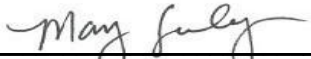




Traffic Engineer's Statement

The attached traffic report and supporting information were prepared under my responsible charge and they comport with the standard of care. So far as is consistent with the standard of care, said report was prepared in general conformance with the criteria established by the County for traffic reports.



Mary Gormley, P.E., PTOE, RSP₁

July 17, 2026

Date

Developer's Statement

I, the Developer, have read and will comply with all commitments made on my behalf within this report.

Mr. Michael Butler
GWH, LLC
6547 N Academy Boulevard
Colorado Springs, Colorado 80918

Date

July 17, 2026

GWH, LLC
6547 N Academy Boulevard
Colorado Springs, Colorado 80918

Attn: Mr. Michael Butler
Manager

Re: Kristin Estates
Traffic Study Letter
El Paso County / Ellicott, Colorado

Dear Mr. Butler,

This traffic study letter has been prepared for a proposed Kristin Estates residential project to be located along the north side of State Highway 94 (SH-94), west of Ellicott Highway in El Paso County / Ellicott, Colorado. The existing property is a vacant parcel. A vicinity map illustrating the location of the property is attached as **Figure 1**. The surrounding area primarily consists of single-family homes on large 5+ acre lots. Kristin Estates is proposed to include up to 11 single family homes on 60 acres with 5-acre lots. The rezoning map is attached for reference.

This traffic letter identifies the amount of traffic associated with this proposed development and the expected project trip distribution and traffic assignment. Access will be provided by an existing private full movement rural local road along SH-94. An auxiliary turn lane assessment of the SH-94 Private rural local road is included in this analysis per the State of Colorado Department of Transportation (CDOT) State Highway Access Code (SHAC) requirements. This study also follows El Paso County guidelines to serve as a Traffic Memorandum based on the daily trip generation being between 100 and 500 trips per day.

EXISTING ROADWAY NETWORK

Direct access to the development will be provided by an existing full movement at Private Drive along the north side of SH-94. SH-94 extends east-west with one through lane in each direction. The posted speed limit is 50 miles per hour for eastbound traffic and 65 miles per hour for westbound traffic. SH-94 is classified by CDOT as a *Non-Rural Principal Highway* (NR-A).

The Private Drive intersection currently serves a trailer yard and other residential homes and operates with stop control on the southbound approach. Of note, there is a driveway located along the south side of SH-94 slightly misaligned to the west. The intersection does not provide auxiliary turn lanes along the State Highway. An aerial photo that illustrates the existing intersection configuration is below (north is up).



SH-94 and Private Drive

The intersection lane configuration and control for this study area intersection is shown in attached **Figure 2**.

PEDESTRIAN AND BICYCLE FACILITIES REVIEW

There are no pedestrian and bicycle facilities along SH-94 or within the study area. This project is not anticipated to create the need for these alternate travel mode facilities.

PUBLIC TRANSPORTATION SERVICES FACILITY REVIEW

There is no public transportation service in this area. With the rural nature, it is believed that public transportation to serve this area is not feasible.

EXISTING AND FUTURE TRAFFIC VOLUMES

Existing vehicle turning movement counts were conducted at the SH-94 and Private Drive intersection on Thursday, January 12, 2023 during the morning and afternoon peak hours. These counts included bicycle and pedestrian volumes, although none were observed. The counts were conducted during the morning and afternoon peak hours of adjacent street traffic in 15-minute intervals from 7:00 AM to 9:00 AM and 4:00 PM to 6:00 PM on this count date. The existing intersection traffic volumes are also shown in attached **Figure 2** with count sheets attached.

According to traffic projections provided by CDOT Online Transportation Information System (OTIS), SH-94 is expected to have a 20-year growth factor of 1.235. This equates to an annual growth rate of approximately 1.06 percent. Therefore, an annual growth rate of one (1) percent was used to calculate short-term 2028 and long-term 2050 background traffic projections along SH-94. CDOT traffic projection information is attached.

TRIP GENERATION

Site-generated traffic estimates are determined through a process known as trip generation. Rates and equations are applied to the proposed land use to estimate traffic generated by the development during a specific time interval. The acknowledged source for trip generation rates is the *Trip Generation Manual*¹ published by the Institute of Transportation Engineers (ITE). ITE has established trip rates in nationwide studies of similar land uses. For this study, Kimley-Horn used the 12th Edition ITE Trip Generation Manual average rates that apply to Single-Family Detached Housing (ITE Code 210) for traffic associated with this development. The following **Table 1** summarizes the estimated trip generation for traffic associated with the development (calculations attached).

Table 1 – Kristin Estates Traffic Generation

Use	Weekday Vehicles Trips						
	Daily	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Single Family Detached Housing (ITE 210) 11 Dwelling Units	354	4	9	13	8	5	13

As shown in the table and based on ITE Trip Generation calculations, Kristin Estates is expected to generate approximately 354 weekday daily trips, with 13 of these trips occurring during the morning peak hour and 13 of these trips occurring during the afternoon peak hour.

TRIP DISTRIBUTION AND TRAFFIC ASSIGNMENT

Distribution of site traffic on the street system was based on the area street system characteristics, existing traffic patterns, existing and anticipated surrounding employment, school, and attraction information, and the proposed access system for the project. The directional distribution of traffic is a means to quantify the percentage of site-generated traffic that approaches the site from a given direction and departs the site back to the original source. The traffic assignment was obtained by applying the project trip distribution to the estimated traffic generation of the development shown in **Table 1**. **Figure 3** illustrates the trip distribution and the traffic assignment for this project.

¹ Institute of Transportation Engineers, *Trip Generation Manual*, Eleventh Edition, Washington DC, 2021.

TOTAL (BACKGROUND PLUS PROJECT) TRAFFIC

Site traffic volumes were added to the background volumes to represent estimated total traffic conditions for the 2028 and 2050 horizons. These total traffic volumes for the study area are illustrated for the 2028 and 2050 horizon years in **Figures 4** and **5**, respectively.

TRAFFIC OPERATIONS ANALYSIS

Kimley-Horn's analysis of traffic operations was conducted to determine potential capacity deficiencies at the Private Drive intersection along SH-94 for the buildout 2028 year and long-term planning 2050 year. The acknowledged source for determining overall capacity is the Highway Capacity Manual². Capacity analysis results are listed in terms of Level of Service (LOS). LOS is a qualitative term describing operating conditions a driver will experience while traveling on a particular street or highway during a specific time interval. It ranges from A (very little delay) to F (long delays and congestion). For intersections and roadways, standard traffic engineering practice recommends LOS D as the minimum threshold for acceptable operations for intersections and LOS E for movements. **Table 2** below shows the definition of level of service for unsignalized intersections.

Table 2 - Level of Service Definitions

Level of Service	Unsignalized Intersection Average Total Delay (sec/veh)
A	≤ 10
B	> 10 and ≤ 15
C	> 15 and ≤ 25
D	> 25 and ≤ 35
E	> 35 and ≤ 50
F	> 50

Transportation Research Board, *Highway Capacity Manual*, Sixth Edition, Washington DC, 2016.

SH-94 & Private Drive

The proposed Kristin Estate project private rural local road intersection operates with stop control on the southbound private rural local road approach. As shown in the table, the intersection movements currently operate acceptably with LOS B or better. With the addition of the Kristin Estates residential project, all movements are anticipated to operate acceptably with LOS B or better during the studied peak hours throughout 2050. **Table 3** provides the results of the level of service at this intersection (calculations attached).

Table 3 – SH-94 & Private Drive LOS Results

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2023 Existing				
Eastbound Left	7.9	A	-	-
Southbound Approach	10.0	B	9.9	A
2028 Total				
Eastbound Left	8.0	A	7.7	A
Southbound Approach	10.7	B	10.1	B
2050 Total				
Eastbound Left	8.2	A	7.8	A
Southbound Approach	11.5	B	10.7	B

² Transportation Research Board, *Highway Capacity Manual*, Sixth Edition, Washington DC, 2016.

CDOT ACCESS PERMIT AND TURN LANE EVALAUTION

The threshold for requiring an access permit along CDOT roadways occurs when project traffic is anticipated to increase the existing access traffic volume by more than 20 percent. Based on traffic projections, the addition of project traffic on the north leg of Private Drive at SH-94 is anticipated to increase existing traffic volumes by more than 20 percent. Therefore, a CDOT Access Permit is anticipated to be needed at this intersection in association with this project.

Auxiliary turn lane requirements were calculated based on the State of Colorado State Highway Access Code (SHAC) for the intersection of Private Drive at SH-94. SH-94 is categorized as NR-A: Non-Rural Principal Highway within the study limits. According to the State Highway Access Code for category NR-A roadways, the following thresholds apply for implementation of auxiliary turn lanes:

- A left turn deceleration lane with taper and storage length is required for any access with a projected peak hour left ingress turning volume greater than 10 vehicles per hour (vph). The taper length will be included within the required deceleration length.
- A right turn deceleration lane and taper length is required for any access with a projected peak hour right ingress turning volume greater than 25 vehicles per hour (vph). The taper length will be included within the required deceleration length.
- A right turn acceleration lane and taper length is required for any access with a projected peak hour right turning volume greater than 50 vehicles per hour (vph) when the posted speed on the highway is greater than 40 mph. The taper length will be included within the required acceleration length.

Based on these thresholds and warrants contained in the Access Code, the NR-A (Non-Rural Principal Highway) designation of SH-94, a 50-mph posted speed limit eastbound, and a 65-mph posted speed limit westbound, and the anticipated project traffic volume in 2050 are as follows:

- An eastbound left turn deceleration **is not** warranted based on the projected 2050 background plus project traffic being six (6) eastbound left turns during the afternoon peak hour and the threshold being 10 vehicles per hour.
- A westbound right turn deceleration lane **is not** warranted based on the projected 2050 background plus project traffic being two (2) westbound right turns during the afternoon peak hour and the threshold being 25 vehicles per hour.
- An acceleration lane for the southbound right to westbound through **is not** warranted based on the projected 2028 background plus project traffic being nine (9) southbound right turns during the peak hour and the threshold being 50 vehicles per hour.

EVALUATION ELEMENTS

It is recommended that sight triangles be provided at the Private Drive along SH-94 to give drivers exiting a clear view of oncoming traffic. Landscaping and objects within sight triangles must not obstruct drivers' views of the adjacent travel lanes. AASHTO standards were used along this State Highway to determine the sight distance needs. The following identifies sight distance requirements for the SH-94 Private Drive intersection associated with the project.

With AASHTO standards and a westbound speed of 65 mph along SH-94, the sight distance for a vehicle turning right from stop is 720 feet. Therefore, all obstructions for right turning vehicles from stop should be clear to the left within the triangle created with a vertex point located 14.5 feet from the edge of the major road traveled way and a line-of-sight distance of 720 feet located in the middle of the westbound through lane along SH-94. With AASHTO standards and an eastbound speed of 50 mph along SH-94, the sight distance for a vehicle turning left from stop is 555 feet. Therefore, all obstructions for left turning vehicles from stop should be clear to the right within the triangle created with a vertex

point located 14.5 feet from the edge of the major road traveled way and a line-of-sight distance of 555 feet located in the middle of the eastbound through lane along SH-94. SH-94 is straight and flat through the Private Drive intersection. The shoulder provides much of the vertical distance needed to the driver's eye and no obstructions were noted to exist. Therefore, it is believed that the existing Private Drive along SH-94 is located to provide necessary sight distances. The sight distance triangles are illustrated in **Figure 6** attached.

SH-94 is CDOT maintained and operated roadway with appropriate speed limit signs placed along the roadway. Additionally, a double yellow center lane and white edge of travel lane are provided. The Private Drive is a private roadway with no speed limit signs or striping. This is consistent with the nature of the roadway. A future private east-west roadway will be constructed by intersecting with Private Drive and terminating approximately 1,825 feet west of the Private Drive intersection. A design waiver is being requested by the project team since the length of the proposed roadway exceeds the County standard for a cul-de-sac/non-through road.

ROAD IMPACT FEES

Road impact fees were evaluated based on the El Paso County Road Impact Fee Schedule. Based on these fee schedule guidelines, the fee for one dwelling unit is \$4,101. Therefore, the road impact fee for the 11 dwelling units is expected to be \$45,111.

CONCLUSIONS AND RECOMMENDATIONS

Based on the traffic analysis presented in this report, Kimley-Horn and Associates, Inc. believes Kristin Estates will be successfully incorporated into the existing and future roadway network. The following outlines the recommendations from our traffic analysis:

- No improvements were identified as being needed for the existing Private Drive intersection along SH-94 to provide access to Kristin Estates.
- It is anticipated that a CDOT access permit will be required in association with the project for the north leg of Private Drive at SH-94.

If you have any questions or require anything further, please feel free to call me at (303) 228-2304.

Sincerely,
KIMLEY-HORN AND ASSOCIATES, INC.

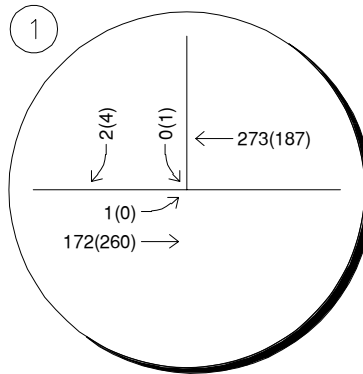
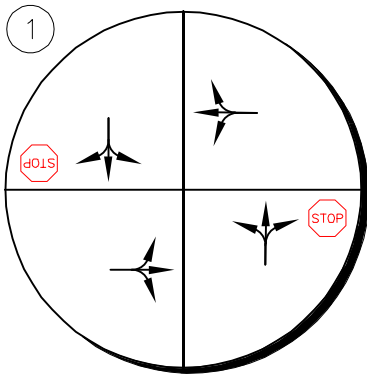

Mary Gormley, P.E., PTOE, RSP₁
Project Traffic Engineer



Figures



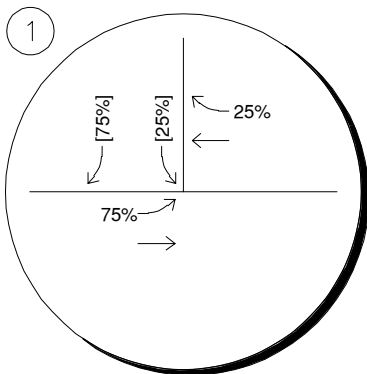
FIGURE 1
KRISTIN ESTATES
EL PASO COUNTY, COLORADO
VICINITY MAP



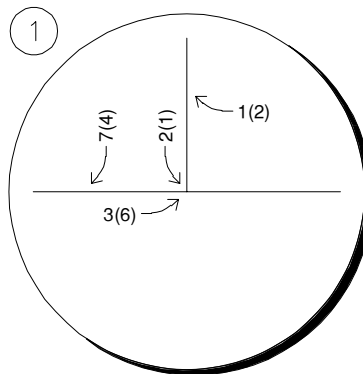
Thursday, January 12, 2023
 7:00 to 8:00AM (4:00 to 5:00PM)

FIGURE 2
KRISTIN ESTATES
EL PASO COUNTY, COLORADO
EXISTING CONDITIONS

LEGEND	
	Study Area Key Intersection
	Stop Controlled Approach
	Roadway Speed Limit
xxx(xxx)	Weekday AM(PM) Peak Hour Traffic Volumes
xx,x00	Estimate Daily Traffic Volumes



DISTRIBUTION

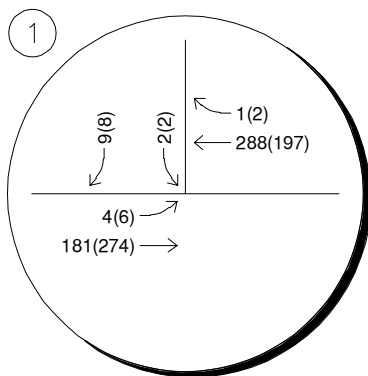
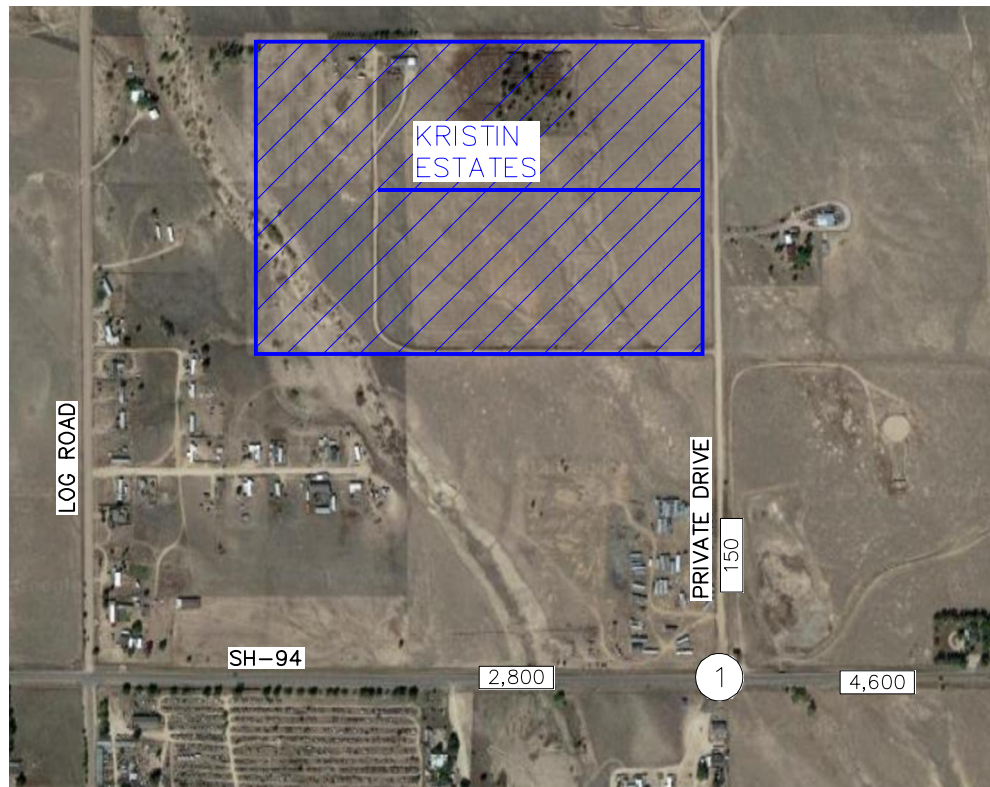


ASSIGNMENT

LEGEND

- (X) Study Area Key Intersection
- XX% External Trip Distribution Percentage
- XX%[XX%] Entering[Exiting] Trip Distribution Percentage
- XXX(XXX) Weekday AM(PM) Peak Hour Traffic Volumes
- [XX,X00] Estimated Daily Traffic Volume

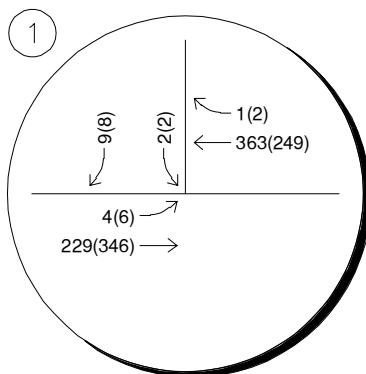
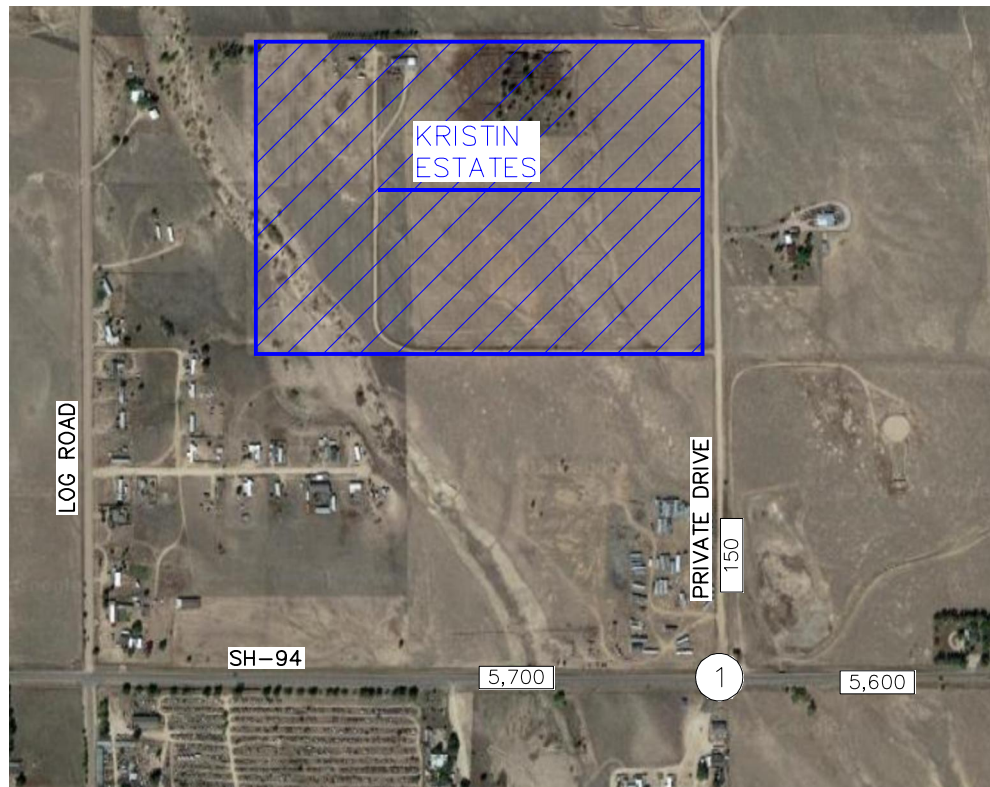
FIGURE 3
 KRISTIN ESTATES
 EL PASO COUNTY, COLORADO
 PROJECT TRIP DISTRIBUTION
 AND ASSIGNMENT



LEGEND

- (X) Study Area Key Intersection
- xxx(xxx) Weekday AM(PM)
Peak Hour Traffic Volumes
- [xx,x00] Estimated Daily Traffic Volume

FIGURE 4
KRISTIN ESTATES
EL PASO COUNTY, COLORADO
2028 TOTAL TRAFFIC VOLUMES



LEGEND

- (X) Study Area Key Intersection
- xxx(xxx) Weekday AM(PM)
Peak Hour Traffic Volumes
- xx,x00 Estimated Daily Traffic Volume

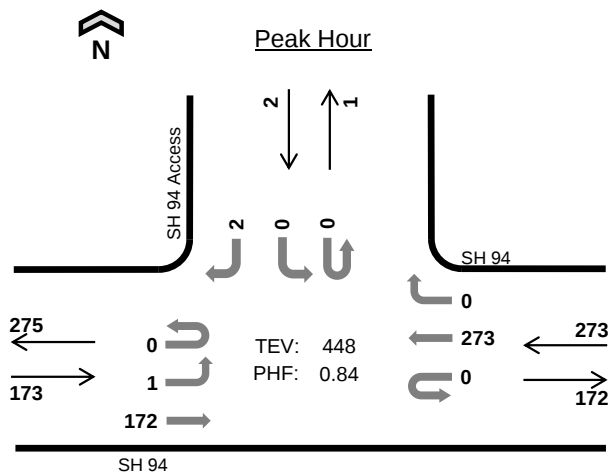
FIGURE 5
KRISTIN ESTATES
EL PASO COUNTY, COLORADO
2050 TOTAL TRAFFIC VOLUMES



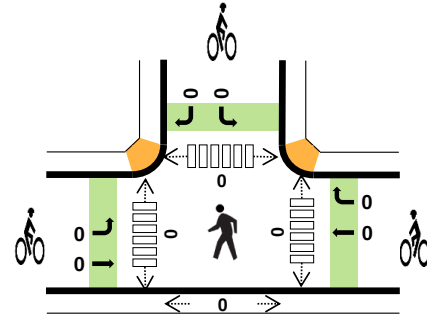
FIGURE 6
KRISTIN ESTATES
EL PASO COUNTY, COLORADO
SIGHT TRIANGLES

Intersection Count Sheets

SH 94 Access SH 94



Date: 01/12/2023
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:00 AM to 8:00 AM



	HV %:	PHF
EB	6.9%	0.65
WB	4.8%	0.91
NB	-	-
SB	0.0%	0.50
TOTAL	5.6%	0.84

Two-Hour Count Summaries

Interval Start		SH 94				SH 94				n/a				SH 94 Access				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	0	29	0	0	0	71	0	0	0	0	0	0	0	0	1	101	0
7:15 AM		0	1	47	0	0	0	60	0	0	0	0	0	0	0	0	0	108	0
7:30 AM		0	0	67	0	0	0	67	0	0	0	0	0	0	0	0	0	134	0
7:45 AM		0	0	29	0	0	0	75	0	0	0	0	0	0	0	0	1	105	448
8:00 AM		0	0	24	0	0	0	48	0	0	0	0	0	0	0	0	0	72	419
8:15 AM		0	0	17	0	0	0	43	0	0	0	0	0	0	0	0	0	60	371
8:30 AM		0	0	22	0	0	0	33	0	0	0	0	0	0	0	0	0	55	292
8:45 AM		0	0	19	0	0	0	32	0	0	0	0	0	0	0	0	1	52	239
Count Total		0	1	254	0	0	0	429	0	0	0	0	0	0	0	0	3	687	0
Peak Hour	All	0	1	172	0	0	0	273	0	0	0	0	0	0	0	0	2	448	0
	HV	0	0	12	0	0	0	13	0	0	0	0	0	0	0	0	0	25	0
	HV%	-	0%	7%	-	-	-	5%	-	-	-	-	-	-	-	-	0%	6%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

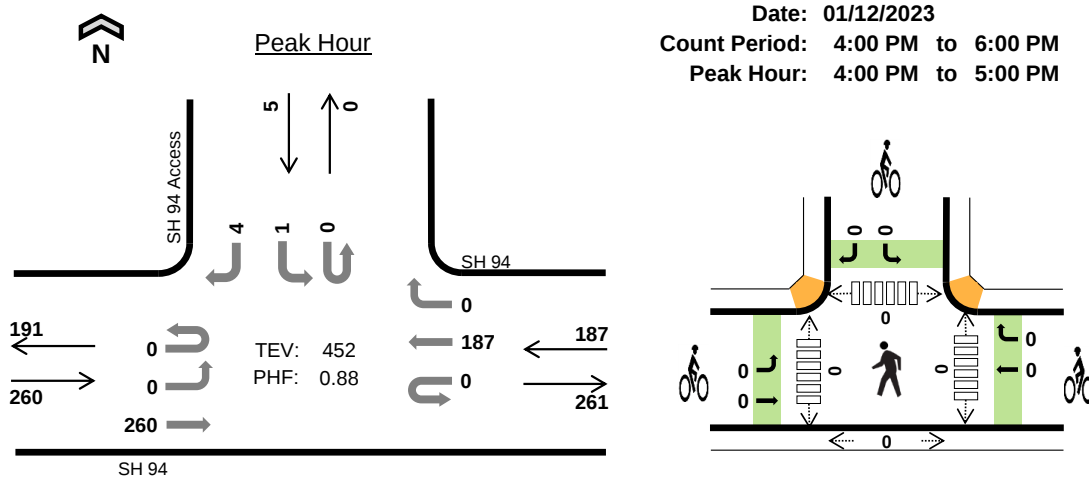
Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	1	2	0	0	3	0	0	0	0	0	0	0	0	0	0
7:15 AM	4	3	0	0	7	0	0	0	0	0	0	0	0	0	0
7:30 AM	5	3	0	0	8	0	0	0	0	0	0	0	0	0	0
7:45 AM	2	5	0	0	7	0	0	0	0	0	0	0	0	0	0
8:00 AM	5	3	0	0	8	0	0	0	0	0	0	0	0	0	0
8:15 AM	4	2	0	0	6	0	0	0	0	0	0	0	0	0	0
8:30 AM	2	7	0	0	9	0	0	0	0	0	0	0	0	0	0
8:45 AM	1	5	0	0	6	0	0	0	0	0	0	0	0	0	0
Count Total	24	30	0	0	54	0	0	0	0	0	0	0	0	0	0
Peak Hr	12	13	0	0	25	0	0	0	0	0	0	0	0	0	0

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	SH 94				SH 94				n/a				SH 94 Access				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	3	0
7:15 AM	0	0	4	0	0	0	3	0	0	0	0	0	0	0	0	0	7	0
7:30 AM	0	0	5	0	0	0	3	0	0	0	0	0	0	0	0	0	8	0
7:45 AM	0	0	2	0	0	0	5	0	0	0	0	0	0	0	0	0	7	25
8:00 AM	0	0	5	0	0	0	3	0	0	0	0	0	0	0	0	0	8	30
8:15 AM	0	0	4	0	0	0	2	0	0	0	0	0	0	0	0	0	6	29
8:30 AM	0	0	2	0	0	0	7	0	0	0	0	0	0	0	0	0	9	30
8:45 AM	0	0	1	0	0	0	5	0	0	0	0	0	0	0	0	0	6	29
Count Total	0	0	24	0	0	0	30	0	0	0	0	0	0	0	0	0	54	0
Peak Hour	0	0	12	0	0	0	13	0	0	0	0	0	0	0	0	0	25	0

Two-Hour Count Summaries - Bikes															
Interval Start	SH 94			SH 94			n/a			SH 94 Access			15-min Total	Rolling One Hour	
	Eastbound			Westbound			Northbound			Southbound					
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT			
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

SH 94 Access SH 94



	HV %:	PHF
EB	6.9%	0.93
WB	5.9%	0.82
NB	-	-
SB	0.0%	0.63
TOTAL	6.4%	0.88

Two-Hour Count Summaries

Interval Start		SH 94				SH 94				n/a				SH 94 Access				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	0	70	0	0	0	57	0	0	0	0	0	0	0	0	1	128	0
4:15 PM		0	0	69	0	0	0	57	0	0	0	0	0	0	0	0	2	128	0
4:30 PM		0	0	57	0	0	0	39	0	0	0	0	0	0	0	0	0	96	0
4:45 PM		0	0	64	0	0	0	34	0	0	0	0	0	0	1	0	1	100	452
5:00 PM		0	1	67	0	0	0	40	0	0	0	0	0	0	0	0	0	108	432
5:15 PM		0	2	57	0	0	0	26	0	0	0	0	0	0	0	0	0	85	389
5:30 PM		0	2	61	0	0	0	27	0	0	0	0	0	0	1	0	1	92	385
5:45 PM		0	1	70	0	0	0	24	0	0	0	0	0	0	0	0	0	95	380
Count Total		0	6	515	0	0	0	304	0	0	0	0	0	0	2	0	5	832	0
Peak Hour	All	0	0	260	0	0	0	187	0	0	0	0	0	0	1	0	4	452	0
	HV	0	0	18	0	0	0	11	0	0	0	0	0	0	0	0	0	29	0
	HV%	-	-	7%	-	-	-	6%	-	-	-	-	-	-	0%	-	0%	6%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	7	5	0	0	12	0	0	0	0	0	0	0	0	0	0
4:15 PM	3	4	0	0	7	0	0	0	0	0	0	0	0	0	0
4:30 PM	4	2	0	0	6	0	0	0	0	0	0	0	0	0	0
4:45 PM	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0
5:00 PM	9	0	0	0	9	0	0	0	0	0	0	0	0	0	0
5:15 PM	5	1	0	0	6	0	0	0	0	0	0	0	0	0	0
5:30 PM	5	2	0	0	7	0	0	0	0	0	0	0	0	0	0
5:45 PM	8	0	0	0	8	0	0	0	0	0	0	0	0	0	0
Count Total	45	14	0	0	59	0	0	0	0	0	0	0	0	0	0
Peak Hr	18	11	0	0	29	0	0	0	0	0	0	0	0	0	0

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	SH 94				SH 94				n/a				SH 94 Access				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	7	0	0	0	5	0	0	0	0	0	0	0	0	0	12	0
4:15 PM	0	0	3	0	0	0	4	0	0	0	0	0	0	0	0	0	7	0
4:30 PM	0	0	4	0	0	0	2	0	0	0	0	0	0	0	0	0	6	0
4:45 PM	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	4	29
5:00 PM	0	1	8	0	0	0	0	0	0	0	0	0	0	0	0	0	9	26
5:15 PM	0	2	3	0	0	0	1	0	0	0	0	0	0	0	0	0	6	25
5:30 PM	0	0	5	0	0	0	2	0	0	0	0	0	0	0	0	0	7	26
5:45 PM	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	8	30
Count Total	0	3	42	0	0	0	14	0	0	0	0	0	0	0	0	0	59	0
Peak Hour	0	0	18	0	0	0	11	0	0	0	0	0	0	0	0	0	29	0
Two-Hour Count Summaries - Bikes																		
Interval Start	SH 94			SH 94			n/a			SH 94 Access			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Peak Hour	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Note: U-Turn volumes for bikes are included in Left-Turn, if any.																		

Traffic Projections

CDOT OTIS: Kristin Estates Future Traffic Projections

ROUTE	REFPT	ENDREFPT	LENGTH	UPDATEYR	AADT	YR20FACTOR	GROWTH RATE	DHV
094A	13.095	17.1	3.992	2024	4500	1.22	1.00%	11
094A	17.1	24.022	6.899	2024	3400	1.25	1.12%	12
AVERAGE:						1.235	1.06%	

LOCATION
ON SH 94 E/O PEYTON HWY CR 463
ON SH 94 E/O ELLICOTT HWY CR 493 ELLICOTT

Trip Generation Worksheet

Kristin Estates Daily Trip Generation Calculations

TRIP GENERATION CHARACTERISTICS						DIRECTIONAL DISTRIBUTION		BASELINE TRIPS		
	Land Use + Code	Source	Scale	ITE Unit	Equation/Rate	Entering %	Exiting %	In	Out	Total
1	(210) Single-Family Detached Housing	ITE 12th Ed	11	DU	$T = 8.07(X) + 265.45$	50%	50%	177	177	354
Total:								177	177	354

Kristin Estates AM Peak Hour Trip Generation Calculations

TRIP GENERATION CHARACTERISTICS						DIRECTIONAL DISTRIBUTION		BASELINE TRIPS		
	Land Use + Code	Source	Scale	ITE Unit	Equation/Rate	Entering %	Exiting %	In	Out	Total
1	(210) Single-Family Detached Housing	ITE 12th Ed	11	DU	T = 0.67(X) + 5.59	27%	73%	4	9	13
Total:								4	9	13

Kristin Estates PM Peak Hour Trip Generation Calculations

TRIP GENERATION CHARACTERISTICS						DIRECTIONAL DISTRIBUTION		BASELINE TRIPS		
	Land Use + Code	Source	Scale	ITE Unit	Equation/Rate	Entering %	Exiting %	In	Out	Total
1	(210) Single-Family Detached Housing	ITE 12th Ed	11	DU	$\text{Ln}(T) = 0.92 \text{ Ln}(X) + 0.33$	62%	38%	8	5	13
Total:								8	5	13

Level of Service Calculations

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	172	273	0	0	2
Future Vol, veh/h	1	172	273	0	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	205	325	0	0	2
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	325	0	-	0	532	325
Stage 1	-	-	-	-	325	-
Stage 2	-	-	-	-	207	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1235	-	-	-	508	716
Stage 1	-	-	-	-	732	-
Stage 2	-	-	-	-	828	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1235	-	-	-	507	716
Mov Cap-2 Maneuver	-	-	-	-	507	-
Stage 1	-	-	-	-	731	-
Stage 2	-	-	-	-	828	-
Approach	EB	WB		SB		
HCM Ctrl Dly, s/v	0.05	0		10.04		
HCM LOS	B					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	10	-	-	-	-	716
HCM Lane V/C Ratio	0.001	-	-	-	-	0.003
HCM Ctrl Dly (s/v)	7.9	0	-	-	-	10
HCM Lane LOS	A	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	-	0

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	260	187	0	1	4
Future Vol, veh/h	0	260	187	0	1	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	295	213	0	1	5
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	213	0	-	0	508	213
Stage 1	-	-	-	-	213	-
Stage 2	-	-	-	-	295	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1358	-	-	-	525	828
Stage 1	-	-	-	-	823	-
Stage 2	-	-	-	-	755	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1358	-	-	-	525	828
Mov Cap-2 Maneuver	-	-	-	-	525	-
Stage 1	-	-	-	-	823	-
Stage 2	-	-	-	-	755	-
Approach	EB	WB		SB		
HCM Ctrl Dly, s/v	0	0		9.89		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1358	-	-	-	742	
HCM Lane V/C Ratio	-	-	-	-	0.008	
HCM Ctrl Dly (s/v)	0	-	-	-	9.9	
HCM Lane LOS	A	-	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0	

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	181	288	1	2	9
Future Vol, veh/h	4	181	288	1	2	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	215	343	1	2	11
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	344	0	-	0	568	343
Stage 1	-	-	-	-	343	-
Stage 2	-	-	-	-	225	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1215	-	-	-	484	699
Stage 1	-	-	-	-	718	-
Stage 2	-	-	-	-	812	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1215	-	-	-	482	699
Mov Cap-2 Maneuver	-	-	-	-	482	-
Stage 1	-	-	-	-	715	-
Stage 2	-	-	-	-	812	-
Approach	EB	WB		SB		
HCM Ctrl Dly, s/v	0.17	0		10.69		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	39	-	-	-	-	646
HCM Lane V/C Ratio	0.004	-	-	-	-	0.02
HCM Ctrl Dly (s/v)	8	0	-	-	-	10.7
HCM Lane LOS	A	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	-	0.1

Intersection

Int Delay, s/veh 0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	6	274	197	2	2	8
Future Vol, veh/h	6	274	197	2	2	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	311	224	2	2	9

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	226	0	0 550 225
Stage 1	-	-	- 225 -
Stage 2	-	-	- 325 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1342	-	- 496 814
Stage 1	-	-	- 812 -
Stage 2	-	-	- 732 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1342	-	- 493 814
Mov Cap-2 Maneuver	-	-	- 493 -
Stage 1	-	-	- 807 -
Stage 2	-	-	- 732 -

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	0.16	0	10.08
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	39	-	-	-	720
HCM Lane V/C Ratio	0.005	-	-	-	0.016
HCM Ctrl Dly (s/v)	7.7	0	-	-	10.1
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	229	363	1	2	9
Future Vol, veh/h	4	229	363	1	2	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	273	432	1	2	11
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	433	0	-	0	715	433
Stage 1	-	-	-	-	433	-
Stage 2	-	-	-	-	282	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1126	-	-	-	397	623
Stage 1	-	-	-	-	654	-
Stage 2	-	-	-	-	766	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1126	-	-	-	395	623
Mov Cap-2 Maneuver	-	-	-	-	395	-
Stage 1	-	-	-	-	651	-
Stage 2	-	-	-	-	766	-
Approach	EB	WB		SB		
HCM Ctrl Dly, s/v	0.14	0		11.54		
HCM LOS	B					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	31	-	-	-	564	
HCM Lane V/C Ratio	0.004	-	-	-	0.023	
HCM Ctrl Dly (s/v)	8.2	0	-	-	11.5	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0	-	-	-	0.1	

Intersection

Int Delay, s/veh 0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	6	346	249	2	2	8
Future Vol, veh/h	6	346	249	2	2	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	393	283	2	2	9

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	285	0	0 691 284
Stage 1	-	-	- 284 -
Stage 2	-	-	- 407 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	1277	-	- 410 755
Stage 1	-	-	- 764 -
Stage 2	-	-	- 672 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1277	-	- 408 755
Mov Cap-2 Maneuver	-	-	- 408 -
Stage 1	-	-	- 759 -
Stage 2	-	-	- 672 -

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	0.13	0	10.68
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	31	-	-	-	645
HCM Lane V/C Ratio	0.005	-	-	-	0.018
HCM Ctrl Dly (s/v)	7.8	0	-	-	10.7
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Conceptual Site Plan

