

January 11, 2023

Mr. Joshua Middleton
Town Engineer
400 South Main Street
Blacksburg, Virginia 24060
Phone: (540) 443-1353

Reference: **Glade Heights** – Traffic Impact Analysis (TIA)
Town of Blacksburg, Virginia

Dear Mr. Middleton,

Glade Spring Crossing LLC is proposing to construct a residential development bound by Village Way (north), Glade Road (south), US Route 460 (east) and Shadow Lake Road (west). The development plan includes a maximum of 180 single family residences with one (1) new driveway proposed along Glade Road and interconnectivity proposed with Village Way which feeds into Toms Creek Road. If approved, the proposed neighborhood is expected to be built-out by 2026.

Ramey Kemp Associates (RKA) has performed this Traffic Impact Analysis (TIA) in coordination with the Town. Figure 1 shows the site location and study intersections, and Figure 2 shows the preliminary site plan.

Existing Roadway Conditions

Prices Fork Road is a four-lane Minor Arterial with an average daily traffic (ADT) volume of approximately 23,000 vehicles per day (vpd) and a posted speed limit of 40 and 35 miles per hour (mph) within the study area. The ADTs are based on the most recent Virginia Department of Transportation (VDOT) Traffic Data publications from 2021.

University City Boulevard is a four-lane Major Collector with an average daily traffic (ADT) volume of approximately 8,300 vehicles per day (vpd) and a posted speed limit of 25 miles per hour (mph) within the study area. The ADTs are based on the most recent VDOT Traffic Data publications from 2021.

Glade Road is a two-lane Major Collector with an average daily traffic (ADT) volume of approximately 2,000 vehicles per day (vpd) and a posted speed limit of 25 miles per hour (mph) in the vicinity of the site. The ADTs are based on the most recent VDOT Traffic Data publications from 2021.

Old Glade Road is a local roadway with an ADT volume of approximately 6,200 vpd and a posted speed limit of 25 mph within the study area. This ADT is based on the traffic counts from 2022 and assuming the weekday PM peak hour volume accounts for 10% of the average daily traffic.

Toms Creek Road is a two-lane Major Collector with an average daily traffic (ADT) volume of approximately 1,800 vehicles per day (vpd) and a posted speed limit of 25 miles per hour (mph) within the study area. The ADTs are based on the most recent VDOT Traffic Data publications from 2021.

Redbud Road is a local roadway with an ADT volume of approximately 720 vpd and a posted speed limit of 25 mph in the vicinity of the site. This ADT is based on the traffic counts from 2022 and assuming the weekday PM peak hour volume accounts for 10% of the average daily traffic.

Honeysuckle Drive is a local roadway with an ADT volume of approximately 1,300 vpd and a posted speed limit of 25 mph in the vicinity of the site. This ADT is based on the traffic counts from 2022 and assuming the weekday PM peak hour volume accounts for 10% of the average daily traffic.

Figure 3 shows the existing traffic control and roadway configurations at the study intersection.

Existing Traffic Volumes

The AM peak hour (7:00 to 9:00 AM) and PM peak hour (4:00 to 6:00 PM) turning movement counts were conducted by Burns Services, Inc. at the following intersections during the week of April 7th, 2022:

- Prices Fork Road and University City Boulevard
- Prices Fork Road and Old Glade Road
- University City Boulevard and Glade Road
- Old Glade Road and Glade Road
- Glade Road and Shadow Lake Road
- Toms Creek Road and Redbud Road
- Toms Creek Road and Honeysuckle Drive

Through coordination with the Town, it was determined based on traffic trends, traffic patterns have nearly returned to 'pre-COVID' levels and since counts were taken while school was in session, no traffic adjustments were necessary. The traffic count data is enclosed, and the existing 2022 volumes are shown in Figure 4.

Approved Developments

Through coordination with the Town, three (3) approved developments were included in this TIA: Berewick, Sturbridge/The Union, and The Farm. It was assumed that all adjacent developments would be constructed and fully operational by 2026.

The Berewick development is assumed to consist of 76 single family units and is located on Toms Creek Road north of Redbud Road.

The Sturbridge/The Union development consists of 1,038 bedrooms of off-campus student housing and is located on University City Boulevard opposite of Broce Drive.

The Farm development is assumed to consist of 8 single family units and 90 bedrooms of off-campus student housing and is located on Glade Road opposite of Oriole Drive.

Background Traffic Growth

Based on discussion with the Town, the 2022 peak hour traffic volumes were grown by an annual rate of 0.5% per year to estimate the no-build 2026 peak hour traffic volumes which are shown in Figure 5.

Trip Generation

Table 1 shows a conservative estimate of the trip generation potential of the proposed community based on the Institute of Transportation Engineers (ITE) *Trip Generation Manual – 11th Edition*. It is our understanding that the development is anticipated to consist of some combination of attached and detached single-family housing. However, for the purpose of this TIA, all units were assumed to be detached.

Table 1: ITE Trip Generation – Weekday – 11th Edition

Land Use (ITE Land Use Code)	Size	Weekday Daily Traffic (vpd)		AM Peak Hour (vph)		PM Peak Hour (vph)	
		Enter	Exit	Enter	Exit	Enter	Exit
Single Family Detached Housing (210)	180 units	867	867	33	94	109	64

Based on information contained within the Trip Generation Manual, the development could be expected to generate approximately 1,734 trips on a typical weekday with 127 trips (33 entering and 94 exiting) generated during the AM peak hour and 173 trips (109 entering and 64 exiting) generated during the PM peak hour.

Site Trip Distribution

The following site trip distribution was applied based on a review of the existing traffic volumes, the adjacent roadway network, and engineering judgement:

- 10% to / from the north on University City Boulevard
- 40% to / from the east on Prices Fork Road
- 30% to / from the west on Prices Fork Road
- 5% to/from the west on Glade Road
- 15% to/from the east on Toms Creek Road

Figure 6 shows the site trip distribution, Figure 7 shows the site trip assignment, and Figure 8 shows the build 2026 peak hour traffic volumes.

Through coordination with the Town, it was determined that 30% of the existing traffic utilizing Honeysuckle Drive or Redbud Road to access the Village neighborhood to the north of the proposed site would utilize the proposed interconnectivity to access Glade Road instead of continuing to utilize the Toms Creek Road. Therefore, rerouted traffic assumptions for 30% of this traffic were calculated. Refer to Figure 10 for an illustration of the rerouted traffic throughout the study network.

VDOT Turn Lane Warrant Analysis

The projected build-out AM and PM peak hour traffic volumes at the proposed entrance on Glade Road were compared to the turn lane warrants in the Virginia Department of Transportation (VDOT) *Access Management Design Standards for Entrances and Intersections*. A westbound right-turn lane along Glade Road is warranted at the proposed site access.



Traffic Capacity Analysis

Traffic capacity analysis for the study intersections was performed using Synchro 10, which is a comprehensive software package that allows the user to model signalized and unsignalized intersections to determine levels-of-service based on the thresholds specified in the Highway Capacity Manual (HCM) – 6th Edition. Through coordination with the Town, HCM 2000 was utilized at the intersection of Prices Fork Road and University City Boulevard due to HCM 6th Edition methodology conflicting with the existing phasing configuration.

Per coordination with the Town, all analysis scenarios utilized the actual heavy vehicle percentages (HVP) by movement that were collected in the turning movement counts. Additionally, the existing analysis scenario utilized the calculated peak hour factor (PHF) from the collected traffic counts for the overall intersection. For future analysis scenarios, a minimum PHF of 0.92 and the calculated PHF from the collected traffic counts was utilized. A PHF of 0.92 was used at the proposed access location during the build traffic conditions. Existing pedestrian volumes from the collected traffic counts were analyzed within the analysis scenarios for all traffic conditions.

Prices Fork Road and University City Boulevard

Table 2 summarizes the capacity analysis results for the signalized intersection of Prices Fork Road and University City Boulevard. The Synchro outputs are enclosed for reference.

Table 2: Level-of-Service Summary for Prices Fork Road and University City Boulevard

CONDITION	LANE GROUP	AM PEAK HOUR				PM PEAK HOUR			
		Lane LOS	Lane Delay (sec)	Lane Queue (ft)	Overall LOS (Delay)	Lane LOS	Lane Delay (sec)	Lane Queue (ft)	Overall LOS (Delay)
Existing (2022) Conditions	EBL	E	66	234	C (29)	E	76	240	D (40)
	EBT (2)	B	16	260		C	21	298	
	EBR	B	11	77		B	16	198	
	WBL	E	72	41		E	71	249	
	WBT (2)	C	22	275		D	37	680	
	WBR	B	20	78		C	29	325	
	NBL	E	68	55		E	67	221	
	NBT/R	E	67	82		E	68	222	
	SBL (2)	E	60	291		E	57	729	
SBT/R	D	55	168	D	51	714			
No-Build (2026) Conditions	EBL	E	66	240	C (30)	F	82	240	D (42)
	EBT (2)	B	16	273		C	22	287	
	EBR	B	12	200		B	17	77	
	WBL	E	72	49		E	71	217	
	WBT (2)	C	22	284		D	40	702	
	WBR	B	20	74		C	33	325	
	NBL	E	68	76		E	67	241	
	NBT/R	E	68	68		E	68	226	
	SBL (2)	E	60	446		E	57	754	
SBT/R	D	54	164	D	51	754			
Build (2026) Conditions	EBL	E	66	240	C (31)	F	80	240	D (43)
	EBT (2)	B	17	273		C	23	280	
	EBR	B	12	201		B	17	82	
	WBL	E	72	86		E	71	249	
	WBT (2)	C	23	292		D	42	700	
	WBR	C	21	90		C	33	325	
	NBL	E	68	74		E	67	183	
	NBT/R	E	68	88		E	68	226	
	SBL (2)	E	60	520		E	58	751	
SBT/R	D	53	200	D	50	747			

Capacity analysis indicates that the signalized intersection is expected to operate at an overall LOS D or better during the AM and PM peak hours for all traffic conditions. All lane groups are expected to operate at LOS E or better during the AM and PM peak hours for all traffic conditions, with the exception of the eastbound left-turn movement during the PM peak hour for all future traffic conditions. When comparing build to no-build conditions, delays are not expected to increase by more than 2 seconds, and all levels of service are expected to be maintained. Additionally, queues are not expected to increase by more than 32 feet (approximately 1 vehicle). Furthermore, the site trips are expected to increase the total volume at this intersection by approximately 2% during the AM and PM peak hours.

Due to minimal impacts from the proposed development, no improvements are recommended at this intersection at build-out of the proposed community.



Prices Fork Road and Old Glade Road

Table 3 summarizes the capacity analysis results for the unsignalized intersection of Prices Fork Road and Old Glade Road. The Synchro outputs are enclosed for reference.

Table 3: Level-of-Service Summary for Prices Fork Road & Old Glade Road

CONDITION	LANE GROUP	AM PEAK HOUR				PM PEAK HOUR			
		Lane LOS	Lane Delay (sec)	Lane Queue (ft)	Overall LOS (Delay)	Lane LOS	Lane Delay (sec)	Lane Queue (ft)	Overall LOS (Delay)
Existing (2022) Conditions	EBL ²	B	11	40	N/A ³	D	28	135	N/A ³
	EBT (2)	--	--	--		--	--	--	
	WBT	--	--	--		--	--	--	
	WBT/R	--	--	--		--	--	--	
	SBR ¹	C	17	83		F	68	248	
No-Build (2026) Conditions	EBL ²	B	10	30	N/A ³	D	34	163	N/A ³
	EBT (2)	--	--	--		--	--	--	
	WBT	--	--	--		--	--	--	
	WBT/R	--	--	--		--	--	--	
	SBR ¹	B	15	58		F	87	290	
Build (2026) Conditions	EBL ²	B	11	33	N/A ³	F	56	260	N/A ³
	EBT (2)	--	--	--		--	--	--	
	WBT	--	--	--		--	--	--	
	WBT/R	--	--	--		--	--	--	
	SBR ¹	C	16	75		F	127	378	

1. Level of service for minor approach
2. Level of service for major-street left-turn movement
3. HCM methodology does not provide lane group or overall LOS, delay, and queue lengths for major street through movements or right turns at unsignalized intersections.

Capacity analysis indicates that the minor-street approach is expected to operate at LOS C or better during the AM peak hour and LOS F during the PM peak hour. The major street left-turn movement is expected to operate at LOS B during the AM peak hour and LOS F or better during the PM peak hours for all traffic conditions. Based on SimTraffic performance reports, which calculates delay per vehicle based on simulation modeling of the study network taking into account the effect of adjacent signals, it is expected that delays in the field are significantly less than the synchro reports calculate. SimTraffic performance reports indicate that the southbound right turn and eastbound left turn delay per vehicle are expected to be 35.0 seconds or less per vehicle, which correlates to LOS E or better. The site trips are expected to increase the total volume at this intersection by less than 4% during the AM and PM peak hours.

While increased delays are expected during the PM peak hour, less than desirable levels of operation currently exist. Additionally, no laneage improvements are expected to decrease delays and the proximity to the signalized intersection of Prices Fork Road and University City Boulevard make traffic control improvements impractical.

Based on the minimal site traffic utilizing the intersection, no improvements are recommended at this intersection at build-out of the proposed community.



University City Boulevard and Glade Road

Table 4 summarizes the capacity analysis results for the signalized intersection of University City Boulevard and Glade Road. The Synchro outputs are enclosed for reference.

Table 4: Level-of-Service Summary for University City Boulevard & Glade Road/Starbucks Driveway

CONDITION	LANE GROUP	AM PEAK HOUR				PM PEAK HOUR			
		Lane LOS	Lane Delay (sec)	Lane Queue (ft)	Overall LOS (Delay)	Lane LOS	Lane Delay (sec)	Lane Queue (ft)	Overall LOS (Delay)
Existing (2022) Conditions	EBL/T	C	26	165	B (17)	C	27	243	B (14)
	EBR	C	25	63		C	27	180	
	WBL/T/R	C	31	155		C	29	168	
	NBL	A	7	46		A	7	106	
	NBT/TR	A	5	64		A	5	138	
	SBL/T	A	9	104		B	11	136	
	SBT/R	A	10	91		B	12	125	
No-Build (2026) Conditions	EBL/T	C	27	216	B (17)	C	27	211	B (14)
	EBR	C	27	111		C	27	176	
	WBL/T/R	C	31	169		C	29	164	
	NBL	A	6	52		A	8	116	
	NBT/TR	A	4	86		A	5	154	
	SBL/T	A	9	134		B	12	162	
	SBT/R	A	9	105		B	13	159	
Build (2026) Conditions	EBL/T	C	27	155	B (18)	C	27	184	B (15)
	EBR	C	29	80		C	28	98	
	WBL/T/R	C	31	171		C	29	177	
	NBL	A	7	61		A	8	125	
	NBT/TR	A	5	77		A	5	156	
	SBL/T	A	9	119		B	13	149	
	SBT/R	A	10	107		B	13	164	

Capacity analysis indicates that the signalized intersection is expected to operate at an overall LOS B during the AM and PM peak hours for all traffic conditions. All lane groups are expected to operate at LOS C or better during the AM and PM peak hours for all traffic conditions. When comparing build to no-build conditions, delays are not expected to increase by more than 2 seconds, and all levels of service are expected to be maintained. Additionally, queues are not expected to increase by more than 13 feet (approximately 1 vehicle). Furthermore, the site trips are expected to increase the total volume at this intersection by approximately 5% and 2% during the AM and PM peak hours, respectively.

Due to minimal impacts from the proposed development, no improvements are recommended at this intersection at build-out of the proposed community.



Old Glade Road and Glade Road

Table 5 summarizes the capacity analysis results for the unsignalized intersection of Old Glade Road and Glade Road. The Synchro outputs are enclosed for reference.

Table 5: Level-of-Service Summary for Old Glade Road & Glade Road

CONDITION	LANE GROUP	AM PEAK HOUR				PM PEAK HOUR			
		Lane LOS	Lane Delay (sec)	Lane Queue (ft)	Overall LOS (Delay)	Lane LOS	Lane Delay (sec)	Lane Queue (ft)	Overall LOS (Delay)
Existing (2022) Conditions	EBT	--	--	--	N/A ³	--	--	--	N/A ³
	EBR	--	--	--		--	--	--	
	WBL/T ²	A	9	10		A	8	10	
	NBL ¹	B	15	20		D	28	103	
	NBR ¹	A	10	13	A	10	15		
No-Build (2026) Conditions	EBT	--	--	--	N/A ³	--	--	--	N/A ³
	EBR	--	--	--		--	--	--	
	WBL/T ²	A	9	10		A	8	10	
	NBL ¹	B	15	20		E	37	135	
	NBR	A	10	13	A	10	15		
Build (2026) Conditions	EBT	--	--	--	N/A ³	--	--	--	N/A ³
	EBR	--	--	--		--	--	--	
	WBL/T ²	A	9	10		A	8	13	
	NBL ¹	C	17	33		F	133	378	
	NBR	B	10	13	B	10	15		
Build (2026) Conditions (All-Way Stop)	EBT	B	11	40	B (11)	B	13	40	C (20)
	EBR	B	10	40		B	11	28	
	WBL/T	B	11	30		C	24	145	
	NBL	B	12	25		D	27	148	
	NBR	A	10	15		B	11	25	

1. Level of service for minor approach
2. Level of service for major-street left-turn movement
3. HCM methodology does not provide lane group or overall LOS, delay, and queue lengths for major street through movements or right turns at unsignalized intersections.

Capacity analysis indicates that the minor-street approach is expected to operate at LOS C or better during the AM peak hour and LOS E or better during the PM peak hour with the exception of the build PM traffic conditions. The major street left-turn movement is expected to operate at LOS A during the AM and PM peak hours for all traffic conditions. While the northbound approach is expected to increase in delays, it is not uncommon for the minor-street approach to experience higher delays during the peak hour when the mainline traffic is the highest. It should be mentioned that heavy queues are not expected to be a consistent issue as the average queue is not expected to exceed 135 feet during the PM peak hour. SimTraffic performance reports calculate the northbound left delay per vehicle to be approximately 23 seconds during the PM peak hour (which correlates to LOS C or better).

As requested by the Town, a signal warrant was analyzed according to the methodology contained within the Manual on Uniform Traffic Control Devices (MUTCD). 12-hour traffic counts were collected in April of 2022, while schools were in session and projected to the build out year (2026) with the aforementioned growth rate. The estimated new site traffic was added to the projected 2026 traffic volumes to determine the volumes used for the analysis. Based on the findings, a traffic signal is not expected to meet warrants. See attached for more information regarding the signal warrant analysis.



Through coordination with the Town, an all-way stop was considered as a potential improvement. Based on criteria and methodology contained within the MUTCD, the traffic volumes under no-build traffic conditions (future traffic without the construction of the proposed development) warrant the recommendation of an all-way stop. Build traffic volumes were analyzed with the all-way stop and capacity analysis indicates that the intersection will operate at an overall LOS C or better during both peak hours. Additionally, the northbound left delays and queues are expected to be significantly reduced. However, it should be noted that all-way stops where multiple approaches have turn-lanes can cause driver confusion and could be a potential safety concern. It is recommended that the Town consider the potential for an all-way stop due to existing traffic concerns. There are no recommended improvements for the developer.

Glade Road and Shadow Lake Road

Table 6 summarizes the capacity analysis results for the unsignalized intersection of Glade Road and Shadow Lake Road. The Synchro outputs are enclosed for reference.

Table 6: Level-of-Service Summary for Glade Road and Shadow Lake Road

CONDITION	LANE GROUP	AM PEAK HOUR				PM PEAK HOUR			
		Lane LOS	Lane Delay (sec)	Lane Queue (ft)	Overall LOS (Delay)	Lane LOS	Lane Delay (sec)	Lane Queue (ft)	Overall LOS (Delay)
Existing (2022) Conditions	EBL/T/R ²	A	8	0	N/A ³	A	8	0	N/A ³
	WBL/T/R ²	A	8	0		A	8	3	
	NBL/T/R ¹	A	10	5		A	9	3	
	SBL/T/R ¹	B	13	23		B	14	8	
No-Build (2026) Conditions	EBL/T/R ²	A	7	0	N/A ³	A	8	0	N/A ³
	WBL/T/R ²	A	8	0		A	8	3	
	NBL/T/R ¹	A	10	3		A	9	3	
	SBL/T/R ¹	B	12	15		B	15	8	
Build (2026) Conditions	EBL/T/R ²	A	8	0	N/A ³	A	8	0	N/A ³
	WBL/T/R ²	A	8	0		A	8	3	
	NBL/T/R ¹	A	10	3		A	9	3	
	SBL/T/R ¹	B	12	15		B	15	8	

1. Level of service for minor approach
2. Level of service for major-street left-turn movement
3. HCM methodology does not provide lane group or overall LOS, delay, and queue lengths for major street through movements or right turns at unsignalized intersections.

Capacity analysis indicates that all approaches are expected to operate at LOS B or better during the weekday AM and PM peak hours for all traffic conditions. The site trips are expected to increase the total volume at this intersection by less than 2% during the AM and PM peak hours.

Based on minimal impacts from the proposed development and minimal site traffic utilizing the intersection, no improvements are recommended at this intersection at build-out of the proposed community.



Toms Creek Road and Redbud Road

Table 7 summarizes the capacity analysis results for the unsignalized intersection of Toms Creek Road and Redbud Road. The Synchro outputs are enclosed for reference.

Table 7: Level-of-Service Summary for Toms Creek Road and Redbud Road

CONDITION	LANE GROUP	AM PEAK HOUR				PM PEAK HOUR			
		Lane LOS	Lane Delay (sec)	Lane Queue (ft)	Overall LOS (Delay)	Lane LOS	Lane Delay (sec)	Lane Queue (ft)	Overall LOS (Delay)
Existing (2022) Conditions	EBL/T/R ²	A	0	0	N/A ³	A	8	0	N/A ³
	WBL/T/R ²	A	8	0		A	7	3	
	NBL/T/R ¹	A	9	5		A	9	3	
	SBL/T/R ¹	A	10	5		B	11	3	
No-Build (2026) Conditions	EBL/T/R ²	A	0	0	N/A ³	A	8	0	N/A ³
	WBL/T/R ²	A	8	0		A	7	3	
	NBL/T/R ¹	A	9	5		A	9	3	
	SBL/T/R ¹	B	11	5		B	12	3	
Build (2026) Conditions	EBL/T/R ²	A	0	0	N/A ³	A	8	0	N/A ³
	WBL/T/R ²	A	8	0		A	7	3	
	NBL/T/R ¹	A	9	3		A	9	3	
	SBL/T/R ¹	B	10	5		B	11	3	

1. Level of service for minor approach
2. Level of service for major-street left-turn movement
3. HCM methodology does not provide lane group or overall LOS, delay, and queue lengths for major street through movements or right turns at unsignalized intersections.

Capacity analysis indicates that all approaches are expected to operate at LOS B or better during the weekday AM and PM peak hours for all traffic conditions. The site trips are expected to increase the total volume at this intersection by less than 3% during the AM and PM peak hours.

Based on minimal impacts from the proposed development and minimal site traffic utilizing the intersection, no improvements are recommended at this intersection at build-out of the proposed community.

Toms Creek Road and Honeysuckle Drive

Table 8 summarizes the capacity analysis results for the unsignalized intersection of Toms Creek Road and Honeysuckle Drive. The Synchro outputs are enclosed for reference.

Table 8: Level-of-Service Summary for Toms Creek Road and Honeysuckle Drive

CONDITION	LANE GROUP	AM PEAK HOUR				PM PEAK HOUR			
		Lane LOS	Lane Delay (sec)	Lane Queue (ft)	Overall LOS (Delay)	Lane LOS	Lane Delay (sec)	Lane Queue (ft)	Overall LOS (Delay)
Existing (2022) Conditions	EBT/R	--	--	--	N/A ³	--	--	--	N/A ³
	WBL ²	A	8	3		A	8	5	
	WBT	--	--	--		--	--	--	
	NBL/R ¹	A	10	8		A	9	3	
No-Build (2026) Conditions	EBT/R	--	--	--	N/A ³	--	--	--	N/A ³
	WBL ²	A	8	3		A	8	5	
	WBT	--	--	--		--	--	--	
	NBL/R ¹	A	10	8		A	9	3	
Build (2026) Conditions	EBT/R	--	--	--	N/A ³	--	--	--	N/A ³
	WBL ²	A	8	3		A	8	5	
	WBT	--	--	--		--	--	--	
	NBL/R ¹	A	10	8		A	9	3	

1. Level of service for minor approach
2. Level of service for major-street left-turn movement
3. HCM methodology does not provide lane group or overall LOS, delay, and queue lengths for major street through movements or right turns at unsignalized intersections.

Capacity analysis indicates that all approaches are expected to operate at LOS A during the weekday AM and PM peak hours for all traffic conditions. The site trips are expected to increase the total volume at this intersection by approximately 5% during the AM and PM peak hours.

Based on minimal impacts from the proposed development and minimal site traffic utilizing the intersection, no improvements are recommended at this intersection at build-out of the proposed community.



Glade Road and Proposed Site Access

Table 9 summarizes the capacity analysis results for the proposed intersection of Glade Road and the Site Access. The Synchro outputs are enclosed for reference.

Table 9: Level-of-Service Summary for Glade Road and Site Access

CONDITION	LANE GROUP	AM PEAK HOUR				PM PEAK HOUR			
		Lane LOS	Lane Delay (sec)	Lane Queue (ft)	Overall LOS (Delay)	Lane LOS	Lane Delay (sec)	Lane Queue (ft)	Overall LOS (Delay)
Build (2026) Conditions	EBL/T ²	A	8	0	N/A ³	A	8	0	N/A ³
	WBT	--	--	--		--	--	--	
	WBR	--	--	--		--	--	--	
	SBL/R ¹	B	13	20		B	14	15	

Bold indicates improvements.

1. Level of service for minor approach
2. Level of service for major-street left-turn movement
3. HCM methodology does not provide lane group or overall LOS, delay, and queue lengths for major street through movements or right turns at unsignalized intersections.

As mentioned previously, a westbound right-turn lane is warranted and recommended. Capacity analysis indicates that with this improvement, all approaches are expected to operate at LOS B or better during the weekday AM and PM peak hours. Due to acceptable levels of service, no additional improvements are recommended.

Recommendations

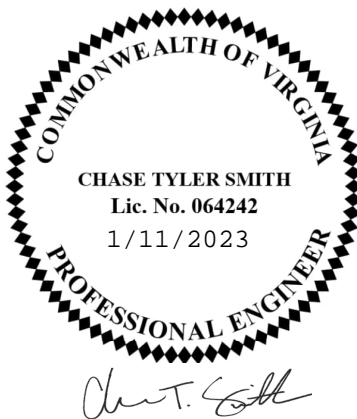
Based on the traffic capacity analysis, all study intersections are expected to operate at acceptable levels at build out of the proposed community with the following improvement.

- Construct a westbound right turn lane on Glade Road at the proposed site access location. Based on the results of the TIA and the VDOT *Access Management Design Standards for Entrances and Intersections*, a turn lane with a minimum of 100 feet of storage should be provided.

Refer to Figure 9 for an illustration of the recommended lane configurations for the study intersections.

We appreciate your attention to this matter. Please contact me at (336) 714-0112 if you have any questions about this report.

Sincerely yours,



Chase Smith, PE
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Enclosures: Figures, Traffic count data, Synchro and SimTraffic output

Copy to: Ms. Meredith Jones, Eden & Associates, P. C.