek Village)	Toms Creek NB - right to Redbud EB - to Brook Circle	Toms Creek NB - right to Redbud EB - passing Brook Circle	Toms Creek NB Through - passing site entrance	Summation of Toms Creek NB movements	Percent of Traffic Turning onto Redbud Rd	Toms Creek SB - passing site entrance	Toms Creek SB - right onto Redbud Rd WB (Village)	Redbud Rd EB (Village) - right on Toms Creek SB (toward 460)	Redbud Rd EB (Village) thru to Redbud Rd (Brook Circle)	Redbud Rd EB (Village) left to Toms Creek Rd NB (passing the site)	Toms Creek NB - Total passing site entrance	Toms Creek Rd - Traffic Passing Site - HALF HOUR	Evaluating Hour	Peak Toms Creek Rd - Passing Site	Comparison to 2018 Published Count - Traffic Between Redbud & US 460	Evaluating Hour	Peak Toms Creek Rd - Redbud Rd & US 460
6:00-6:30															0	0			0		
6:30-7:00	1		4	1	2	0	1	3	75%	13		8			1	14	14		26	26	
7:00-7:30	4		8	3	0	0	5	3	38%	13		6			5	18		32	31		57
7:30-8:00	2		15	7	1	0	7	8	53%	17		11		4	11	28	46		45	76	
8:00-8:30	6		15	5	3	0	7	8	53%	14	3	8	1	1	8	22		50	40		85
8:30-9:00	2		12	3	2	1	6	6	50%	17	1	5			6	23	45		35	75	
9:00-9:30	8		24	2	2	1	19	5	21%	17		13			19	36		59	62		97
9:30-10:00	5	2	28	5	0	1	22	6	21%	21	3	11	1		24	45	81		62	124	
10:00-10:30	4		33	8	3	0	22	11	33%	16	1	5			22	38		83	57		119
10:30-11:00	3		43	12	2	4	25	18	42%	28	1	10			25	53	91		83	140	
11:00-11:30	2		31	6	4	4	17	14	45%	12	1	9			17	29		82	53		136
11:30-12:00	3	2	32	5	5	0	22	10	31%	23		10	3		24	47	76		68	121	
12:00-12:30	2		43	15	5	1	22	21	49%	18		4			22	40		87	67		135
12:30-1:00	5		30	10	3	2	15	15	50%	30		10	1	1	16	46	86		75	142	
1:00-1:30	7		39	5	5	2	27	12	31%	29		14			27	56	102		89		164
1:30-2:00	7		34	10	4	1	19	15	44%	21	1	6	2		19	40	96		67	156	
2:00-2:30	5		40	5	5	2	28	12	30%	10		7		1	29	39		79	62		129
2:30-3:00	1		43	14	1	0	28	15	35%	21	2	10			28	49	88		73	135	
3:00-3:30	8	1	43	10	6	0	27	16	37%	19		14		2	30	49		98	84		157
3:30-4:00	8		47	12	3	2	30	17	36%	26		6			30	56	105		87	171	
4:00-4:30	11		41	10	1	0	30	11	27%	18		11			30	48		104	81		168
4:30-5:00	3		43	10	5	2	26	17	40%	25		10			26	51	99		81	162	
5:00-5:30	3		51	17	6	3	25	26	51%	19		10			25	44		95	83		164
5:30-6:00	5		53	11	7	3	32	21	40%	15		8			32	47	91		81	164	
Total	105	5	752	186	75	29	462	290	39%	442	13	206	8	9	476	918			1492		
Analysis of Data	Column (5)+(6)	Percent Trips to Redbud EB (5)+(6)/(3)	Percent Trips to RedbudWB (4)/(3)	Percent Trips to Remainder (Passing Site) (7)/(3)	Directional Peak (Toms Creek Rd in front of site) (9)/(9)+(14)	Directional Peak (Toms Creek Rd from US460 to Redbud Rd) (decimal)															
6:00-6:30																					
6:30-7:00	2	50.0%	25.0%	25.0%	0.93	0.15															
7:00-7:30	0	0.0%	37.5%	62.5%	0.72	0.26															
7:30-8:00	1	6.7%	46.7%	46.7%	0.61	0.33															
8:00-8:30	3	20.0%	33.3%	46.7%	0.64	0.38															
8:30-9:00	3	25.0%	25.0%	50.0%	0.74	0.34															
9:00-9:30	3	12.5%	8.3%	79.2%	0.47	0.39															
9:30-10:00	1	3.6%	17.9%	78.6%	0.47	0.45															
10:00-10:30	3	9.1%	24.2%	66.7%	0.42	0.58															
10:30-11:00	6	14.0%	27.9%	58.1%	0.53	0.52															
11:00-11:30	8	25.8%	19.4%	54.8%	0.41	0.58															
11:30-12:00	5	15.6%	15.6%	68.8%	0.49	0.47															
12:00-12:30	6	14.0%	34.9%	51.2%	0.45	0.64															
12:30-1:00	5	16.7%	33.3%	50.0%	0.65	0.40															
1:00-1:30	7	17.9%	12.8%	69.2%	0.52	0.44															
1:30-2:00	5	14.7%	29.4%	55.9%	0.53	0.51															
2:00-2:30	7	17.5%	12.5%	70.0%	0.26	0.65															
2:30-3:00	1	2.3%	32.6%	65.1%	0.43	0.59															
3:00-3:30	6	14.0%	23.3%	62.8%	0.39	0.51															
3:30-4:00	5	10.6%	25.5%	63.8%	0.46	0.54															
4:00-4:30	1	2.4%	24.4%	73.2%	0.38	0.51															
4:30-5:00	7	16.3%	23.3%	60.5%	0.49	0.53															
5:00-5:30	9	17.6%	33.3%	49.0%	0.43	0.61															
5:30-6:00	10	18.9%	20.8%	60.4%	0.32	0.65															
Total	104	13.8%	24.7%	61.4%																	

Counts Taken:	6/3/2020																
Diagram No	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8) = (4)+(5)+(6)		(9)	(10)	(11)	(12)	(13)	(14)=(2)+(7)+(13)		
Time Period	Redbud Rd WB (Redbud Rd/ Brook Circle) left onto Toms Creek SB (toward 460)	Redbud Rd WB (Redbud / Brook Circle) right onto Toms Creek NB (passing site)	Toms Creek NB (from 460)	Toms Creek NB - left to Redbud Rd WB (Toms Creek Village)	Toms Creek NB - right to Redbud EB - to Brook Circle	Toms Creek NB - right to Redbud EB - passing Brook Circle	Toms Creek NB Through - passing site entrance	Summation of Toms Creek NB movements	Percent of Traffic Turning onto Redbud Rd	Toms Creek SB - passing site entrance	Toms Creek SB - right onto Redbud Rd WB (Village)	Redbud Rd EB (Village) - right on Toms Creek SB (toward 460)	Redbud Rd EB (Village) thru to Redbud Rd (Brook Circle)	Redbud Rd EB (Village) left to Toms Creek Rd NB (passing the site)	Toms Creek NB - Total passing site entrance	Toms Creek Rd Total Half Hour Traffic Passing Site	Evaluating Peak Hour Toms Creek Rd
6:00-6:30										0					0	0	
6:30-7:00	1		5	1			4	1	20%	15		14			4	19	19
7:00-7:30	5		19	5	2	2	10	9	47%	10		5			10	20	39
7:30-8:00	6		15	4	1	0	10	5	33%	17		10			10	27	47
8:00-8:30	3		18	2	1	1	14	4	22%	26		8			14	40	67
8:30-9:00	10		20	2	4	0	14	6	30%	16		9			14	30	70
9:00-9:30	2		26	6	1	0	19	7	27%	15		6			19	34	64
9:30-10:00	6		24	6	1	0	17	7	29%	22		11			17	39	73
10:00-10:30	9		33	7	9	3	14	19	58%	20		10			14	34	73
10:30-11:00	4		31	5	5	1	20	11	35%	17		5			20	37	71
11:00-11:30	2		34	7	4	2	21	13	38%	14		7			21	35	72
11:30-12:00	9		25	7	1	3	14	11	44%	21		6			14	35	70
12:00-12:30	7		42	10	4	3	25	17	40%	24		14			25	49	84
12:30-1:00	7		37	7	4	2	24	13	35%	20		4			24	44	93
1:00-1:30	7		33	5	4	2	22	11	33%	14		8			22	36	80
1:30-2:00	8		38	11	6	2	19	19	50%	22		9			19	41	77
2:00-2:30	6		37	7	3	2	25	12	32%	24		10			25	49	90
2:30-3:00	4		27	7	2	2	16	11	41%	15		8			16	31	80
3:00-3:30	10		35	9	5	4	17	18	51%	22		1			17	39	70
3:30-4:00	7		26	6	3	0	17	9	35%	16		12			17	33	72
4:00-4:30	4		25	8	2	0	15	10	40%	17		5			15	32	65
4:30-5:00	5		50	12	8	0	30	20	40%	20		10			30	50	82
5:00-5:30	4		51	18	10	1	22	29	57%	14		12			22	36	86
5:30-6:00	3		46	11	4	1	30	16	35%	17		8			30	47	83
Total	129	0	697	163	84	31	419	278	40%	418	0	192	0	0	419	837	
Analysis of Data	Column (5)+(6)	Percent Trips to Redbud EB (5)+(6)/(3)	Percent Trips to RedbudWB (4)/(3)	Percent Trips to Remainder (Passing Site) (7)/(3)	Directional Peak (Toms Creek Rd in front of site) (9)/(9)+(14)												
6:00-6:30																	
6:30-7:00	0	0.0%	20.0%	80.0%	0.79												
7:00-7:30	4	21.1%	26.3%	52.6%	0.50												
7:30-8:00	1	6.7%	26.7%	66.7%	0.63												
8:00-8:30	2	11.1%	11.1%	77.8%	0.65												
8:30-9:00	4	20.0%	10.0%	70.0%	0.53												
9:00-9:30	1	3.8%	23.1%	73.1%	0.44												
9:30-10:00	1	4.2%	25.0%	70.8%	0.56												
10:00-10:30	12	36.4%	21.2%	42.4%	0.59												
10:30-11:00	6	19.4%	16.1%	64.5%	0.46												
11:00-11:30	6	17.6%	20.6%	61.8%	0.40												
11:30-12:00	4	16.0%	28.0%	56.0%	0.60												
12:00-12:30	7	16.7%	23.8%	59.5%	0.49												
12:30-1:00	6	16.2%	18.9%	64.9%	0.45												
1:00-1:30	6	18.2%	15.2%	66.7%	0.39												
1:30-2:00	8	21.1%	28.9%	50.0%	0.54												
2:00-2:30	5	13.5%	18.9%	67.6%	0.49												
2:30-3:00	4	14.8%	25.9%	59.3%	0.48												
3:00-3:30	9	25.7%	25.7%	48.6%	0.56												
3:30-4:00	3	11.5%	23.1%	65.4%	0.48												
4:00-4:30	2	8.0%	32.0%	60.0%	0.53												
4:30-5:00	8	16.0%	24.0%	60.0%	0.40												
5:00-5:30	11	21.6%	35.3%	43.1%	0.39												
5:30-6:00	5	10.9%	23.9%	65.2%	0.36												
Total	115	16.5%	23.4%	60.1%													

Trip Generation

Source: 10th (September 2017) Edition of ITE Trip Generation Manual. Trips determined using fitted curve equations.

Land Use:	Single-Family Detached (210)
Dwelling Units (DU):	80

	Weekday	AM PHV	PM PHV
Fitted curve equation	$\ln(T) = .92*\ln(DU)+2.71$	$T = 0.71*DU+4.8$	$\ln(T) = .96*\ln(DU)+0.2$
Trips (T)	846.8	61.6	82.0
Entering/exiting %	50/50	25/75	63/37
Entering	423.4	15.4	51.7
Exiting	423.4	46.2	30.3

Note:

80 dwellings to utilize proposed connection along Toms Creek Road. 5 dwellings to utilize Redbud Rd.

Post-development Traffic Volume - Analysis for Turn Lane

(3) Remainder Trips		To US 460		From US 460	
		Existing	AM PHV (7-9 am)		110
PM PHV (4-6 pm)			51	110	

Proposed	AM PHV				
	Peak hour trip ends*	61.6			
		Entering		Exiting	
	Entering/exiting %	25%		75%	
	Entering/exiting PHV	15.4		46.2	
		Right-In From US 460	Left-In Heading Toward US 460	Away From US 460	Toward US 460
	Directional Traffic Percentage**	92.0%	8.0%	8.0%	92.0%
	Movement PHV	14.2	1.2	3.7	42.5
	PM PHV				
	Peak hour trip ends*	82.0			
		Entering		Exiting	
	Entering/exiting %	63%		37%	
	Entering/exiting PHV	51.7		30.3	
		Right-In From US 460	Left-In Heading Toward US 460	Away From US 460	Toward US 460
	Directional Traffic Percentage**	92.0%	8.0%	8.0%	92.0%
Movement PHV	47.5	4.1	2.4	27.9	

*single-family detached dwelling units utilized. Reference "Trip Generation" table.

**Assumption Using Village at Toms Creek Movements (Assumption is more conservative than 68/32 split for Toms Creek Road Distribution)

Evaluation of Right Turn Lane / Taper (Figure 3-26 (2-Lane Highway):

AM Peak Approach Vehicles:	65.2	(51 exist + 14.2 proposed)
Right Turns:	14.2	No Taper or Turn Lane Warranted
PM Peak Approach Vehicles:	157.5	(110 exist + 47.5 proposed)
Right Turns:	47.5	No Taper or Turn Lane Warranted

Threshold for Taper: **230** Approach Vehicles would be required to warrant a taper.

Evaluation of Left Turn Lane - No charts exists for design speed 30 MPH.

Utilize conservative approach to evaluate utilizing charts for design speed 40 MPH from Table 3-1, Appendix F, Road Design Manual.

AM Peak:

Opposing Vehicles	65.2	(51 existing + 14.2 proposed)
Advancing Vehicles	111.2	(110 existing + 1.2 proposed)
Left Turns:	1.2	1.1% No turn lane required
Turn lane Threshold:	800 opposing vehicles / 330 advancing vehicles	

PM Peak:

Opposing Vehicles	157.5	(110 existing + 47.5 proposed)
Advancing Vehicles	55.1	(51 existing + 4.1 proposed)
Left Turns:	4.1	7.5% No turn lane required
Turn lane Threshold:	800 opposing vehicles / 240 advancing vehicles	

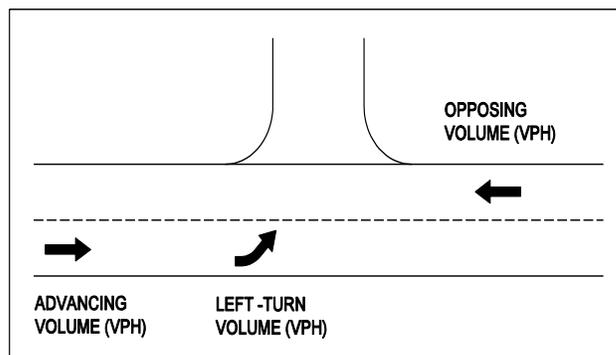
WARRANTS FOR LEFT TURN LANES ON TWO-LANE HIGHWAYS

VPH OPPOSING VOLUME	ADVANCING VOLUME			
	5% LEFT TURNS	10% LEFT TURNS	20% LEFT TURNS	30% LEFT TURNS
40-MPH DESIGN SPEED*				
800	330	240	180	160
600	410	305	225	200
400	510	380	275	245
200	640	470	350	305
100	720	515	390	340
50-MPH DESIGN SPEED*				
800	280	210	165	135
600	350	280	195	170
400	430	320	240	210
200	550	400	300	270
100	615	445	335	295
60-MPH DESIGN SPEED*				
800	230	170	125	115
600	290	210	160	140
400	365	270	200	175
200	450	330	250	215
100	505	370	275	240

TABLE 3-1

Source: Adapted from 2011 AASHTO Green Book, Chapter 9, Section 9.7.3, Page 9-132, Table 9-23

* USE DESIGN SPEED IF AVAILABLE, IF NOT USE LEGAL SPEED LIMIT.*



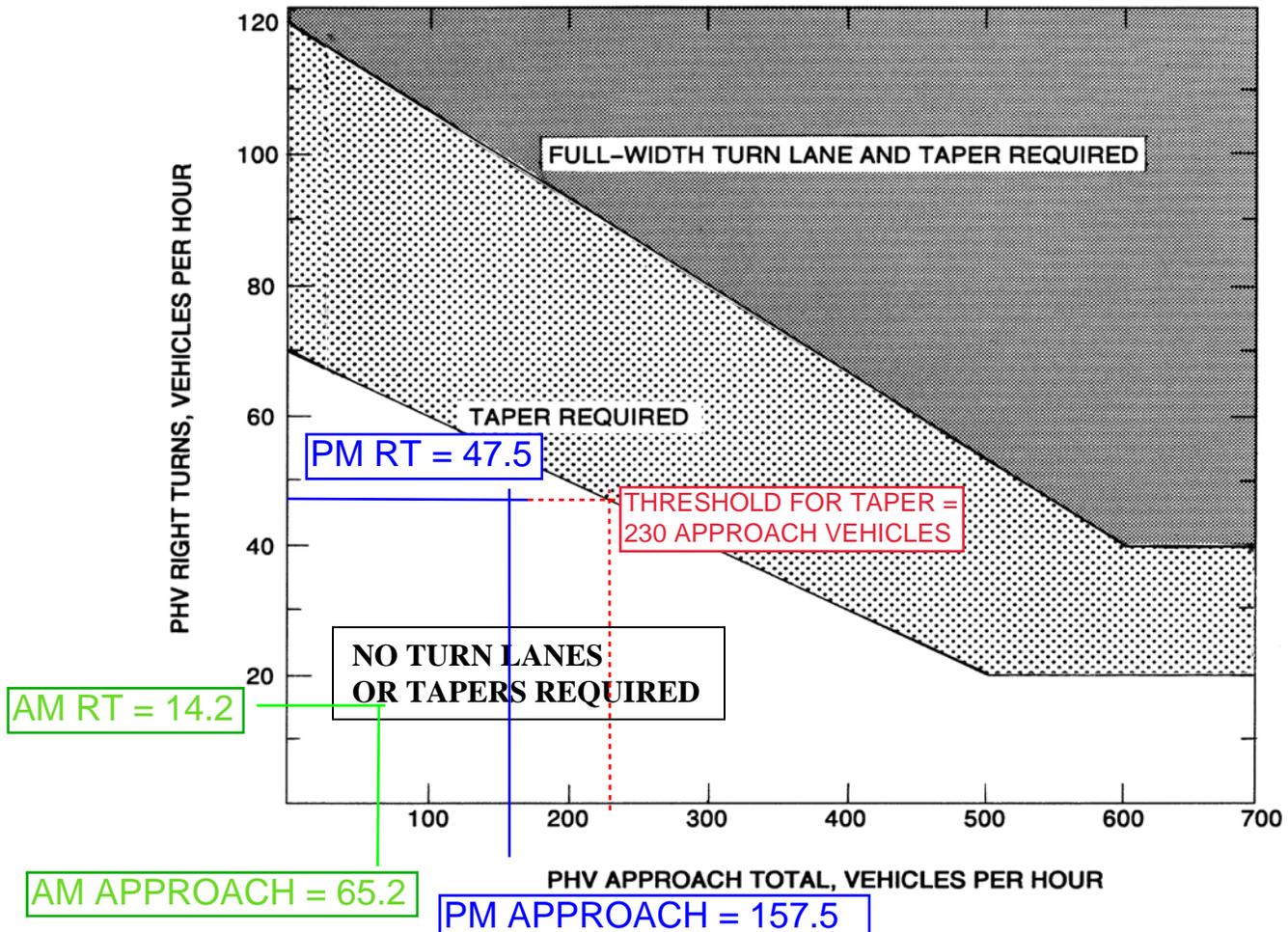
Example:

Two-lane highway with 40-MPH operating speed

Opposing Volume (VPH) - 600
 Advancing Volume (VPH) - 440
 Left-Turn Volume (VPH) - 44 or 10% of Advancing Volume

With opposing volume (VPH) of 600 and 10% of advancing volume (VPH) making left turns, and advancing volume (VPH) of 305 or more will warrant a left-turn lane.

When the Average Running Speed on an existing facility is available, the corresponding Design Speed may be obtained from [Appendix A, Section A-1](#).



Appropriate Radius required at all Intersections and Entrances (Commercial or Private).

LEGEND

PHV - Peak Hour Volume (also Design Hourly Volume equivalent)

Adjustment for Right Turns

For posted speeds at or under 45 mph, PHV right turns > 40, and PHV total < 300.

Adjusted right turns = PHV Right Turns - 20

If PHV is not known use formula: $PHV = ADT \times K \times D$

K = the percent of AADT occurring in the peak hour

D = the percent of traffic in the peak direction of flow

Note: An average of 11% for K x D will suffice.

When right turn facilities are warranted, see Figure 3-1 for design criteria.*

FIGURE 3-26 WARRANTS FOR RIGHT TURN TREATMENT (2-LANE HIGHWAY)

* Rev. 1/15

**TOWN OF BLACKSBURG GIS
(NOT TO SCALE)**

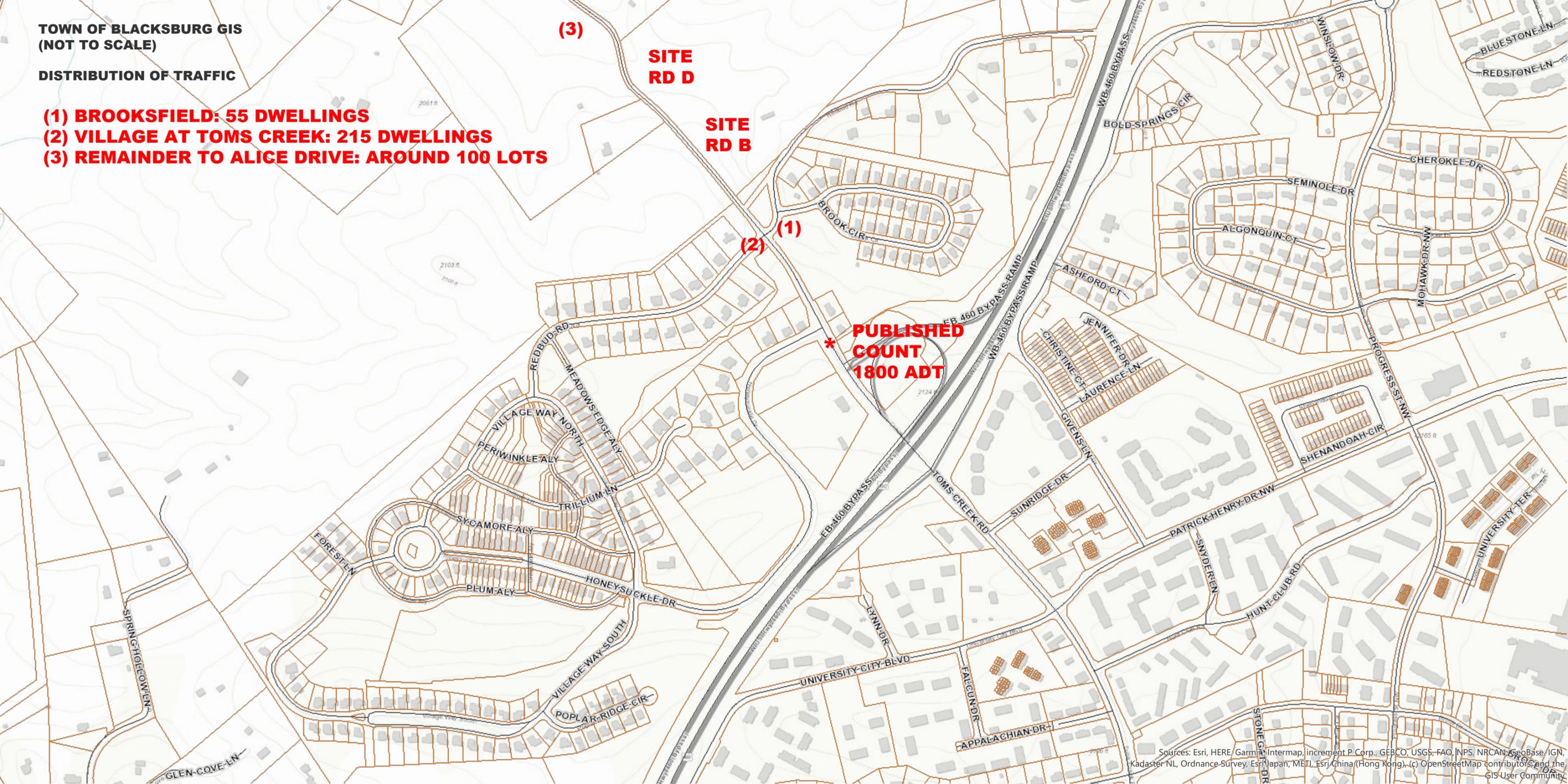
DISTRIBUTION OF TRAFFIC

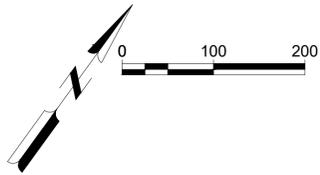
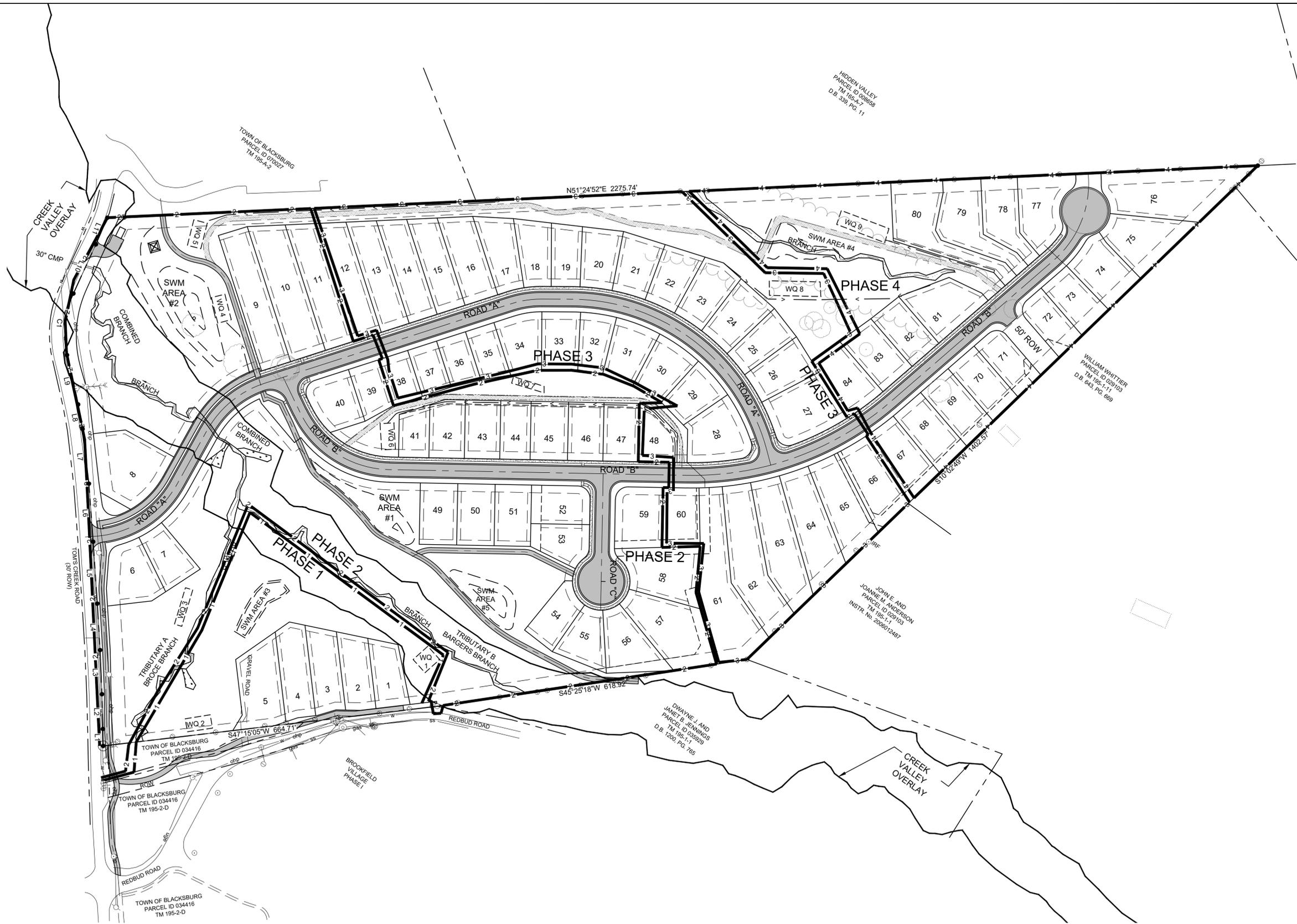
- (1) BROOKSFIELD: 55 DWELLINGS**
- (2) VILLAGE AT TOMS CREEK: 215 DWELLINGS**
- (3) REMAINDER TO ALICE DRIVE: AROUND 100 LOTS**

**SITE
RD D**

**SITE
RD B**

*** PUBLISHED
COUNT
1800 ADT**





LINE TABLE		
LINE	BEARING	DISTANCE
L1	N37°00'30"W	33.50'
L2	N37°32'48"W	68.56'
L3	N38°25'32"W	87.04'
L4	N39°28'05"W	91.66'
L5	N39°48'13"W	122.36'
L6	N40°14'20"W	114.71'
L7	N42°34'24"W	108.52'
L8	N46°13'50"W	49.15'
L9	N48°46'00"W	99.80'
L10	N11°19'32"W	106.66'
L11	N12°37'37"W	57.16'

CURVE TABLE					
CURVE	RADIUS	ARC LENGTH	DELTA ANGLE	CHORD LENGTH	CHORD BEARING
C1	190.14'	124.25'	37°26'28"	122.05'	N30°02'46"W

No.	Revision / Issue	Date

EDEN & ASSOCIATES
 engineering • planning • development
 1800 KRAFT DRIVE, SUITE 111
 BLACKSBURG, VIRGINIA, 24060
 VOICE 276-632-6231
 FAX: 276-632-3648



EXHIBIT FOR REZONING OVERALL DEVELOPMENT

PROPOSED DEVELOPMENT FOR
LUCAS CONSTRUCTION AND DEVELOPMENT, INC.
BEREWICK
 PROPERTY OF LUCAS TOR, LLC
 PARCEL ID 006160; TM# 195-A-5; 40.345 ACRES
 PRICES FORK MAGISTERIAL DISTRICT
 TOWN OF BLACKSBURG, MONTGOMERY COUNTY, VA

Drawn By:	Scale:
PJB	AS SHOWN
Checked By:	Date:
MTJ	07-01-2020
Sheet No.	
1 of 1	Z1

Trip Generation Summary

Land Use (ITE Code)	Number of Lots	Daily Traffic (vpd)	AM Peak Hour Trips (vph)		PM Peak Hour Trips (vph)	
			Enter	Exit	Enter	Exit
Single-Family Detached Housing (210)	95	992	18	54	61	36

Capacity Analysis Results

INTERSECTION	LANE GROUP	Weekday AM Peak Hour				Weekday PM Peak Hour			
		Lane LOS	Delay (sec)	Approach (sec)	Overall (sec)	Lane LOS	Delay (sec)	Approach (sec)	Overall (sec)
Tom's Creek Road and WB US 460 Ramp	EBL/T	B	13.8	A (6.9)	A (8.1)	C	30.1	B (15.1)	B (14.8)
	EBR	A	6.0			A	8.7		
	NBT/R	B	10.3	B (10.3)		B	16.9	B (16.9)	
Tom's Creek Road and University City Blvd / Patrick Henry Dr	SBL	B	15.5	A (5.8)	B (19.2)	C	28.9	A (5.6)	C (31.5)
	SBT	A	5.5			A	3.9		
	EBL	B	14.8	B (15.1)		C	31.5	C (25.6)	
	EBT/R	B	15.2			C	22.9		
Tom's Creek Road and University City Blvd / Patrick Henry Dr	WBL	B	16.7	C (21.3)	B (19.2)	B	18.5	D (38.6)	C (31.5)
	WBT/R	C	23.5			D	45.3		
	NBL	B	11.9	B (17.5)		B	15.9	C (33.0)	
	NBT/R	B	18.7			D	37.2		
Tom's Creek Road and University City Blvd / Patrick Henry Dr	SBL	B	12.8	B (19.2)	B (19.2)	C	29.3	C (25.7)	C (31.5)
	SBT/R	C	21.4			C	23.4		

June 30, 2020

Paul Brown
Eden & Associates, PC
1800 Kraft Drive, Suite 111
Blacksburg, Virginia 24060
Phone: (540) 797-1250 Email: Paul@edenandassociates.com
[Sent via Email]

Reference: Berewick - Blacksburg, VA

Subject: Traffic Analysis Summary

Future (2028) Traffic Volume Development

Weekday AM and PM peak hour traffic volumes, peak hour factors (PHFs), and truck percentages were obtained from turning movement counts that were conducted in 2018 at the intersections of the Westbound US 460 Ramp and University City Boulevard/Patrick Henry Drive at Tom's Creek Road. Future (2028) peak hour traffic volumes were estimated by applying a compounded annual growth rate of 0.5%. In addition to background growth, traffic associated with the following three (3) approved developments: Terrace View, The View, and 1222 Patrick Henry rezoning. To account for the potential traffic diversion associated with the elimination of left turns onto Route 460 Bypass from North Main Street, the left turn movements were obtained from the turning movement counts that were collected at the intersection of Route 460 Bypass and Farmingdale Lane/North Main Street. Based on the peak hour volumes, 72 vehicles made a left turn onto Route 460 Bypass from North Main Street during the AM peak hour and 65 vehicles made a left turn during the PM peak hour. Anticipated peak hour traffic volumes for the future year 2028 were estimated by applying a compounded annual growth rate of 0.5%. A conservative approach was taken and 90% of the projected left turn volumes were diverted to Tom's Creek Road via Sunridge Drive (5%) and Patrick Henry Drive (85%) based on past coordination with the Town of Blacksburg. Refer to the spreadsheet for a summary of the future traffic development without the site developed in tabular format.

It is understood that the development could consist of up to 95 single-family homes. Average weekday daily and peak hour trips for the proposed development were calculated utilizing methodology contained within the 10th Edition of the Institute of Transportation Engineers (ITE) *Trip Generation* manual. ITE equations were used to generate weekday daily as well as AM and PM peak hour trips for Single-family Detached Housing (ITE Code 210). Refer to Table 1 for a detailed breakdown of the trip generation results.

Table 1: Trip Generation Summary

Land Use (ITE Code)	Number of Lots	Daily Traffic (vpd)	AM Peak Hour Trips (vph)		PM Peak Hour Trips (vph)	
			Enter	Exit	Enter	Exit
Single-Family Detached Housing (210)	95	992	18	54	61	36

It is estimated that development could generate 922 total trips during a typical 24-hour weekday period. Of the daily traffic volume, 72 trips (18 entering and 54 exiting) could be generated during the AM peak hour and 97 trips (61 entering and 36 exiting) during the PM peak hour. Trip distribution percentages used in assigning site traffic for this development were estimated based on existing traffic data and patterns, previously prepared traffic studies, and engineering judgment. Trip distribution percentages were submitted and approved by the Town of Blacksburg.

Refer to the spreadsheet for a summary of the future traffic development with the site developed in tabular format.

Capacity Analysis

Study intersections were analyzed using the methodology outlined in the *Highway Capacity Manual* (HCM) published by the Transportation Research Board. Level of service is the design criteria for this traffic analysis. A computer software package, Synchro (Version 10.3), was used to complete the analyses for the study intersections.

The HCM defines capacity as “the maximum hourly rate at which persons or vehicles can reasonably be expected to traverse a point or uniform section of a lane or roadway during a given time period under prevailing roadway, traffic, and control conditions.” Level of service (LOS) is a term used to represent different driving conditions and is defined as a “qualitative measure describing operational conditions within a traffic stream, and their perception by motorists and/or passengers.” Level of service varies from Level “A” representing free flow, to Level “F” where greater delays are evident. Refer to Table 2 for HCM levels of service and related average control delay per vehicle for signalized intersections. Control delay as defined by the HCM includes “initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay”. An average control delay of 30 seconds at a signalized intersection results in LOS C operation at the intersection.

Table 2: Highway Capacity Manual – Levels of Service and Delay

SIGNALIZED INTERSECTION	
LEVEL OF SERVICE	AVERAGE CONTROL DELAY PER VEHICLE (SECONDS)
A	0-10
B	10-20
C	20-35
D	35-55
E	55-80
F	>80

The study intersections were analyzed utilizing the existing lane configurations and traffic control. Cycle lengths and splits were optimized.

Under future (2028) ‘build’ traffic conditions, capacity analysis indicates that both signalized intersections are expected to operate at an overall LOS C or better during the AM and PM peak hours. Refer to Table 3 for a summary of the capacity analysis results.

Table 3: Capacity Analysis Results

INTERSECTION	LANE GROUP	Weekday AM Peak Hour				Weekday PM Peak Hour			
		Lane LOS	Delay (sec)	Approach (sec)	Overall (sec)	Lane LOS	Delay (sec)	Approach (sec)	Overall (sec)
Tom's Creek Road and WB US 460 Ramp	EBL/T EBR	B A	13.8 6.0	A (6.9)	A (8.2)	C A	30.2 8.7	B (15.1)	B (14.9)
	NBT/R	B	10.3	B (10.3)		B	17.0	B (17.0)	
	SBL SBT	B A	15.5 5.5	A (5.8)		C A	28.9 3.9	A (5.6)	
Tom's Creek Road and University City Blvd / Patrick Henry Dr	EBL EBT/R	B B	14.8 15.2	B (15.1)	B (19.2)	C C	31.5 22.9	C (25.6)	C (31.5)
	WBL WBT/R	B C	16.7 23.5	C (21.3)		B D	18.5 45.3	D (38.6)	
	NBL NBT/R	B B	11.9 18.7	B (17.5)		B D	15.9 37.2	C (33.0)	
	SBL SBT/R	B C	12.8 21.4	B (19.2)		C C	29.3 23.4	C (25.7)	

Existing (2018)		Projected (2028)		Terrace View		The View		1222 Patrick Henry		Traffic Diversion from N.Main Street		Future (2028) without Site		Berewick				Future (2028) with Site			
AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	68	61	AM	PM	Distribution		Assignment				AM	PM
														Enter	Exit	AM		PM			
																Enter	Exit	Enter	Exit		
														18	54	61	36				

Intersection 1: Tom's Creek Road & US 460 WB Ramp

SBT	238	152	250	160	1	4	1	3	1	1			253	168		35%	0	19	0	13	272	181
SBL	8	11	8	12									8	12		4%	0	2	0	1	10	13
NBR	25	132	26	139	8	14	1	2	1	1			36	156			0	0	0	0	36	156
NBT	306	513	322	539	2	3	3	9	2	2	71	63	400	616	35%		6	0	21	0	406	637
EBR	207	335	218	352	3	8			1	5			222	365			0	0	0	0	222	365
EBL	18	111	19	117			1	6					20	123	53%		10	0	32	0	30	155

Intersection 2: Tom's Creek Road & University City Boulevard/Patrick Henry Drive

SBR	88	91	93	96			1	3					94	99		11%	0	6	0	4	100	103
SBT	194	157	204	165	3	8	7	18					214	191		24%	0	13	0	9	227	200
SBL	99	161	104	169	4	10	1	3	2	5			111	187			0	0	0	0	111	187
WBR	122	236	128	248	9	12	1	3	3	3	67	60	208	326			0	0	0	0	208	326
WBT	134	167	141	176	9	10			2	3			152	189			0	0	0	0	152	189
WBL	161	164	169	172									169	172			0	0	0	0	169	172
NBR	35	106	37	111									37	111			0	0	0	0	37	111
NBT	108	276	114	290	8	16	3	15					125	321	24%		4	0	14	0	129	335
NBL	26	89	27	94	8	13							35	107			0	0	0	0	35	107
EBR	59	61	62	64	3	7							65	71			0	0	0	0	65	71
EBT	86	229	90	241	4	10			1	4			95	255			0	0	0	0	95	255
EBL	38	136	40	143			1	3					41	146	11%		2	0	7	0	43	153